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A STUDY ON DELAY IN INSURANCE PATIENTS DISCHARGE AT A MULTISPECIALITY HOSPITAL IN KERALA

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ABSTRACT

This article discusses the issue of discharge delays in hospitals in Kerala, which can have significant impacts on patients, healthcare providers, and the healthcare system as a whole. The administrative challenges faced by hospitals, including obtaining insurance authorization, completing documentation, coordinating with different departments, and arranging post-hospital care, can be time-consuming and complex. This article identifies the causes of delay in discharge for patients who are funded through insurance and identifies timely allied services to reduce discharge delays. The article presents data collected through a census method for a period of three months, analyzing the time taken for each process involved in the discharge process, including send for billing, pharmacy clearance, bill clearance, bill closing, and discharge. The article finds that the standard Turn Around Time for the discharge process is 5 hours, and 59.4% of the observations exceed the standard TAT. The article recommends streamlining the administrative processes involved in discharge to reduce discharge delays and improve patient care.

KEYWORDS: Turn Around Time, Insurance, Discharge, Clearance, Administration.

1. INTRODUCTION

Discharge delays in hospitals are a significant issue in India, affecting the healthcare system and patients alike. These delays can be caused by various factors, including administrative challenges, lack of resources, bureaucratic processes, and insurance-related issues. The consequences of discharge delays in hospitals in India can have significant impacts on patients, healthcare providers, and the healthcare system as a whole.

One of the primary causes of discharge delays in hospitals in India is the administrative challenges faced by hospitals. Hospitals often have to deal with a large number of patients, and the administrative processes involved in discharge, such as obtaining insurance authorization, completing documentation, coordinating with different departments, and arranging post-hospital care, can be time-consuming and complex. The lack of streamlined processes, limited staffing, and inadequate training of administrative personnel can further contribute to delays in the discharge process.

Statement of the Problem

Insurance patient discharge delays can impact bed availability in hospitals, leading to decreased capacity to admit new patients. This can result in overcrowding in hospitals, increased waiting times in emergency departments, and delayed access to care for patients who require hospitalization. Overcrowding can also lead to increased risk of hospital-acquired infections and compromise patient safety.

Objectives

- To identify the causes of delay in discharge of the In-Patients who are funded through Insurance.
- To identify timely allied services to reduce discharge delays

Discharge Process

- Doctor will examine the patient for the last time
- Discharge will be confirmed by the doctor
- Discharge summary will be prepared by the doctor
- Patient along with their reports are examined by the additional doctor for cross consultation, this process will be done as per the necessity
- The prepared summary is sent to Insurance department for the purpose of Claims
- The Pharmacy clearance will be provided after returning the unused medicine to the pharmacy from nursing station
- The Files are sent to the billing section for preparing the final bill
- After the clearance of bill, the bill will be sent to the Insurance company for the claim
- The Insurance company will verify all the details and as per the insurance policy, company will pay the part or full payment of the bill to the hospital
- The Patient is informed about the payment of bill if there is any due or part of the amount not paid by the insurance company
- The Patient will vacate the hospital



- Cleaning staff will clean the bed and the patient ward and then it will be kept for the next patient

Indicators

Indicators are used for the purpose of identifying the patient’s discharge process. These Indicators are coloured to identify the process. Those Indicators are listed below along with its represented colours.

Marked for Discharge
Sent for Billing
Discharge Confirmation
Pharmacy Clearance
File Received
Bill Clearance
Bill Closed
Bed Release

2. LITERATURE REVIEW

According to Davis et al. (2020), this study focused on addressing in-patient discharge delays through a quality improvement initiative. The study examined the

3. METHODOLOGY

Research Design	Descriptive Study
Data Collection	Primary Data
Data Collection Method	Census Method
Period of Study	3 months
No. of Data Collected	202

4. ANALYSIS

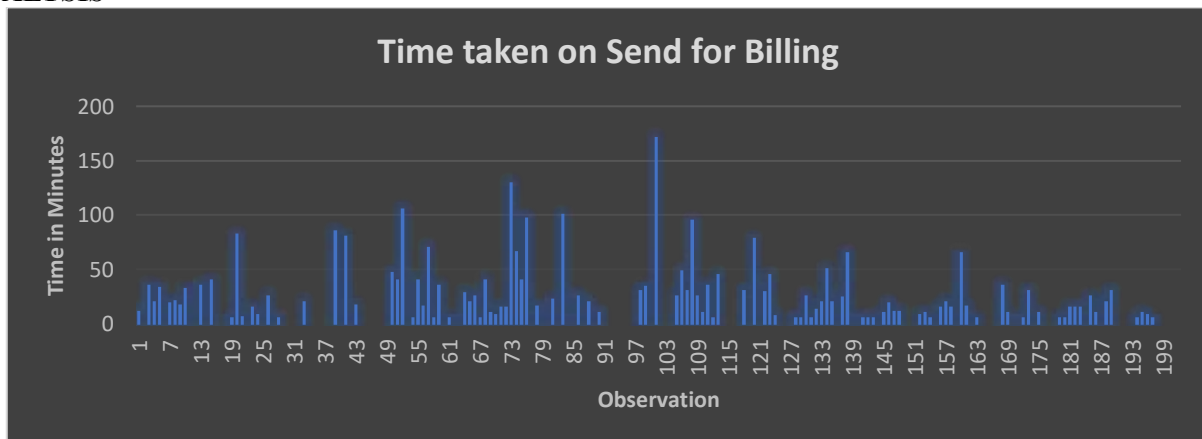


Chart 4.1 : Time taken on Send for Billing

Interpretation:

From the Chart 4.1, we came to know that, out of total observations, 87% of the observations took 1 to 50 minutes on the process of send for billing and only 2 observations took

implementation of interventions aimed at streamlining the discharge process, reducing delays, and improving patient flow. The findings highlighted the effectiveness of the quality improvement initiative in reducing discharge delays and improving overall hospital efficiency. The study emphasizes the importance of continuous quality improvement efforts to address discharge delays and enhance the quality of patient care.

According to Kim, Park, and Lee's (2018), this study examines the impact of clinical pathways on in-patient discharge delays through a comparative study. The study investigates how the implementation of clinical pathways affects discharge delays and identifies potential benefits in terms of reducing delays and improving hospital efficiency. The findings suggest that clinical pathways can positively impact discharge delays, leading to more timely patient discharges and potentially improving overall hospital performance. The study contributes to the understanding of effective strategies for managing in-patient discharge delays and optimizing hospital operations.

more than 100 minutes for this process. On 89 Observations, the summary is created after the process of send for billing started.

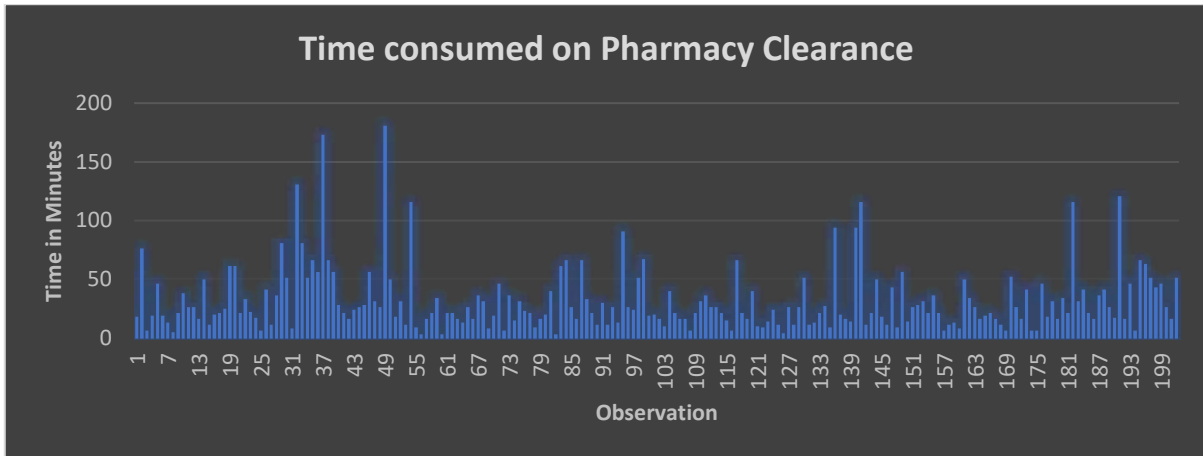


Chart 4.2: Time consumed on Pharmacy Clearance

Interpretation:

From the Chart 4.2, we came to know that, out of the total observations, only 7 observations took more than 100

minutes for the Pharmacy Clearance and 29 observations took more than 50 minutes, and 85.6% of the observations took less than 50 minutes for this process.

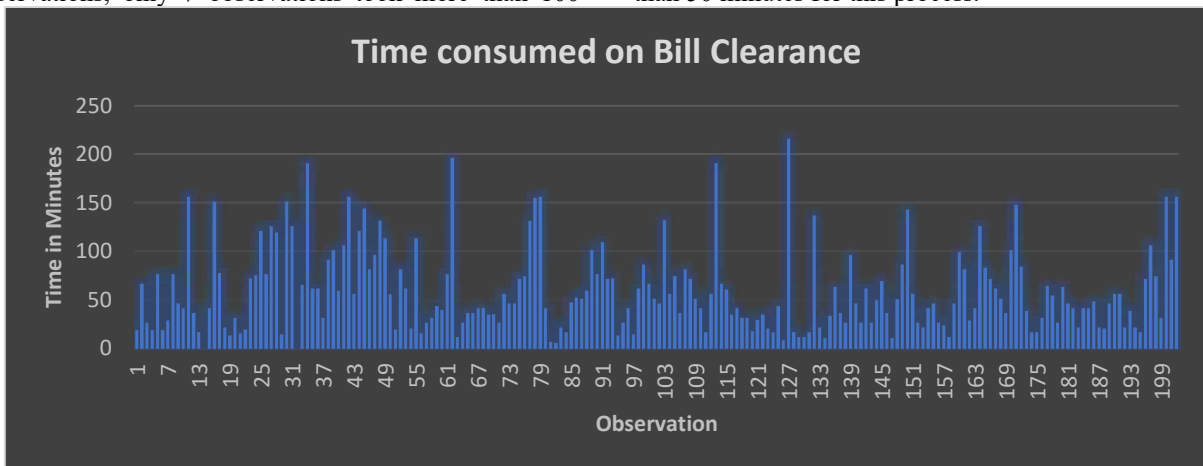


Chart 4.3: Time consumed on Bill Clearance

Interpretation:

From the Chart 4.3, we came to know that, out of the total observations, 85.14% of the observations consumed more

than 100 minutes for the Clearance of Bill, and very few observations took more than 150 minutes for this process.

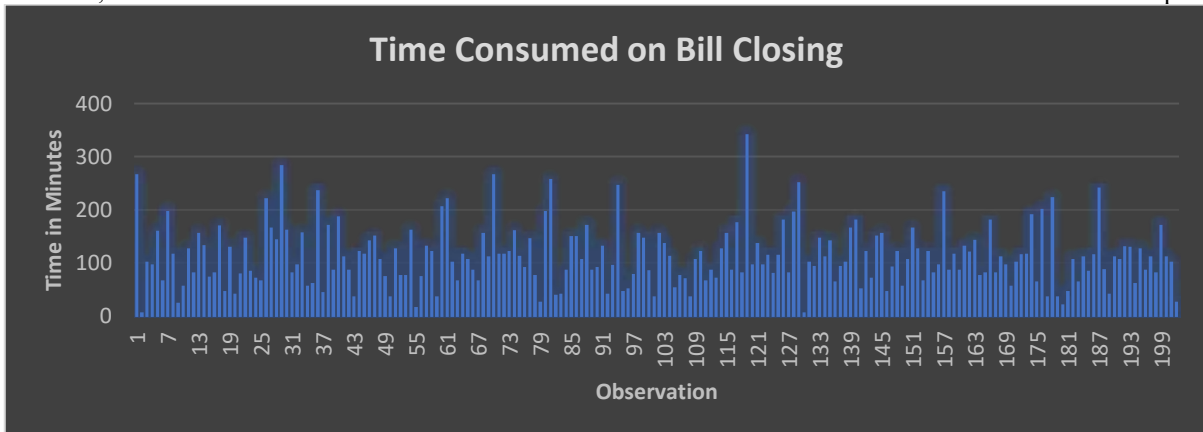


Chart 4.4: Time Consumed on Bill Closing

Interpretation:

From the Chart 4.4, we came to know that, out of total observations, 93% of the observations consumed less than 200

minutes for this process and less than 8 observations took less than 40 minutes.

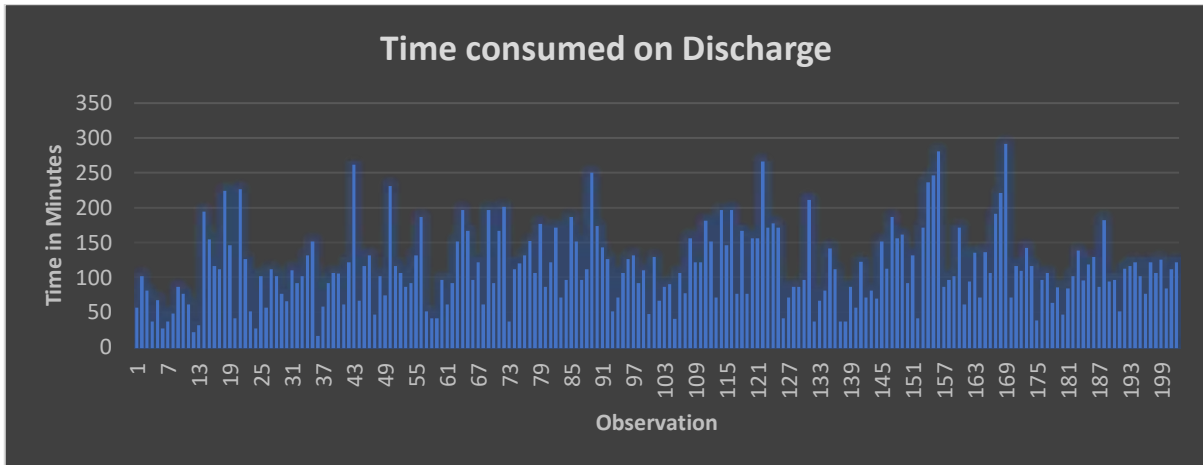


Chart 4.5: Time consumed on Discharge

Interpretation: From the Chart 4.5, we came to know that, out of total observations, 79.2% of observations took more than 150 minutes for discharge from the time of closing the bill.

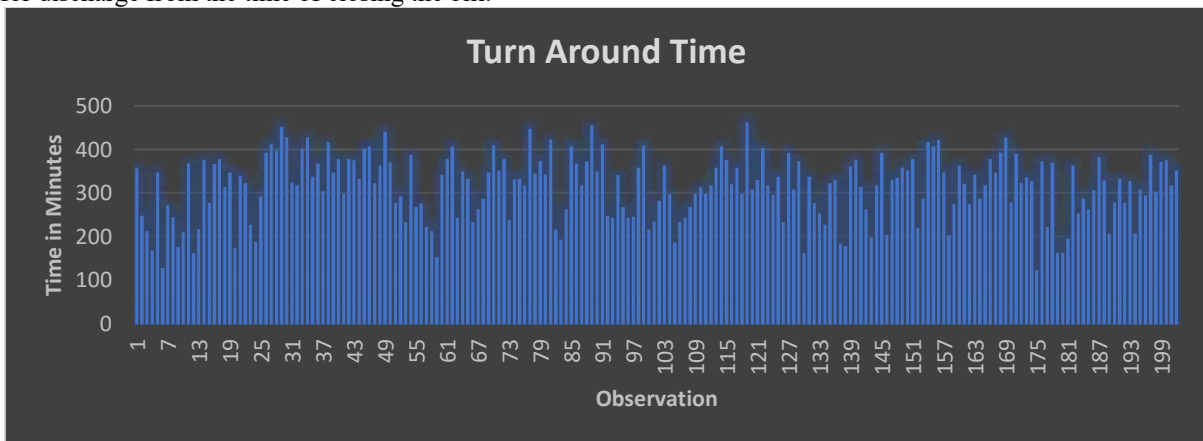


Chart 4.6: Turn Around Time

Interpretation: From the Chart 4.6, we came to know that, the standard Turn Around Time (TAT) is 5 hours (300 Minutes), and out of total observations, 40.59% of the observation’s TAT is less than 300 minutes and 59.4% of the observations are exceeding the standard TAT.

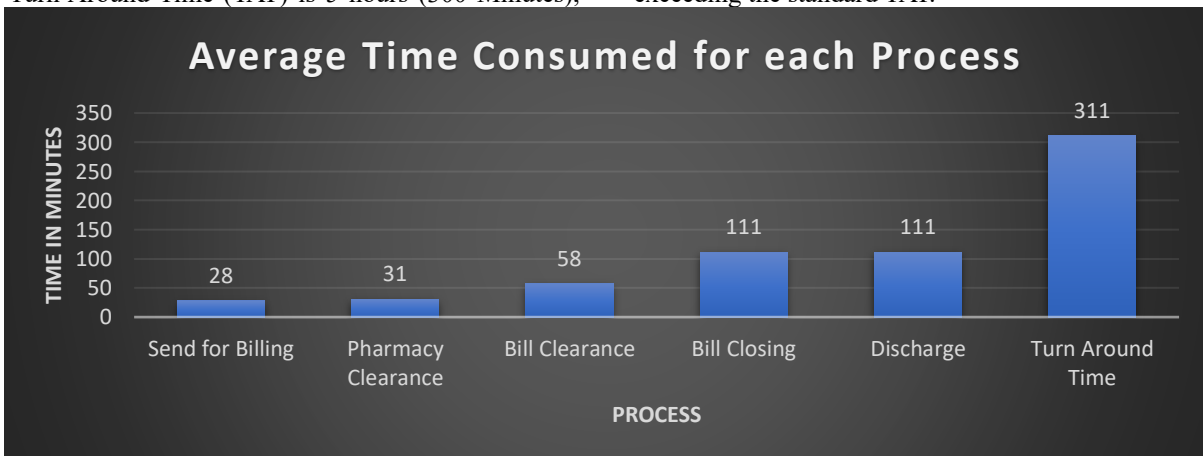


Chart 4.7: Average Time Consumed for each Process

Interpretation:

From the Chart 4.7, we came to know that,

- Average time taken for the process of Send for billing is 28 minutes.
- Average time taken for the process of Pharmacy Clearance is 31 minutes.
- Average time taken for the process of Bill clearance is 58 minutes.
- Average time taken for the process of Bill Closure is 111 minutes (1 hr 51 minutes).
- Average time taken for the process of Discharge is 111 minutes (1 hr 51 minutes).



- Average time taken for the process of Turn Around Time is 311 minutes (5 hrs 11 minutes).

5. SUGGESTIONS

- Summary should be prepared earlier especially in the case of Insurance patients to proceed to the further process seamlessly.
- From the above analysis, we came to know that time taken for send for billing process is too long because there is no proper indication for the completion of summary so that the further process is delayed. The new indicator for completion of summary should be added, which will reduce the delay in the proceedings.
- To avoid the discharge cancellations, the discharge process can be started after the cross consultation is done by the advice of the doctor, instead of going for Cross consultation after the start of discharge process.
- Almost 14.35% of observations took more than 50 minutes for Pharmacy Clearance because of the inefficiency in handling the coordinators, if done faster, then further proceedings would be done in ease.

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6. CONCLUSION

This study also recommend certain steps in order to reduce the delay in Insurance patients. From the above analysis, this study concludes that by using the technology and other communication devices, we could be able to increase the efficiency in the communication gap and also, we can reduce the time gap in each process. This study also suggested some points for the improvement, if it is done, then the operational efficiency in discharging the patients will be done faster.

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STUDYING OUR CULTURAL HERITAGE IN GEOGRAPHY LESSONS

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ABSTRACT

In geography lessons, the importance of studying our national-cultural heritage, preservation of historical objects, scientific heritage of our ancestors in geography lessons is highlighted.

KEY WORDS : *historical monuments, history of our ancestors, scientific and cultural heritage, our values.*

**"In great history, nothing goes without a trace.
It is in the blood of peoples, it is historical
memorized and practical
it is manifested in deeds."**

Sh. Mirziyoev

President Sh. Mirziyov's decisions "On approval of the concept of further development of national culture in the Republic of Uzbekistan", "On measures to fundamentally improve activities in the field of protection of tangible cultural heritage objects", "On measures to improve the activities of the Ministry of Culture of the Republic of Uzbekistan" and "On measures of the sphere of culture and art " The Decree on measures to further increase its role and influence in the life of the society" undoubtedly stimulated new achievements, changes and reforms in the field of culture.

The main task of this concept is to improve the normative and legal framework, preserve the historical and cultural heritage, inculcate national and universal values in the minds of young people, preserve ethnic cultural traditions, widely introduce modern information and communication technologies in the field of culture, mutually effective international cooperation in the field of culture. organization and development of relations, viewing national culture as a structural and integral part of world culture, ensuring the full functioning of cultural and art institutions, further strengthening their material and technical base, establishing public control over the preservation of cultural heritage objects.

If we look at our history and past, in the sacred book of Zoroastrians - "Avesta" and in the works of our great ancestors - Abu Nasr Farabi, Abu Rayhan Beruni, Al-Khorazmi, Abu Ali Ibn Sina, Alisher Nawai, in the hadiths of Imam Al-Bukhari, At-Tirmidhi, In the teachings of Amir Temur, the issue of family and national values occupied the main place in the development of high moral qualities in a person. It is known that the Uzbek family preserves the centuries-old spiritual

values and traditions of our nation, customs and traditions, spiritual-educational, cultural heritage. The culture of behavior characteristic of the Uzbek nation formed in the family, feelings related to manners, such as kindness, kindness, concern and honor, not only serve the task of education, but also play an important role in the manifestation of human values and qualities, in the formation of a perfect person. Peace and mutual love of parents in the family, worldview, spiritual level, interest, faith, position in the society, good manners affect the child's education in a certain sense. Children brought up in such a family are passionate about beauty, mentally fresh, full-hearted, curious about life, ready to live a calm, peaceful family life. In the East, instilling national values into the minds and hearts of children begins with the family. For example, young people hear advice from adults: don't spit in water, don't put anything on bread, bread is worth bread, don't cross the path of elders, don't double-talk your parents, respect your teacher, don't be indifferent to your surroundings, and learn various stories, proverbs and wisdom. listen and keep in their memories and grow up. Young people are our future, they are the successors of the work of our parents and ancestors. Our main goal is to educate a perfect person based on national and spiritual values. When we say a perfect person, first of all, we understand people who have a broad worldview, are patriotic, can think independently, are an example to others with their behavior, are responsible and healthy. Man becomes perfect only through education. His spiritual level also depends on how he perceives the events happening around him and is able to evaluate them independently. Therefore, it is appropriate to use our rich spiritual heritage of national values in strengthening the spiritual outlook of young people in the educational system and neighborhood. Including thinking about the idea of "Good thought - good word - good deed" in "Avesta" ; It serves to form the concepts of spiritual purity and faith in the minds of young people through the spiritual and educational teachings given in holy sources such as the Holy Qur'an and Hadith. In today's debate process, instilling a sense of respect and love for the past in order to capture the hearts and minds of young



people is one of the urgent issues. Especially in geography lessons, it is necessary to inculcate our national and cultural heritage in the minds of our students and to teach the heritage and cultural monuments left by our great ancestors and teach them ways to preserve them.

On the territory of our republic, 4 architectural complexes - historical centers in the cities of Khiva, Bukhara, Samarkand and Shahrissabz - are included in the list of World Cultural Heritage under UNESCO.

We can learn information about teaching our cultural heritage to students and preserving them in the 8th grade economic-social geography lessons. In this course, it is emphasized that 1,200 of the more than 2,700 historical objects left by our ancestors have been preserved.

While studying our cultural heritage, it is necessary to read the works and scientific heritage of our ancestors in geography lessons. For example, works of Al-Khorazmi, Beruni, Ibn Sina, Mahmud Kashgari, Al-Farghani, scientific and cultural heritage.

The scientific legacy of Abu Rayhan Beruni includes 150 works, which are related to mathematics, astronomy, geography, mineralogy, history, ethnography, philology and philosophy. As a scientist investigating natural phenomena, he contributed to the expansion of the concept of numbers, the theory of cubic equations, spherical trigonometry, and compiled a trigonometric table. He knew Arabic, Persian, Greek, Syriac and Sanskrit languages and developed the rules of natural-scientific terminologies for translation from one language to another.

In his work "India", which was completed in 1030, he gave detailed information about the way of life, culture and science of Indians, and described their religious and philosophical systems. Al-Biruni used the comparative method in his works: "I present the theory of existence of the Indians, and at the same time I also present the theory of the Greeks in order to illuminate the interdependence of these two peoples," he writes. At the same time, he also mentioned Homer, Plato, Aristotle, Galen and other Greek scholars, compared Hindu and Islamic thought, especially Sufism, and said that it was very close to Hindu theories of Sankhi and Yoga. Comparing the traditions of different peoples, he mentioned the lifestyle traditions of Slavs, Tibetans, Khazars, Turks and other peoples.

Al Beruni's system of transcription based on Arabic graphics was in many ways a step ahead of the modern system of translating Hindi words into Urdu.

The great mathematician, astronomer and geographer Muhammad al-Khorazmi lived and worked at the end of the 8th century and the first half of the 9th century. During this period, Central Asia was part of the Arab Caliphate. The socio-economic requirements of the developing system became one of the main factors of the development process in this period. It was necessary to develop sciences such as astronomy, geodesy, and geometry for the further development of construction,

trade, crafts, agriculture and other fields. The advanced scientists of that time had a clear idea about the practical importance of these sciences, and Muhammad al-Khwarazmi was the leader and leader of these scientists.

Khorezm made a great contribution to world science. He became the founder of algebra. The word "algebra" itself is taken from his treatise "Al-kitab al-mukhtasar fi lishb al-jabr wa al-muqabala". His treatise on arithmetic, based on Indian numerals, led to the spread of the decimal positional counting system we use today and operations in this system in Europe. And the name of the scientist "al-Khorazmi" in the form of "algorithm" has been established forever in science. His work on geography laid the foundation for the creation of dozens of geographical works in Arabic. Khorezmi's "Zij" showed the way of development of astronomy both in Europe and in Eastern countries. Unfortunately, almost no information about the life of such a figure, who founded several branches of science, was the greatest mathematician of his time and, if we take into account all the conditions, one of the greatest of all times, has been preserved.

Khorezmi was born and grew up in Khorezm. In the literature, 783 is accepted as the year of his birth. It can be said that he got his initial education and knowledge in various fields from many teachers in his country, in the cities of Central Asia. In the sources, the names al-Majusi and al-Qutrubbuli are added to Khorezmi's name.

It is known that al-Ma'mun was the deputy of the caliph Harun al-Rashid in Marw from 809, then he became the caliph from 813, and in 819 he moved to Baghdad. When Al-Ma'mun was in Marw, he attracted Khorezmi and other scholars from Mowarounahr and Khurasan to his court. Many books were brought from Byzantium and India, and the scope of "Bayt ul-Hikma" was somewhat expanded, two large observatories were built under it: the first in 828 in al-Shammosiya neighborhood of Baghdad, and the second in 831 on Mount Kasiyun near Damascus. Both observatories are managed by scientists from Central Asia and Khorasan. Khorezmi, as the director of this scientific center, monitors its activities. Among the Central Asian scientists who came to Baghdad, the name of the famous astronomer Ahmad ibn Kasir al-Farghani should be mentioned. Yahya ibn Abu Mansur of Marw became the founder and head of the observatory in al-Shammosiya neighborhood of Baghdad. He used to report on the work at the observatory to Khorezmi, the head of "Bayt ul-Hikma". After the death of Yahya in 831, Khorezmi managed this observatory and actively participated in the observations there. The astronomical work "Zij al-mumtahan" ("Tried zij") written by Yahya is known. Khalid ibn Abdumalik al-Marwarrudi directs the observatory on Mount Kasiyun near Damascus. It would be a mistake to say that all the scholars who worked with Khorezmi in Baghdad, in "Bait ul-Hikma", later known as "Ma'mun Academy", were Central Asian or Khorasan. Scholars from Syria, Iraq and other lands of the caliphate also worked there. However, Central Asians occupy a significant place among them. Khorezmi lived and worked in such a scientific environment and died in Baghdad in 850.



Only 10 of the more than 20 works by Khorezmi have reached us. These are "Kichkacha Kitab about al-jabr wa al-muqabala calculus" - an algebraic work, "Book about Indian calculus" or "Book about addition and subtraction" - an arithmetical work, "Kitab surat-ul-arz" - a work related to geography. "Zij", "Book on working with Asturlob", "Book on making Asturlob", "On determining azimuth using Asturlob", "Kitab ar-ruhoma", "Kitab at-tarikh", "Treatise on determining the Jewish calendar and holidays". Four of these works have been preserved in Arabic, one in Farghani's work, two in Latin translation, and the remaining three have not yet been discovered.

It is not known when Khorezmi's arithmetic treatise was written. However, the scientist remembers his algebraic treatise. So, it is clear from this that Khorezmi wrote the arithmetic treatise after the algebraic treatise. This treatise was translated into Latin in Spain in the twelfth century. The only manuscript of the translation, copied in the 14th century, is kept in the Cambridge University Library. The treatise begins with the phrase "Dixit Algorizmi", that is, "Al-Khwarizmi said." He says: "...I have written a "Brief Book on Al-Jabr and Al-Muqabala Calculation" which includes simple and complex problems of arithmetic, because of the distribution of inheritance, the making of wills, the distribution of property, and in matters of justice, trade and it is necessary for men in all transactions, and also in land surveying, canals, geometry, and other such miscellaneous works.' Khorezmi's biggest astronomical work is his "Zij". The scientist wrote this work around 830. "Zij" consists of 37 chapters and 116 tables. The first five chapters of the work are devoted to chronology, and the rules for transferring the dates of the "flood", "Iskandar", "Safar" eras and the Christian era to the Hijri era are presented.

Khorezm's "Zij" was one of the first astronomical works of the caliphate. As soon as the work was written, it attracted the attention of scientists. Farghani, al-Hashimi and others, among Khorezmi's contemporaries, gave him high praise. Abu Rayhan Beruni devoted three works to commenting on this "Zij". In the history of science, the copy copied by the Spanish Arab astronomer Maslama al-Majriti in 1007 is noteworthy. This copy was translated into Latin in Spain in 1126 by Adelard Bath.

Khorezm's "Zij" is now available in this Latin translation. Based on four manuscript copies of this translation, in 1914 X. Zuter published the Latin critical text of "Zij", based on this text by O. Neugubauer published its English translation in 1962. On the basis of these two publications, full Russian and partial Uzbek translations of "Zij" were prepared for publication. Khorezmi's "Zij" was also associated with great discoveries in the field of geography. The exact year of Khorezm's geographical work is not known. Academician V. V. Barthold determined that this work was written between 836-847. The work has come down to us in the only Arabic copy copied in 1037, which is kept in the library of the University of Strasbourg. Khorezmi's work "Kitab surat-ul-arz" has been studied by many scholars. But the work has not yet been fully translated into any modern language. In 1983, on the occasion of the scientist's

1200th anniversary, we published the Uzbek translation of this work as part of Khorezmi's "Selected Works". Khorezmi's works mentioned above show that he was the founder of a number of branches of science. His ideas led to the rise and development of mathematics and astronomy.

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A STUDY ON CUSTOMER SATISFACTION ON HELMET MOUNT CAMERA WITH REFERENCE TO COIMBATORE CITY

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ABSTRACT

Helmet Mount Cameras is a micro video camera that is attached to any device that allowsto visually record from their sight of view while keeping their hands free. While technologies keep rising in the field of adventure these cameras were invented to get a first-person perspective of the action that adds a new dimension to the videos. By this technology information is projected into the user's eyes and can be used to help them navigate , view maps.

1.1 INTRODUCTION

A helmet camera also called a mount camera are used to capture the road in front of you. Like a car's dashboard camera, motorcycle helmet cameras may continuously record your ride to lower the risk of collision and hold everyone responsible if one does occur. On June 28, 1986 a Canon CI-10 camera was mounted to the side of Dick Garcia's helmet by Aerial Video Systems (AVS) of Burbank, CA at the Nissan USGP 500 World Championship at Carlsbad Raceway in Carlsbad for commercial purpose. For the first time, images were transmitted live from this camera by AVS via portable microwave to the ABC broadcast truck, then integrated into their live broadcast. This innovative system showed viewers the rider's Point of View of the race as it unfolded.

1.2 STATEMENT OF THE PROBLEM

In today's world of rapidly changing technology, customer taste and preferences are also characteristics by fast changes. To meet this changing environment a firm has to be constantly innovative and understand the latest customer needs and wants. The scope of this study lies on researching helmet mount cameras that are an adventurous yet challenging gadget for riders and finding their advantages and disadvantages.

1.3 OBJECTIVES OF THE STUDY

- To study the socio-economic factors of the respondents.
- To find the awareness of Helmet mount camera
- To examine the factors influencing purchase of Helmetmount camera
- To find out the satisfaction towards Helmet mount camera

1.4. SCOPE OF THE STUDY

In today's world of rapidly changing technology, customer taste and preferences are also characteristics by fast changes. To meet

this changing environment a firm has to be constantly innovative and understand the latest customer needs and wants. The scope of this study lies on researching helmet mount cameras that are an adventurous yet challenging gadget for riders and finding their advantages and disadvantages.

1.5 RESEARCH METHODOLOGY

Research methodology is a way of explaining how a researcher intends to carry their research. It's a logical, systematic plan to resolve a research problem. A methodology details a researcher's approach to the research to ensure reliable, valid results that address their aims and objectives.

RESEARCH DESIGN

The research design used for this study is descriptive in nature. The information is collected from the individuals and analysed with the help of different statistical tools, for describing the relationship between various types of variables, pertaining to different investment options.

SAMPLING DESIGN

Sampling design is to clearly define the set of objectives, technically called the universe to be studied. The universe can be finite or infinite. The nature of the universe studied for this survey is finite. Under the Simple Random Sampling of 70 respondents are taken. Simple random sampling is also known as probability sampling, under this sampling every item of this universe have inclusion in the sample the results arrived from this is assured in terms of probability i.e. we can measure the errors of estimation from a random sample

SAMPLE SIZE

The sample size selected for the survey is 70.

SAMPLING TECHNIQUE

A sample plan is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure, the



researcher would adopt in selecting items for the sample. After deciding the research approach and instrument, the next stage is to design a sampling plan. The selected respondent from the total population constitutes what is technically called a “Sample” and the selection process is called “Sampling technique”. The sampling plan calls for the following decisions such as –

1. Population
2. Sampling frame
3. Sampling unit
4. Sample size

SAMPLING FRAME

A sample frame is a means of representing the elements of the population.

AREA OF STUDY

The study has been undertaken only in Coimbatore city.

TOOLS USED

- Simple percentage method
- wighted Average Ranking Method

PERIOD OF STUDY

The study has been conducted for a period of three months from January 2023 to March2023.

LIMITATION OF THE STUDY

This study is applicable for the Helmet mount camera only.

- This study is done limited so in future there may be slight variation due to change in
- Customer mind set.
- As Judgmental sampling technique has been used it has its own limitation.
- This study is an academic effort hence it has its own limitation like cost, time and
- geographical area.
- The primary data and information were used in the study based on the information.
- supplied by the respondents.

REVIEW OF LITERATURE

Dr Philip S Martin (2022) : All helmet and camera combinations investigated by this project complied with current legislative performance criteria, while no combination exceeded published injury thresholds. No increase in head injury risk was observed for the forces transferred to the head during falling object strikes or with the linear accelerations experienced during falls onto flat and angled surfaces.

Martin P.S (2021): All helmet and camera combinations investigated by this project complied with current legislative performance criteria, while no combination exceeded published injury thresholds. Further research may be required to establish the effects of additional impact mechanism, helmet or camera mounting configurations.

Chao (2022): Helmet display system is a device used in fighter aircrafts to provide situational awareness, scene enhancement images and other information to a pilot. Eye gaze direction-based helmet display system is innovatively introduced to realize the spatial combination of head posture and eye gaze direction.

Kevin Huang (2022): How-to videos are often shot using camera angles that may not be optimal for learning motor tasks, with a prevalent use of third-person perspective. We present immersive POV, an approach to film how-to videos from an immersive first-person perspective using a head mounted 360° action camera.

VA Marchman (2022): Head-mounted cameras have been used in developmental psychology research for more than a decade to provide a rich and comprehensive view of what infants see during their everyday experiences.

M Asif (2022): An intelligent transportation system (ITS) is an advanced application that supports multiple transport and traffic management modes. ITS services include calling for emergency rescue and monitoring traffic laws with the help of roadside units.



ANALYSIS AND RESULT PERCENTAGE ANALYSIS

Table 1: Demographic Variable of the Respondents

Factors	Options	No. of Respondents	Percentage (%)
Gender-Specific	Male	60	86%
	Female	10	14%
Length of Life	18-25	40	57%
	26-35	11	16%
	36-45	10	14%
	Above 45	9	13%
Line of Work	Student	11	16%
	UG	35	49%
	PG	10	14%
	Others	14	21%
Annual Annuity	₹1,00,000- ₹1,50,000	7	11%
	₹1,50,001- ₹2,00,000	25	36%
	₹2,00,001- ₹3,00,000	13	18%
	More than ₹3,00,001	25	36%
of Members of Family	2-3	46	39%
	3-4	38	61%
No of Earning Members of Family	2-3	54	50%
	3-4	26	50%

Table 2: Respondents Behaviour Towards Various features of the Camera

Factors	Options	No. of Respondents	Percentage(%)
Duration of Usage	Less than 6 months	43	61%
	Between 6-12 months	13	19%
	More than 12 months	14	30%
Source of Awareness	Advertisements	29	41%
	Fellow workers	19	27%
	Relatives	13	19%
Motivation Factor	Friend	9	13%
	Best Quality	37	53%
	Best Service	8	11%
	Low Cost	8	11%
Place of Purchase	Warrantee and Guarantee	17	24%
	Retail Outlet	36	52%
	Brand Showrooms	17	24%
Improvement Needed	Online Purchases	17	24%
	Clarity	27	39%
	Quality	33	47%
	Battery Life	10	14%
Frequency of Usage	Daily Monthly	35	65%
	Occasionally	25	35%
Mode of Purchase	Cash	24	34%
	Cheque	17	24%
	Debit Card	16	23%
	Credit Card	13	19%



Table 3: Respondents behaviour towards various features of the Camera

Factors	Options	No. of Respondents	Percentage(%)
Satisfactory Level with Price	Highly Satisfied	12	17%
	Satisfied	12	17%
	Not Satisfied	46	67%
Satisfactory Level with Quality	Highly Satisfied	20	29%
	Satisfied	20	29%
	Not Satisfied	29	42%
Level of Satisfaction with Services	Highly Satisfied	22	30%
	Satisfied	22	30%
	Not Satisfied	27	38%
Satisfactory Level with Purchases	Highly Satisfied	29%	42%
	Satisfied	29%	42%
	Not Satisfied	11%	16%
Satisfactory Level with Varieties	Highly Satisfied	25%	36%
	Satisfied	25%	36%
	Not Satisfied	19%	27%
Satisfactory Level of Discounts	Highly Satisfied	28%	38%
	Satisfied	28%	38%
	Not Satisfied	16%	23%
Satisfactory Level with Advertisement and Promotion	Highly Satisfied	28%	40%
	Satisfied	28%	40%
	Not Satisfied	14%	20%

Table 1 shows that most 57% of the respondents are coming under the age group of 18-25 years 86% of the respondents are male.49% of the respondents have completed UG. 29% of the respondents occupation are professionals.39% of the respondents have 3 family members. 50% of the respondents said number of earning members in their family is two members. 36% of the respondents having an income level Rs.3,00,001 and above 43% of the respondents are using Gopro video camera

Table 2 shows that Most (61%) of the respondents use the camera for less than 6 months, 13% use it between 6 to 12 months and 30% use it for more than 12 months. 41% of the respondents were aware of the camera through advertisements while 27% got it know it from fellow workers ,19% from relatives and 13% from friends. 53% of the motivation factor was best quality , 11% for best service , 11% for low cost and the rest 24% for warrantee and guarantee. 52% of the respondents purchased it from retail outlets , 24% from brand showrooms and 17% through online. 39% of the respondents conveyed that improvements were needed on clarity. 47% in quality and 14% in battery life. 65% of the respondents have a frequency of usage from daily to monthly and 35% of them use occasionally. 34% of the respondents purchased the camera by cash , 24% through cheque, 23%

through debit card and 19% through credit card.

Table 3 shows that 17% of the respondents were satisfied with the price , 17% satisfied and 67% were not satisfied. 29% of the respondents were highly satisfied with the quality, 29% were satisfied and 42% were not satisfied. 30% of the respondents were highly satisfied with the services of the camera and 30% were satisfied and 38% were not satisfied. 42% of the respondents were highly satisfied with purchases, 42% were satisfied and 16% not satisfied. 36% of the respondents were highly satisfied with varieties and 36% satisfied and 27% not satisfied. 38% of the respondents were highly satisfied , 38% satisfied and 23% not satisfied. 40% of the respondents were highly satisfied with advertisement and promotion, 40% satisfied and 20% not satisfied.

Ranking Analysis SUMMARY OF FINDINGS

- 57% of the respondents are coming under the age group of 18-25 years.
- 86% of the respondents are male.
- 49% of the respondents have been completed UG
- 29% of the respondents are professionals.
- 39% of the respondents have 3 family members.



- 50% of the respondents said number of earning members in their family is twomembers.
- 36% of the respondents having an income level Rs.3,00,001 and above.
- 43% of the respondents are using Gopro video camera.
- 61% of the respondents are using mount camera less than 6 months.
- 41% of the respondents said they aware about helmet mount camera throughadvertisement
- 61% of the respondents are using mount camera less than 6 months.
- 41% of the respondents said they aware about helmet mount camera throughadvertisement
- 53% of the respondents are motivated to purchase helmet mount camera because of bestquality
- 52% of the respondents said they have purchase helmet mount camera through outlet.
- 47% of the respondents' said quality has to improve in helmet mount camera
- 34% of the respondent's mode of purchase is cash.
- 49% of the respondents says discounts increases the sale more.
- 49% of the respondents said they have used helmet mount camera daily.
- 51% of the respondents said their purpose of purchased helmet mount camera forVlogging.
- 40% of the respondents said battery problem want to solve with helmount camera.
- 41% of the respondents are dissatisfied with price of helmet mount camera.
- 29% of the respondents are highly satisfied about quality of helmet mount camera.
- 37% of the respondents are highly satisfied about services of helmet mount camera.
- 50% of the respondents are highly satisfied about packaging of helmet mount camera.
- 41% of the respondents are satisfied about varieties of helmet mount camera.
- 43% of the respondents are satisfied about discount of helmet mount camera.
- 49% of the respondents are satisfied about advertisement and promotion of helmetmount camera

SUGGESTIONS

- Designing marketing programmes that help to link the brand by making them.perceive special benefits of sony that they cannot find in others.
- The company shall make the brand visible to public through digitalcommunications.
- The company should make the public aware the heritage of the company.
- Developing new endorsers and new marketing movement helps demonstrate.elegant and classic in

brand image.

- The other one is that Company should display products features and advantages sufficiently and observably to users and provide convenient purchasing method anddistribution channel for them

CONCLUSION

This study reveals that the overviews about the products manufactured by the Helmet cameras are satisfactory. The customer attitude towards the purchase decisions are influenced more by the way of trust worthy, service, price and quality. It is an attempt to study the helmet camera and its awareness and preference towards the camera is being surveyed to make this study complete. As a result, it has been observed from the respondent that the camera are qualitative and pricing is reasonable and affordable. But the customer also expressed the need of improvement in packing. It is an idea of bringing a social change in the economy exclusively for the middle-class community.

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PRATISHYAYAVAT AYURVEDIC MANAGEMENT OF VATAJA KARNASHOOLA – A CASE REPORT

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ABSTRACT

Vataja karnashoola is one of the karna rogas mentioned in Ayurveda. In various texts the number of karna rogas vary. As per Charakaacharya^[1], these are of 4 types. Acharya Sushruta^[2] said 28 types whereas 25 types are told by Acharya Vagbhata^[3]. Karnashoola is explained in detail along with their causes by both; Sushrutaacharya and Vagbhataacharya. As per the critical analysis of the text, it can be a disease itself, and also can be a symptom or lakshana of some other diseases. Based on all this, it can be related to otalgia. As per Vagbhataacharya, 5 types of karnashoola are there and one of the types is vataja karnashoola. Otolgia or pain in the ear, can be a consequence of ear disease (primary otalgia), or it may arise from any pathology of structures other than the ear (secondary otalgia).^[4] In this current study, a 51 years old male patient of vataja karnashoola was treated on Ayurvedic line of treatment given in pratishyaya (common cold) along with follow-up medication for a total duration of 15 days. There was significant improvement in the case and he was advised the aahara-vihara to be followed thereafter.

KEYWORDS: ear, karna, otalgia, karnashoola, karnaroga

INTRODUCTION

Shalaky Tantra deals with Urdhva-jatrugata Vikaras which means disorders of Supra-clavicular region. This includes diseases of eye, ENT and head & scalp.

As per Ayurveda there are 5 gyanendriyas (sense organs). One of these is Shravanendriya (sense of hearing) which resides in karna (ear). Shravanendriya is made up of panchmahabhutas, but predominantly Aakash mahabhuta is associated to it^[5]. The vitiation of doshas in Karna Pradesh results in various karna rogas mentioned by Acharyas.

One of the karna rogas (ear disorders) mentioned in Ayurveda is karnashoola. The word 'Karnashoola' is made of two words; karna and shoola, which means Shoola or pain in karnapradesha. It can be taken as a separate disease entity and also can be a lakshana mentioned in purvarupa and rupa avastha of other karnarogas. Similarly, it's modern correlation i.e otalgia can be a disease itself or it may also be a feature of other diseases. Acharya Vagbhata has further subdivided karnashoola into five types of which one is vataja karna roga. Acharyas have

mentioned various nidanas (causes) for the same. Some of these are pratishyaya, jala-kreeda etc. Pratishyaya is a nasaroga yet, its mentioned as one of the nidana for karnashoola.

CASE REPORT

A 51 years old male patient who was a local shopkeeper, came to the OPD with complaints of severe pain in left ear and mildly reduced hearing - from a duration of one week. On taking detailed history, he informed that he was apparently well about 12 days back before coming to the OPD when he started having nasal blockage and running nose on waking up in the morning. These symptoms were mild for 2 days initially, in the morning hours only and were not bothering the patient. After that, the symptoms worsened for the next 3 days and subsided thereafter. Next morning after that he noted that after entry of some soapy water into the left ear and also blowing his nose while bathing, he started having sudden pain in his left ear which was irregular and of pulsating type in nature. By evening of the same day, there was severe pain in left ear. When the pain was persistent, he visited the OPD for management of his condition and in sought of relief from the pain.



MATERIALS AND METHOD

LOCAL EXAMINATION –

On otoscopic examination the left ear canal, the skin was moist and mildly congested near TM. The tympanic membrane was

retracted and congested with a small tympano-sclerotic patch. On valsalva maneuver, no movement of tympanic membrane was there. Also cone of light reflex was absent. On examination of right ear and ear canal, all structures were absolutely normal.

Ear examination	Right ear	Left ear
Auricular	Normal	Normal
Para-auricular	Normal	Normal
EAC	Normal	Moist and mildly congested skin near TM
TM	Normal	Retracted, congested, small sclerotic TM, Cone of light absent

Hearing tests were done the results of which were as follows –

1. **Rinne's test** – BC > AC in left ear
2. **Weber's test** – lateralised towards left (very mildly)
3. **Audiometry** – mild conductive hearing loss in left ear (upto 15 db), right ear hearing WNL

UTTAMANGA PAREEKSHA

Karna – aardra twak, manda ruja, alpa shravana-karma

Mukha – prakrita

Jihwa – alpa sama

Netra – prakrita

Nasa – ardra nasa

(Para nasal sinuses – non-tender)

SAMPRAPATI GHATAKA-

1. *Dosha – vata, kapha*
2. *Dushya – rasa*
3. *Agni – dhatwagni*
4. *Srotas – shabdavaha, pranavaha*
5. *Srotodushiti – sangha, vimarga-gamana*
6. *Utpatti-adhishthana – shiro pradasha*
7. *Vyakti-adhishthana – karna*

DIFFERENTIAL DIAGNOSIS –

S. No	Diseases	Shoola	Srava	Other symptoms
1	<i>Vatika karnashoola</i>	✓	✓ <i>alpa, lasika-vata</i>	<i>Chirapaka, akasamaata shunyam, sheeta aniccha</i>
2	<i>Pittaja karnashoola</i>	✓	✓ <i>peeta-lasika srava, paka at site of contact</i>	<i>Tapa, daha, sheetaiccha</i>
3	<i>Kaphaja karnashoola</i>	✓	✓ <i>ghana, accha(white) srava</i>	<i>Shira-hanu-greevagaurav, mandaruja, kandu, ushnecha</i>
4	<i>Raktaja karnashoola</i>	✓	✓ <i>peeta-lasika or raktavarni srava</i>	<i>Tapa, daha, sheetaiccha</i>
5	<i>Sannipataja karnashoola</i>	✓	✓ <i>sita-asita rakta ghana pooya</i>	<i>Shotha, jwara, teevra-peeda, ushnasheeta iccha</i>
6	<i>Karna-sraava</i>	✓	✓ <i>pooya srava</i>	<i>Nidana- shiroghata, jalamajjana, vidradhipaka</i>
7	<i>Karna-vidradhi</i>	✓	✓ <i>rakta-peeta srava</i>	<i>Nidana- shiroghata, kshata</i>
8	<i>Karnapaka</i>	✓	✓ <i>karna-kinna, alpa srava</i>	<i>Sthanika kotha</i>
9	<i>Pootikarna</i>	+/-	✓ <i>ghana, durgandhita srava</i>	

As the main feature was pain in the ear and moist ear probably with some discharge from the skin of ear canal, differential diagnosis was made based on this feature along with other symptoms.

1. Source of disease –

Entry of soapy water in left ear canal probably caused some irritation of the skin. Also, blowing nose during bathing can also be a cause of pain (it might have caused further movement of retracted TM which could have been due to previous history of cold 2-3 days before the onset of earache)

2. Onset - sudden
3. Intensity – mild
4. Nature of pain – sharp tearing, pulsating type
5. Frequency – on and off, irregular
6. Duration – since past 7 days
7. Aggravating factors – cold exposure
8. Relieving factors – hot *patta*(cloth) *sweda*
9. Site – *karna*(left)

The probable *nidana* involved could have been *pratishyaya*(prior to the onset of earache) and *jala-pravesha* in *karna* while bathing. The differential diagnosis made was as follows based on which final diagnosis thus made was of *vataja karnashoola*.



After taking history, examination and diagnosis, the patient was advised to undergo *sthanika chikitsa* along with oral medication. The oral medication and *sthanika chikitsa* was broadly

pratishyaya-vat chikitsa, based on the line of treatment mentioned by *Acharyas*. Patient was also advised to avoid head bath. This was as follows –

Oral Medications			
S. No.	Medicines (14 days)	Dose	Anupana and instructions
1.	<i>Sarivadi Vati</i>	1 tab BD	With lukewarm water after food
2.	<i>Triphala Guggulu</i>	1 tab BD	With lukewarm water after food
3.	<i>Vyoshadi Vati</i>	1 tab BD	With lukewarm water before food
4.	<i>Haridrakhanda</i> (2g)+ <i>Sitopaladi ch</i> (1.5g)+ <i>talisadi ch</i> (1.5g)+ 1 pinch <i>Pippali ch</i>	1 tsp BD	Half hour before food with honey
Local Procedures			
S. No.	Procedure	Medicine used	Duration
1.	<i>Karnapramarjana</i>	Dry aural moping was done to wipe off the discharge	SOS or before the local procedure
2.	<i>Karnadhupana</i>	<i>Haridradi Dhooma</i>	~10 mins, all 7 days
3.	<i>Shirovirechana</i>	<i>Shadbindu Taila</i>	6-6 drops, all 7 days
4.	<i>Gandusha dharana</i>	<i>Triphaladi Kashaya</i>	Mouthful, all 7 days

OBSERVATIONS

The patient was given oral medication along with local therapeutic procedures. In oral medicine, he was advised to take *sarivadi vati* and *triphala guggulu* along with *vyoshaadi vati* and a powder combination of *haridrakhanda*, *sitopaladi churna*, *talisadi churna* and *pippali churna* for 14 days. Local therapeutic procedures done were *karna pramarjana* followed by *karnadhupana*, *shirovirechana* and *gandusha-dharana* for a total duration of 7 days. Within a week of starting the treatment, the symptoms were reduced. Oral medication was yet continued for the second week also; so as to prevent any further recurrence. Also, the patient was advised to avoid head bath and exposure to cold and windy weather.

DISCUSSION

The local therapeutic treatment given for a week included *karna-pramarjana*, *Karna-dhupana*, *shiro-virechana* and *gandusha-dharna*. The patient was examined daily for any discharge in his left ear and after *pramarjana*; *karna-dhupana* was done with *haridraadi dhuma*. This had anti-microbial effect and helped to reduce and dry up the discharge. *Shiro-virechana* was done with *shudbindu taila* 6-6 drops in each nostril followed by *triphalaadi gandusha*. Apart from its anti-microbial action, it mainly helped to remove the blockage of eustachian tube, thus, removing the negative pressure and TM retraction and hence resolving the earache or *karnashoola*.

Sarivadi vati is a formulation explained in *Bhaishjya Ratnavali*. It is said to be used in *Karnaroga* (Ear disease) and other disorders. *Vataja karnashoola* is a *Vata* dominant *Roga*. The contents of *Sarivadi Vati* are predominantly *Vata-Kapha*

Shamaka, work on vitiated *Vata* and *Kapha Dosha*.^[6] So it was advised to be taken for 14 days.

Triphala guggulu is directly indicated in *Shotha chikitsa* (Inflammation). In *shotha*, not only *Guggulu* (*Commiphora wightii* Arnott Bhandari) but also *Triphala* (*Terminalia chebula* Retz., *Terminalia bellerica* Gaertn. Roxb. and *Emblica officinalis* Gaertn.) and *Pippali* (*Piper longum* Linn.) contribute to its anti-inflammatory action. Also, all its constituents exhibit a notable potent anti-microbial activity making it an ideal drug of choice in inflammatory and infectious diseases.^[7] Also *triphala* is *Kashaya rasa pradhana* and is helpful in the *shoshana* of *srava*. As the probable *nidana* was considered to be *pratishyaya* and there was probably mild mucosalization of the eustachian tube and middle ear cavity because of which the TM was retracted. Because of its anti-inflammatory and anti-microbial activity *Triphala guggulu* was advised to the patient.

In the *chikitsa sutra* of *karnashoola*, *pratishyaya-vata chikitsa* is advised as it is considered to be one of the *nidanas*. *Vyoshadi vati* is well known for the management of *pratishyaya*. Most of its ingredients are *ushna guna pradhana dravyas* and it may prove helpful in the management of *shula* along with prevention of recurrence of *Pratishyaya*. The powder combination of *haridrakhanda*, *sitopaladi churna*, *talisadi churna* and *pippali churna* was given for the same.

All these medications were continued for 2 weeks even though the symptoms were relieved after 1st week so as to prevent any recurrence.



CONCLUSION

Otalgia or *vataja karnashoola* is a common condition and can be frequently found in cases of *Pratishyaya* or in case of entry of any foreign particle or object in ear canal. Only after proper examination of the case and condition, treatment should be advised. According to the case study, as previous history of *Pratishyaya* was there, so *Pratishyayavat shodhana* and *shamana chikitsa* was advised and proved to be effective in the management of *vataja karnashoola*.

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ORGANIZATIONAL PEDAGOGICAL CONDITIONS OF SCHOOL EDUCATION SYSTEM

(At the End of the 20th Century in Karakalpakstan)

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ABSTRACT

The article examines the pedagogical practices of preschool educational institutions in Karakalpakstan during the early 20th century. It investigates the principles, growth of the preschool education system, and primary approaches implemented in the field.

KEY WORDS: *preschool education, children, numbers, collections, objects, traditions.*

INTRODUCTION

The works of Al-Khorazmi, Ibn Sina, Al-Farabi, Abu Raykhan Beruni, who have inherited the wisdom of the ancient world and carefully studied the experience of the past generations and contemporaries, have a rich scientific and spiritual heritage that served our nation faithfully. The development of the peoples of the East over the centuries. In their works, the methodology of teaching the growing generation, which corresponds to the laws of general knowledge and is based on a certain system of principles, is revealed for us. The great Ibn Sina, for example, believed that the basis of teaching methods should be based on the logical thinking of students, personal observations and experience. And this wise advice has been repeatedly confirmed by practice. The study showed that the success of children's acquisition of knowledge is largely determined not only by the teacher's ability to choose the right form of work organization, but also by the methods and methods of influencing children. In preschool educational institutions of Karakalpakstan, the teacher shows, calculates, assumes, educates. The curriculum included both educational and educational aspects: teaching and learning, formation of cognitive and mental abilities in children [4]. The peculiarity of preschool education is that the presentation of new knowledge continued in the form of a game, which activated the activity of children.

Due to the increased attention to the issues of preparing children for school, the role of the game form of education has decreased significantly, which was especially evident in the older and preparatory groups, which created the necessary conditions for the transfer of styles and methods of school, education of preschool children, and this, of course, violated the interests of children. Game activity has been moved to the background. Lessons were evaluated according to a certain

structure, which was not allowed to be violated. The structure was as follows:

- organization of time;
- explaining the purpose of the lesson. Communicate knowledge and interest children in the content of the lesson;
- organization of independent practical activities of children;
- analysis of children's activities, quality of assignments in accordance with the didactic purpose [5, 7].

LITERATURE REVIEW

Therefore, if the method is the activity method of the teacher and the child, the method - the structural unit of the method - is the specific intellectual or practical action of the teacher or the child. According to A.I. Vasileva's definition, the method is the didactic "cage" of the method. For example, the method of observation can be fully implemented using the method of showing, asking questions (actions of the teacher) and active distraction, palpation (actions of the child) [10].

According to teachers, the system of traditional methods - excellent, oral, practical - is suitable for the characteristics of preschool children. In the 1970s, special attention was paid to the development of children's mental abilities in the process of learning. In this regard, the question arose about the use of such methods that help to develop independent thinking and critical thinking.

Each type of learning content is associated with a certain method of mastering it. For example, to acquire knowledge about the surrounding world, first of all, sight, hearing and tactile perception are necessary, therefore, it is appropriate to use visual and practical methods together. To understand the material, as a rule, conversations, stories, that is, oral methods are used. The prize is the detail. Receiving does not have an independent task, but is subordinate to the task



performed by this method [11]. For example, in order to create a vivid impression of autumn events in children, the teacher, in addition to observing the event, also uses the technique of reciting poetry, which serves to create a vivid impression in children, that is, to leave a special impression. Therefore, the same techniques can be used in different ways. For example, in the process of drawing autumn events (practical method), it is possible to create a vivid image in children from a poem, but not for the purpose of memorization.

In the practice of Khodzeli kindergartens, methods that activate children's mental activity are often used. Educators set the children the task of remembering and repeating (speech, drawing, dancing) the acquired knowledge. Such training is reduced to the accumulation of knowledge, but does not help to develop mental abilities. With this formula of education, children will listen, remember, and reproduce. However, they cannot always use the acquired knowledge in new situations, which prevents the development of children's self-confidence and creative activity, that is, the training was conducted without taking into account the psychology of preschool children, there was no connection between them.

METHODOLOGY

Researchers G. Nazhimov, M. Utebergenova, N.S. Baribinalar (kindergarten 1 in Nukus) proved that in the example of teaching mathematics to children, if the teacher sets children to mark numbers, sets, objects in height, such examples will not only train the child's mind, but also, awakened his need for knowledge, the desire to apply them in practice, and formed such important qualities as independence, criticality, and ingenuity.

At the end of the 20th century, practical teaching methods were introduced in kindergartens, and now they are given a lot of time in the educational process [12]. Practical methods include exercises, games and play techniques. In each lesson, educators set a practical task for the children, and the children themselves must solve it based on the knowledge they have acquired using visual and verbal methods. As children's experience increases, the proportion of practical methods increases dramatically. Among the practical methods, an important place in educational work with children of preschool age is occupied by exercises that help them to form certain skills. The nature of the exercises depends on the specific content of the training. Thus, in order to develop mathematical images, children in the classroom are engaged in measuring, dividing whole numbers into parts, changing geometric shapes, calculating, constructing and solving simple problems.

In speech development classes, exercises are performed to develop the correct pronunciation of sounds, form word forms, create stories, descriptions, and memorize poetic texts. In physical education and music classes - mastering of movements, exercises for improving motor skills, and other activities are carried out [12]. However, practice shows that the training method is effective if, during the exercise, children learn to compare and correct the result with the given one. It helps to develop self-control in children, which is important in the formation of elements of educational activities. The ones that are varied will do well if they are accessible to children in

terms of size and level of difficulty. A task that is too difficult reduces children's interest and instills a sense of self-doubt.

The transition of the continuous education system to the state standards (1992-1994) required the updating of teaching and upbringing methods, including the content of forms of preschool children [17]. This is related to the need to develop their freedom of thought and creative activity in expressing their feelings of reaction to the surrounding reality. The success of solving the set tasks depends to a large extent on the correct choice of the leadership style in the pedagogical process, the forms of reorganization of work with children to ensure the opportunity to develop their individual characteristics.

DISCUSSION

In recent years, the study of the work situation in preschool educational institutions of the Republic of Karakalpakstan has made it possible to identify various forms of organization of work with children, independence, imagination, fantasy and creative activity, which has created favorable opportunities for increasing their intellectual and speech activity, developing cognitive interests.

The introduction of elements of fun and competition is a good incentive for the formation of the motivation to teach communication culture in children, and it gives strength to mastering the program material by all children, taking into account their psychological and individual characteristics [3].

The uniqueness of non-traditional forms of working with preschool children is manifested in a comprehensive approach to solving children's upbringing and development education, in the use of various means of teaching different types of art, in the integration of various sections of the program, which in turn allows creating the necessary conditions for systematization, and the knowledge acquired by children leads to the formation of ideas and concepts about the world around them. Popular television programs of organizing work with children in the practice of preschool educational institutions in Karakalpakstan – “QVZ” games, “Field of Miracles”, “What? Where? When?”, “Lucky chance”, as well as role-playing and theatrical games, contests of young singers, dancers, painters, sculptors, mathematicians, athletes [5].

The pedagogical value of such activities is that children develop a holistic idea of seasonal events, labor and artistic activities of people. These activities will help children realize that each season is beautiful in its own way. At the same time, they show a selective attitude towards a certain time of the year.

Based on the recommendations of the researcher G. Jumashva, we tried to summarize the experience of pedagogical teams that successfully conducted theatrical games. The following games related to the plot and life of Karakalpak people are of great interest: “The Birthday of Doll Gulzar”, “Welcoming Guests” (Teachers of Kindergarten No. 12 Tsetsura.G.A. and Rakhmatova.R.M.), “Workshop of good deeds” (Kindergarten No. 16), “Home in Askar Agha” (kindergarten 40), where special attention was paid to instilling in children the rules of etiquette in receiving guests, addressing each other, greeting each other, expressing all good wishes in life.



CONCLUSION

Therefore, the children had to observe folk customs and traditions (when inviting to the table, conducting conversations at the table). All this, a lot of preparatory work was carried out so that preschool children not only acquire knowledge and actions according to the algorithm of adults, but also form with them clear ideas about folk customs and traditions and their importance in people's lives. Thus, these forms will soon become traditional. However, their further development and introduction into the practice of all preschool educational institutions requires in-depth research to determine their pedagogical reserves.

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AN EFFECT ON HOLISTIC LEARNING DUE TO EDUCATION STRATIFICATION AT PRIMARY AND SECONDARY EDUCATION: A REVIEW

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ABSTRACT

India is a country that excels in both cohesion and variety. There are a number of states in India, each of which is home to a distinct population, culture, language, and set of religious practises. Before or after independence, a great number of Indians were unaware of the need of education. They were either forced into job or company that was based on their caste, or they continued to work for a wage each day. They were obliged to work in the occupation associated with their caste. In this way, people living in rural areas and metropolitan areas are uninformed, and their knowledge of the necessity of education varies greatly from one another. Caste, poverty, caste-based professions, or the absence of teachers at schools are only some of the social factors that can have an impact on a person's educational opportunities, which is what the concept of "education stratification" refers to.

In order to perform this thorough assessment, substantial research was carried out by examining several sources of primary material and reading a variety of different papers. According to the findings of the study, the concept of educational stratification is merely a fancy word, and there should be equal access to education for all students. Because of educational stratification, I discovered a variety of elements that have an effect on schooling.

KEY WORDS: *Education stratification, Effects on education, necessity of education.*

1. INTRODUCTION

India is a country that excels in both cohesion and variety. There are a number of states in India, each of which is home to a distinct population, culture, language, and set of religious practices. Before or after independence, a great number of Indians were unaware of the need of education. They were either forced into job or company that was based on their caste, or they continued to work for a wage each day. They were obliged to work in the occupation associated with their caste. In this way, people living in rural areas and metropolitan areas are uninformed, and their knowledge of the necessity of education varies greatly from one another. Caste, poverty, caste-based professions, or the absence of teachers at schools are only some of the social factors that can have an impact on a person's educational opportunities, which is what the concept of "education stratification" refers to. In developing nations, where public resources are limited, education must compete with other essential requirements such as healthcare or infrastructure. As a result, acquiring adequate public resources is a significant obstacle to overcome. In India, a significant portion of the funds allocated for education come from the respective state governments, which results in a great deal of pressure being placed on the state funds. Aside from the fact that education funding needs to be analyzed and effective measures implemented, it is also essential to have an understanding that successful learning outcomes are dependent, to a significant extent, on enabling environments such as those found in schools, homes, workplaces, and other places. This is true even though education funding needs to be analyzed and effective measures implemented. The development of cognitive skills can take place in a classroom setting, but in many cases,

children also pick up these abilities from their families, friends, and the society in which they are immersed, among other sources. However, the benefits of obtaining a quality education can vary greatly from one circumstance to the next. There is a vast gap in educational standards across the various states and between the many sorts of schools that exist within each state. It is widely acknowledged that for growth to be inclusive, access to excellent education needs to be expanded. This is necessary to ensure that the benefits of development, which include productive work, higher salaries, and improved standards of living, are accessible to all segments of society. Although secondary education and its expansion have become more important in India since the implementation of the Eleventh Five Year Plan, efforts to improve the education's overall quality have not kept pace with these developments. Although a significant amount of research has been carried out in other parts of the world to investigate methods by which the standard of secondary education can be raised, academics in India have not paid a great deal of attention to this field as of yet. As a result, there is an urgent requirement to carry out a substantial amount of research work in this field, work that can investigate these problems and make suggestions for policy. This paper is an attempt to address this vacuum and provide insights into the quality difficulties that are plaguing India's primary & secondary education system.

This research is distinctive in that it examines the problems facing primary and secondary education in India from both a quantitative and a qualitative point of view. With the help of this study, an effort has been made to clarify the meaning of the term "Education stratification," as well as its roots and the many different models and techniques that have been used up to this



point. In addition to this, it will also provide a comprehensive discussion on the literature that is available all over the world, as well as what has been accomplished in India up to this point. Not only does this work talk about quality principles.

2) OBJECTIVES

To review on the education system both primary and secondary education, to understand why schools divided on basis of different education stratifications, to know what factors are effecting parents to send a child to different types of schools.

3) METHOD

systematic literature review and narrative search. The articles from 2016 to 2022 were pulled from our first search of studies published in PubMed, Sage publications, and other online resources for the analysis of education stratification.

4) FINDINGS

According to NUEPA (2014), there is a growing concern regarding the quality of education that the education system in India is able to give. This concern is centered on the Indian context. The inequality that exists on a number of different levels is proving to be malignant for the nation. According to the Education for Free website, according to the Education for All (EFA) 2014 report, one of the most significant obstacles that the Indian education system must overcome is the presence of quality-related problems at each stage of education, which results in an inadequate level of student learning. The occurrence of low academic accomplishment among students is illustrative of the quality-related shortcomings of the current educational system. The results of a number of studies indicate that children do not have the cognitive and linguistic skills necessary to be ready for school. This indicates that the curriculum is of poor quality, that there are flaws in the teaching and learning process, and that there are not enough qualified teachers. If children's primary education is lacking when they enter school, there is a risk that the benefits they receive from subsequent educational interventions will be diminished. For this reason, it is critical that appropriate educational interventions be developed and put into practice in order to eliminate quality-related deficiencies in elementary and secondary education. It is clear that there is a significant disparity between quality pupils and quality educational institutions. Children who come from low-income homes are unable to gain access to schools of the same caliber as those attended by pupils from more affluent backgrounds, who make up a significant portion of the student population at prestigious educational institutions. It is essential to have a firm grasp on the idea that all students should have access to the same educational resources. Every qualified student has the right to an education of the highest caliber. It is helpful to make a distinction between the procedures that lead to educational results and the educational outcomes themselves when attempting to define what constitutes quality education. Although the various educational approaches differ from one another in ideology, many of them have made attempts to analyse the idea of quality in education. epistemology, in addition to the composition of different disciplinary areas (EFA Global Monitoring Report 2005).

The Humanist approach: This method places a greater emphasis on the learning process itself as a social practice than it does on the individual's role in the process of learning itself as a result of individual involvement. Curriculum that is standardized and controlled is not acceptable. The educational curricula continue to be adaptable to the specific conditions and requirements of each learner. Both self-evaluation and peer assessment are encouraged as valuable methods for cultivating a more profound knowledge of students' academic progress. The function of the teacher is more similar to that of a facilitator than it is to that of an instructor.

The quality of the behaviorist approach: This method is seen in the fact that it endorses standardized and controlled curricula that are constructed on the basis of predetermined goals. The term "assessment" refers to an objective measuring of previously taught behavior in comparison to previously established assessment standards. Many people believe that the most important aspects of the educational process are tests and examinations. Learning is guided by the instructor, who is regarded as the subject matter expert and is in charge of determining what causes what responses.

Quality in a Critical Approach: This method is used by Sociologists and critical pedagogues have a tendency to equate good quality education with one that encourages social change; includes a curriculum and teaching methods that encourage critical analysis of social power relations and ways in which formal knowledge is produced and transmitted; and involves the active participation by learners in the design of their own learning experience. This is because good quality education prompts social change, includes a curriculum and teaching methods that encourage critical analysis of social power relations and ways in which formal knowledge is produced and transmitted.

Indigenous approach: This method reaffirms the significance of education's relation to the socio-cultural circumstances of the nation and the learner, which is a quality that may be found in indigenous approaches. They are of the opinion that all students have rich sources of past knowledge that they have acquired via a wide range of experiences, and that it is the job of educators to unearth and cultivate these sources. Learners ought to take part in the process of formulating their own educational programmer. Learning should not be confined to the four walls of a classroom and should instead take place in informal settings and continue throughout one's life.

Approach to Improving the Quality of Adult Education: In this method the adult education tradition, experience as well as critical thought on the subject of learning plays a significant role in determining quality. Learners are viewed as socially positioned individuals who have the potential to use their experiences and what they have learned as a basis for social action and social change by radical theorists.

5.CONCLUSION

In conclusion, it is possible to declare that this paper provides a conceptual perspective on the quality of education by evaluating the numerous ways in which it has been understood and addressed in various areas of the world. This can be said



since the article examines the various ways in which it has been understood and addressed in various countries. There is a significant amount of There is a lot of variety in the history of the quality notion in education, as well as in the models and techniques that have been established for it. Although the term "education Stratification " has been understood in a wide variety of ways by educators, the most applicable definition of "educational quality" would include a combination of "inputs," "processes," and "outcomes," as well as their interrelationships with one another. Despite the fact that the term "education Stratification" has been assigned multiple meanings, educators continue to view it in a wide variety of ways. Therefore, even though the learning outcomes of students are the primary criterion for determining the quality of education, the quality of the inputs and processes that are used to achieve better learning outcomes are also extremely important.

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PSYCHOLOGICAL ANALYSIS OF FOLKLORE DISCOURSE AND IT'S ETIOLOGY

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ABSTRACT

Psycholinguistics has three main theoretical sources. The first is the psychological direction in linguistics. Linguists of past centuries wrote that language has been an activity of the spirit and a reflection of the culture of the people. At the same time, they noted that language contains not only a physical, but also a mental component, and thus belongs to the individual. Being a condition of communication and regulating human activity, language limits the knowledge of the world and makes it impossible to fully understand another person.

KEY WORDS: *folklore discourse, psycholinguistic analysis, heroes, syndrome, narrator.*

One of the key theories in the history of psycholinguistics was the Sapir-Whorf hypothesis (the hypothesis of linguistic relativity). It was thanks to the active interest of B.L. Whorf in the relationship between language and thinking that this issue began to be actively raised and studied in the scientific world [1].

In the most beautiful folklore discourses, when we come across with interesting characters taken from life, we are accustomed to associate their qualities with the character traits of people we know. Psychologists also named mental states after characters and their types, inspired by examples taken from folklore discourses. All of us loved listening to folkloric texts in our childhood and listening to magical discourse, we would like them to emphasize their favorite places over and over again. Psychologists have long noticed that we unconsciously repeat the behavior of our favorite fairy-tale characters. Such behavior is so clearly described in fairy tales that they are even called "hero syndrome".

Gerda's syndrome

Girls diagnosed with Gerda's syndrome are usually intelligent, charming and modest, with an iron will and excellent leadership qualities. As angels of salvation, they extend a helping hand to loved ones and even strangers, even if the help is objectively needed or not. They choose cold-hearted and cold-hearted people who "save" for their own happiness, causing them to automatically nurture passive people. Unfortunately, happiness is naturally not achieved with a discounted pair. No one can fix girls with Gerda's syndrome but herself.

Kolobok (Johnny cake) syndrome

Although people with this syndrome have lost self-confidence, they have light features. His self-doubt requires constant self-affirmation, and for this he performs various behaviors (brags, mocks, anger someone). The emotional

relationship of partners is very important for him, he is affected by the neglect of parents in childhood, he is not used to taking responsibility for his actions, if he is faced with a serious problem situation, and they immediately correct the partner.

"Frog Princess" syndrome

Women with frog queen syndrome are beautiful, thrifty and wise women who have been instilled in their brains since childhood with the concepts that "the main thing is the spiritual world of a person", "beauty is a good opportunity and intelligence is better than that". From a young age, he is forced to engage in self-improvement in anticipation of true happiness. In addition, he strives for the key to "happiness" in his life: "I must finish school with excellent grades", "I will get an honors degree at the university", "I will buy a car", "I will buy an apartment". The frog queen's wait for a savior often lasts a lifetime.

Clever "Elsa" syndrome

Elsa's analytical ability is amazing, she lives by the motto "Being happy is also harmful, this is unhappiness." Elsa is afraid to be happy and prosperous; she does not want to enjoy success and achievements. When everything happens smoothly and safely, this situation is inconvenient for this category of people. They are very afraid of being happy and prosperous; they allow themselves to enjoy success and achievements. They live in anticipation of the dark colors of life. Instead of rejoicing in positive situations, a person lives in a sense of fear, believing that it will not end well for a moment. We usually "prepare for the worst" from the expected event, so we can organize our thoughts and turn them into good ones.

Snow White syndrome

Her problem is that for her, relations with members of the opposite sex are equal to death, men can be Snow White's



invaluable friend, brother or brother, who lovingly cares for her, supports her, they paint real men in their fantasy images as honest partners, she they hope to meet. But in fact they avoid such life encounters. Snow White usually chooses cute "gnomes" who need their care, and care for them as if they were their own children.

"Sleeping beauty" syndrome

Many girls always dreamed of a handsome prince and a wonderful castle in their childhood. Some even imagine their future in great detail, including the appearance and features of the prince, the architectural style of the castle. But, unfortunately, some young ladies are limited to creating ideal images and do not even try to realize them. They may lose all opportunities in the pursuit of "ideal" and become an old girl.

"Mermaid" syndrome

The little mermaid fairy was raised in a lack of attention and love from childhood, so this feeling is sacred to her. He will make any sacrifice without thinking about the consequences, let alone setting the terms of the relationship. According to the mermaid, love is a happiness that is paid for forever. Achieving it requires a lifelong payment of time, interest, passion, family, friends, and reputation. If necessary, he will sacrifice his life to achieve happiness. In the end, he becomes foam on the waves as a symbol of great love and destroys himself.

Although the story of the mermaid is just a fairy tale, there are many girls similar to the main character among real people. Wanting to stand out in every way in order not to lose the attention of his beloved, the young man dresses in any way he wants, and is interested in things that interest him. Often, teenage girls smoke in order to look like a "modern ideal" in the company of men, and actively use profanity and vulgar lexicon. Unlike the main character in the fairy tale of Hans Christian Andersen, they do not turn into foam, but spoil their health.

"Dyumovochka" syndrome

The fairy-tale Dyumovochka is small and petite, while real-life Dyumovochkas are physically strong and attractive. Despite the fact that their lives are full of "force majeure" circumstances, their desire to help everyone is certainly impressive. Fatalism in all childhood is mainly brought up by those who "convenient" it for themselves, Dyumovochka is very convenient to their personal needs, but completely deprived of personal rights. Therefore, although the Dyumovochkas live a comfortable life in adulthood, they are considered infantile.

The state of being infatuated with Dyumovochka does not last long, because it is difficult to please a woman who does not know what she wants. Of course, it is important that a person independently makes decisions and acts in order to put an end to Dumovochka.

"Ugly duck" syndrome

Andersen ended all the duck's misfortunes by turning him into a beautiful swan. In real life, however, his problems begin now, when he self-absorbs the concept of being a "bastard" into his mind, making himself automatically miserable. As he ages, he aspires, hopes, to become more prosperous and beautiful. If his parents are adequate, they

teach their children self-acceptance, respect for others and appreciation of life. But such parents are rare, because in the natural environment, only "ugly" ducklings are born from "ugly" ducklings, and no swans are born in this population.

"Little Red Riding Hood" syndrome

It seems that their headgear is an object that attracts different levels of danger. The roots of this syndrome come from childhood, the child takes responsibility for something that is beyond his control, although he cannot change anything, but at this point the child feels guilty. It is this feeling of guilt that attracts "punishment" in the form of strange and even terrible events that regularly repeat in his life. Little Red Riding Hoods will have to learn to forgive themselves in order not to increase the guilt.

"Puss in boots" syndrome

In real life, "cats", receiving the desired "boots" from any owner, consider themselves indebted to their owners and are ready to do everything possible and impossible for the owner's well-being. Boots (new status, opportunity and gift) make the cat happy, fill it with enthusiasm, new positive ideas and energy, which the cat returns to its ideal owner in its place. This situation continues until the boots wear out (the reward loses its value) or until the cat realizes that its owner lacks at least one of the above qualities. Usually, cats do not find a suitable owner, because they want to see the great goddess of Egypt in their owners.

"Old witch" syndrome

A special feature of the old woman is that she is accustomed to provide whatever she wants. It is in this character that people need attention and understanding, not a scary creature. His talent lies in his knowledge and experience.

"Doctor Aibolit" syndrome

This infinitely kind, sympathetic and fearless hero treats everyone in life almost the same. It is possible to have a constant pleasant conversation with him, as well as sincere secrets, so it is impossible to have a bad relationship with him. He is approachable, but does not like to talk about his feelings, thoughts and mental impulses. It must not be easy for a person who constantly helps everyone.

"Malvina" syndrome

With their impressiveness, beauty and charm, people with "Malvina" syndrome actually try to control those around them. Unlike animals, birds and insects, the human race cannot withstand this condition for a long time.

"Peter Pan Syndrome"

In psychology, he is interpreted as an infantile teenager who is attached to his mother and does not want to take responsibility for family happiness. He does not commit to anyone.

The story of Peter Pan, the boy who doesn't want to grow up, was written by James Barry, who grew up in a difficult childhood. After the death of his brother when he was young, his mother stopped paying attention to him, and in order to forget her grief, the mother called the eldest son by the name of the deceased. It is then that he realizes that he can only win the attention of his parents when he is small. Psychological problems ended with the future writer



becoming a short guy. When Barry grew up, he wrote a story about Peter Pan. It became a real hit among readers, and this in turn led the psychological community to recognize a new definition, Peter Pan syndrome. At its core, this syndrome is diagnosed in young boys who avoid responsibility.

"Elsa" syndrome

Regardless of his status and education, he always puts the interests of his family above his own interests. He takes under his patronage not only his own family members, but also young nephews, elderly aunts and uncles, sick and unfortunate ones. Everything must be arranged for him: everyone is fed, cared for, cared for and so on. This situation is the essence of Elsa's life.

"Cinderella" syndrome

She is traditionally a role model for girls, a patient character with a love of hard work who is shown as a role model. However, from a psychological point of view, the hero's behavior is not healthy. She listens to her sisters' insults in silence and does not try to reject her stepmother, rather than running away from home because of bullying, she serves them as if nothing happened. The happy ending of this story, as you know, comes not because of her efforts, but because of the prince.

"Snow Queen" syndrome

He inspires and manipulates people with his coolness and will. The power of this woman is so great that she takes away the child and causes her loved ones to forget. In psychology, there is a concept of a snow queen, and girls or women with this syndrome are deprived of parental love in childhood. Such girls are driven by cold calculation and lust for power. Despite material well-being, in reality they can be very unhappy.

Many folklore discourses are actually intended for adults, and even some texts have not been adapted for younger readers. "Little Red Riding Hood". Red hood - girls wear caps and hats to cover their hair, in many cultures it is customary for girls who have reached a certain age of puberty to hide their curly hair under a hood from outside eyes. This is because women's hair was believed to be a powerful means of attracting the opposite sex.

"Red" is the color of life and blood. The author's version of this fairy tale was first written by Charles Perot in the 17th century, and according to the culture of that time, good women and girls did not dare to wear red hats, because this color was considered a symbol of sin.

The fairy tale "Rapunzel" is marked in history by the fact that the main character, Rapunzel, was actually an undersized girl who became pregnant by a stranger, and her mother cut off her hair as a punishment.

Although the fairy tale "White Snow" was recorded by the Brothers Grimm, it was based on real events. Margarita von Faldeck was born in 1533 in the family of a count, her father died when she was 4 years old. At the age of 16, she becomes a beautiful maid of honor, meets the Spanish prince Philip II in the palace. However, Philip's father, Charles V, saw a much older woman, Maria I Tudor, as a suitable bride for his son. As a result, in 1554 Margarita died unexpectedly at the age of 24 after eating an apple dipped in arsenic, King

Charles V was behind these events. It was through the English Tudors that this tale became part of English folklore [2].

The tale of Sleeping Beauty is etymologically based on Italian legends, where a king sees a sleeping girl in the forest, touches her, and she gives birth to twin children in the clock.

In the fairy tale "Pocahontas", an 11-year-old girl is invaded by English colonists, who force Pocahontas, the daughter of an Indian tribal leader, to marry a white colonist, John Rolfe, at a very young age. He dies of torture at the age of 21 [3].

The fairy tale "Beauty and Beast" dates back to the 18th century. During the French Revolution, life was extremely difficult, with people dying at the maximum age of 36.

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THE STRUCTURE OF THE LEXICAL-SEMANTIC FIELD "CLOTHES/FASHION"

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ABSTRACT

This work presents classification according to professional recognition.

1. Examples of the most recognizable terms in the field of fashion design and fashion can be such as: model, mannequin, catwalk, show, and even a thread with a needle. These words are clear to both a professional and any native speaker.

2. There are terms that will cause difficulty in understanding. But people who are interested in fashion, albeit unprofessional for them these concepts are well known.

3. The last type of terms will be understood only by professional circles. Here is a small test of how well we know the following terms: Watteau fold, aigrette, nansuk, parasol, plastron, sarong. Probably makes it difficult to understand and does not allow us to give definitions the fact that all examples are terms of foreign origin.

INTRODUCTION

A certain layer of vocabulary, consisting of professional terms, is borrowed from other languages. Borrowing can be called an element (morpheme, word, phrase), penetrating from one language to another as a result of language contact. Throughout the world, there are practically no languages of the same composition. For example, according to scientists, the English language consists of 70% of borrowings. Borrowing is not only a word taken from another language, but the very process of transferring a word from one language to another. Borrowings may be short-lived or the process may take several years, as has happened many times in history. Borrowing can pass from one language to another directly or indirectly, that is, through a third language or other languages. For example, during the time of Peter the Great in the Uzbek language has been penetrated by a large amount of foreign vocabulary from various fields of activity. This vocabulary came directly from German into Uzbek. And such terms as *beret* (Italian word of origin), *corset* (Spanish term), came into the Uzbek language indirectly, through English or French.

In each language, large periods of borrowing can be distinguished. There are 4 periods in the Uzbek language, which are inextricably linked with the history and formation of the Uzbek state.

1. XI-XII centuries (the period of Modernism in Uzbekistan);

2. beginning of the 18th century (reforms of Peter the Great and reflection to the Uzbek lands);

3. the second half of the 18th century - the 19th century (development of industry);

4. the second half of the 20th century - the beginning of the 21st century (modern period of globalization).

It should indicate what happened in the fashion industry in the second half of the XX century. Almost all

fashion houses were located in Europe and with the outbreak of World War II either closed or moved to the United States. It was there that the designers continued to create. It was in the USA that a new mass production of clothing was opened and developed, new types of fabrics were invented (for example, *nylon*), new styles and fashion trends (*street fashion*).

The reasons for borrowing can be varied, mostly extralinguistic:

- historical and geographical interaction of languages and cultures;
- scientific and technological progress;
- differentiation of already existing and the emergence of new concepts;
- terminological insufficiency (absence of concepts in native language);
- socio-psychological reasons;
- Globalization.

For example, the term "kilt" made its way from Scottish to English language due to the geographical and cultural proximity of peoples.

The development of science and technology has allowed the term nylon to quickly spread too many developed languages of the world due to the widespread use of the material itself. The emergence of a new concept of "bikini" led to the emergence of a term that was not previously in any language in the world.

There is a language fashion - the pursuit of fashionable, prestigious words. A person receives a higher social status by using fashionable words and expressions in speech. Using fashionable vocabulary, we demonstrate not the level of education in general, but the level of awareness of the latest trends, the level of awareness.

The openness of borders, the globalization of the economy and the rapprochement of cultures contribute to fast and easy borrowing from one language to another. In post-



Soviet times, borders opened in our country, language contacts began to be observed, and various sources of information appeared.

At the present stage of the development of languages, borrowed foreign vocabulary is very quickly assimilated, that is, it "settles" in the language, adapts and can even form entire word-formation series. For example, the adjective "*designer*" is formed from the term "*design*", the noun "*designer*", complex words like "*design project*", in the specialized literature even the verb "*design*" is fixed, formed according to the template with such verbs as "*fountain*", "*initiate*", "*stimulate*".

Secondly, borrowed words are often written in Latin letters, just because of the popularity of fashionable words and the prestige of their use, (*fashion industry*, *prêt-à-porte collection*) or through a hyphen (*design studio*).

Some of the foreign terms that have emerged are, on at first glance, redundant, since they have synonyms in Uzbek. However, as a rule, they show subtle semantic differences. So, for example, not every kiosk can be called a "boutique", buying potatoes in the market can hardly be called "shopping", the definition of "glamorous" is inapplicable to a smartly dressed little girl, etc. [3, 20].

However, foreign terms in Uzbek may be used in a wide variety of ways. For example, in the city of Tashkent there is a hairdressing salon called "Beauty Boutique".

Some terms have come a long way since the appearance of a concept before fixing it in the dictionary. This happened in the 20th century with a new type of bikini swimwear. For 1946 - the moment of its creation - it was such a bold, revolutionary piece of clothing that in some Catholic countries it was forbidden to wear such a swimsuit. Moreover, in European countries, in Spain, for example, the British did not favor bikinis. As a result, the term was first recorded in the Webster dictionary only in 1970.

The processes of globalization began to manifest themselves in modern society in the 1950s, when the idea of the European Union appeared. It should be noted that globalization only initially assumed economic integration. However, today almost all spheres of human activity are involved in these processes in one way or another. The phenomena and concepts of the modern world are spreading across all countries and continents with great speed, regardless of state borders, the level of development of the economy, language and culture. For faster and more comfortable communication, languages of interethnic communication are created. But they are not created artificially, but gradually, on the basis of modern means of their distribution.

Thus, one can trace the following logical chain: the development of material culture has led to the formation of mass media, mass media use the latest technologies and cover billions of people, and information in the media is repeated many times and reaches its consumer of information in any corner of the planet. Separately, you can say about the Internet, which was launched in the early 1990s, and is now one of the fastest global information systems.

Fashion, as a social phenomenon, spreads with the same high speed. Today, the film actress appeared on the red carpet in a new image, and tomorrow it will be copied by

millions of people. With the same high speed there is an exchange of terms, borrowing from one language to another or from one language to many languages at once. Since the second half of the 20th century, the source of borrowings, the so-called "loan storehouse", has been the English language, namely its Anglo-American variant. As noted by V.M. Leichik, "the choice of the source language of borrowings is determined by real historical practice" [2: 120].

Many languages of the world not only accept borrowings in large quantities, but also actively assimilate them, i.e. adapt them to the peculiarities of their grammatical structure, pronunciation, compatibility with other lexical units. Fashion is a fairly young and developing industry. In recent decades, it is indeed one of the most global industries, and its professional terminology is international in nature, open to mutual enrichment and borrowing of new elements.

One of the requirements for translation is adequacy, that is, the translator must convey the original by equivalent means. Therefore, at first the translator is faced with the task of analyzing the term to be translated. Analysis of a term consists in looking up its meaning in a dictionary. But, given that this study deals with relatively new fashion terms, often associated with some conceptual idea or image, the translator needs to carry out a number of operations to analyze the term, analyze the context (in this study, various articles from glossy magazines and books about fashion) and special concepts. Kobozeva, for example, believes that context is very important in translation: translation, in this case, as "a way of comparing the semantic systems of languages or as a coordinate system of adequate semantic correspondences of different languages" [1:112]. In more complex cases, the translator uses synthesis - the construction of a new term that expresses the same concept as the translated term.

METHODOLOGY

There are many more difficulties with the comparative method. During lexical comparison, it can happen that when lexical units are superimposed on each other, they can coincide only in a few meanings, and not in the full range of meanings, since languages have a specific polysemy. When the semantic fields of the two lexical units, respectively, as well as discrepancies in synonymous and antonymic relationships followed by inconsistencies in the semantic compatibility of each of the words.

The comparative method is valuable for translation, as it allows you to establish a system of semantic correspondences between 2 languages.

Also, in addition to the fact that a comparative analysis reveals the common features of the objects being compared, such an analysis also helps to highlight the most characteristic specific characteristics of each of them, which often go unnoticed in intralinguistic research.

The lexico-semantic field "Dressing" is a large number of lexical units that are characterized by semantic commonality and are interconnected by systemic relations. Or in other words, the lexico-semantic field is a hierarchical structure, whose elements are interconnected by paradigmatic relationships. Moreover, the same word can be a member of different paradigms. In our study, we pay attention to such



paradigms of the field as lexical-semantic groups, thematic series and synonymic series. The sample of terms in this study includes 365 terms in the English language and 270 terms in the Uzbek language.

Having studied the definitions of the terms presented in our sample, we structured the LSF "Fashion" based on the following relationships:

1) generic relations that connect a more general concept with its particular case (for example, *clothes - skirt - mermaid skirt*);

2) relations of antonymy (*dress up - dress down (shoulder and waist clothing); men's fashion - women's fashion (women's and men's fashion)*);

3) partonymy relations (for example, *blouse - collar*);

4) relations of incompatibility (for example, *sport footwear - evening footwear*).

The core of the field we are considering is the lexical units "Fashion" in Uzbek and "Fashion" in English, which express a common invariant meaning for the entire field. To determine the identifying and differentiating semes, we carried out a component analysis of the definitions of this concept. According to dictionaries, "Fashion" has the following definitions:

-Fashion is a style that is popular at a particular time, especially in clothes, hair, make-up, etc. Fashion a way of doing things.

-Fashion is a popular or the latest style of clothing, hair, decoration, or behaviour.

-Fashion is something that is popular or thought to be good at a particular time.

-Fashion is a style of clothes, hair, etc that is popular at a particular time.

-Fashion is the business or study of making and selling clothes, shoes, etc in new and changing styles.

The presented definitions allow us to distinguish identifying LSP semes "Fashion" 'popular' and 'style', while differentiating semes will be 'clothes', 'hair', 'make-up', 'shoes', 'way', 'particular time'.

To analyze the lexemes of the Uzbek language, the definitions of the dictionaries of D.N. Ushakova (Explanatory Dictionary of the Uzbek Language) and E.N. Zakharenko (New Dictionary of Foreign Words):

Fashion is: 1. *The totality of tastes and views that prevail in a certain social environment in a certain, usually*

short time. 2. Samples of items that meet tastes (usually about clothes) [Ushakov's Explanatory Dictionary].

Fashion - domination (often short-lived), at a certain time in a certain environment of certain tastes, preferences for clothing, household items, certain cultural values, behavior; samples of clothing items that meet such tastes [Zakharenko 2003].

МОДА (лот. *modus* — меъёр, усул, қоида) — 1) турмуш ёки маданиятда муайян дид ёки қизиқишининг маълум вақтгача қарор топиши. Услубдан фарқли ўлароқ турмуш [ЎТИЛ].

The integral seme of "fashion", therefore, is 'the dominance of tastes and views', the main differentiating semes: 'in relation to clothes', 'in relation to household items', 'samples of items of clothing'.

An analysis of the definitions shows that, in a general sense, in both cultures, fashion is an indicator of the attitude in society to the elements of external culture, to style, behavior, and values. Also, the time period ('particular time', 'certain time') is important for the definition of a fashion phenomenon. Uzbek language dictionaries emphasize the fact of fast variability of fashion, as indicated by the seme of shortness. The analysis of differentiating semes allows us to consider that fashion is directly related to appearance, style, and manner of dressing.

It is difficult to argue with the fact that often when using the word "fashion" they mean exactly the clothes, the appearance of a person. In this regard, in our study, we pay special attention to terms that name specific things in the fashion industry: *clothing, accessories, shoes*. Because we believe that they are of key importance for characterizing this phenomenon.

DISCUSSION

The sample of this study includes 17 verbs in the field of the English language and 16 verbs in the Uzbek language. As a result of the analysis of definitions, it turned out to be possible to divide them into two groups: verbs related to the creation of clothing items (LSGgl-1) and verbs related to the directly external creation of a fashionable image (LSGgl-2). Here are some examples from the sample (see table 1):

Table 2.1 - LSG verbs (part of the sample)

Thematic group	Terminological means of the English language	Equivalent groups in the Uzbek language
LSGgl-1	<i>To sew – make a garment by sewing</i>	<i>Тикмоқ – 1. Игна-ип билан чоклаб уламоқ, бириктирмоқ, шу йўл билан бирор нарса тайёрламоқ; 2. Ўрнатмоқ, қадамоқ, қурмоқ.</i>
	<i>To decorate – make something look more attractive by adding extra items or images to it</i>	<i>1. Зийнат, безак бериб чиройли қилмоқ, ҳусн киргизмоқ, кўзни қувонтирадиган ҳолга келтирмоқ.</i>
LSGgl-2	<i>To dress – put on one's clothes</i>	<i>1. Кийим билан баданни ёки бирор аъзосини ёпмоқ, кийиладиган нарсани танага, танадаги аъзога ёпмоқ, қўймоқ, илмоқ. 2. Ҳадя кийими олмоқ. 3. Ўранмоқ, қопламоқ, бурканмоқ</i>
	<i>To become – look good on or suit</i>	<i>Ярашмоқ. 1. Кўриниши, қад-қомат ва шу каби жиҳатдан чиройини очадиган бўлиб турмоқ, ёқимлилиқ, қўркамлилиқ баҳис этмоқ. 2. Муносиб тушмоқ</i>

LSG of nouns and nominative phrases



Further structuring involves a description of the periphery of the field under consideration. In the near periphery of the lexico-semantic field of our study, we have identified four thematic groups: "Clothes", "Shoes" ("Footwear"), "Headwear", "Accessories". This division is based on the principle of place, expressed by the differentiating seme of each of these groups: 'body', 'feet', 'head', 'something else'. As we can see from the definitions, the unifying semes of all four groups are 'thing' and 'wear':

Clothes are things such as dresses and trousers that you wear to cover, protect, or decorate your body. [Cambridge Dictionary]

Footwear are things that people wear on their feet, such as shoes or boots. [Longman Dictionary]

Headwear are hats and other items worn on the head. [Oxford Dictionary]

Accessory is a thing which can be added to something else in order to make it more useful, versatile, or attractive. [Oxford Dictionary]

In Uzbek, we made an identical division into thematic groups, according to dictionary definitions:

Либос- кийим, уст-бош, янги либос, байрам либоси, ўраган қоплаган нарсага нисбатан рамзий маънода ишлатилади (ЎТИЛ).

Бош кийим – бош кийимларнинг умумий номи (ЎТИЛ).

Пойафзал – оёқлар учун кийим, уларни совуқдан ва пастки қисми таглиги билан ҳимоя қилади, йўлниң нотекислигини сезгир қилади (ЎТИЛ).

Аксессуар – бирор нарсага тегишли, асосий либосга ҳамроҳ бўладиган ёрдамчи деталь (ЎТИЛ).

As can be seen from the definitions, the integral seme is 'object', differentiating 'body', 'head', 'legs', 'something'. Thus, at this stage of the analysis, there were no significant differences between the fields of Uzbek and English languages.

CONCLUSION

The concept of fashion is multifunctional, as it is considered by a number of different humanities (philosophy, sociology, psychology, linguistics, economics, etc.). The fashion phenomenon began its development in parallel with the consolidation of this concept in the group of Romano-Germanic languages. In different periods of its existence, fashion was perceived differently: most scientists pointed to the negative impact of fashion on a person. During the Middle Ages, fashion was the privilege of the nobility, and they were not available to the lower classes, but representatives of the lower stratum, as the researchers write, tried to imitate the higher one. This means that for a long time fashion played the role of demonstrating wealth. In the XX century fashion has ceased to be an indicator of class differences and at the present time the fashion phenomenon is perceived in the concept of "collective choice".

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A STUDY ON CUSTOMER PREFERENCE TOWARDS ATHER ENERGY AMONG E- SCOOTERS WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

E-scooters have recently emerged as an alternative means of transportation in cities. It remains unclear whether e-scooters compete for users with bicycles – another mode of shared micro mobility. Their relationship to public transport can be complementary or substitutionary, and it has not been ascertained which effect prevails. This paper contributes to answering these questions using empirical trip-level data on Warsaw. We find that there is little difference between e-scooters' and bicycles' speed and that placement of bicycle docks influences number of e-scooter trips, which is an indication that they compete for the same market. E-scooters' trip data shows that they are more complementary to rapid public transport and may contribute to solving the last-mile problem. We discuss the importance of results for optimal policy promoting environmentally friendly transportation and identify further research directions.

KEYWORDS: E- scooter, Transportation, environmentally friendly.

1. INTRODUCTION

Nowadays, Electric scooters have become one of the best means of transportation for short trips. The electric scooter is based on a traditional manpower skateboard, plus a power kit. Current electric scooters are generally divided into two-wheel drive or single-wheel drive. The most common transmission methods are: hub motor (HUB), and belt drive. The main power source is lithium battery pack.

The electric scooter is controlled in the same way as a traditional electric bicycle. It is easy to be learned by the driver. It is equipped with a detachable and foldable seat. It is simpler than the traditional electric bicycle, small in size, light and simple, and can save a lot of social resources. In recent years, the rapid development of lithium scooters for electric batteries has given rise to new demands and trends.

2. STATEMENT OF THE PROBLEM

People all over the country prefer to travel on bikes, which gives them utility and cost-efficient mode for transport. When it comes to electric bikes are even better than normal bikes as there is no fuel consumption in electric bikes and in countries like India where their majority are of middle-class families who cannot afford high fuel prices. With many cities attempting to bring in a greener sense of living, companies have created electric scooters as a means to replace cars that run on fossil fuels. These scooters emit fewer greenhouse gases and don't run on gasoline. Because city inhabitants don't necessarily need a car to drive down a few blocks, the electric scooter could prove to be a successful means of yet more environmentally-friendly practices.

3. OBJECTIVES OF THE STUDY

- To Know the Socio-Economic factors of the Respondents.
- To Find out the awareness of customer about the Ather Energy E- scooter in Coimbatore City.
- To Analyse about the Performance of Ather Energy among the other Electric Scooters.
- To Find out the reason why customer refers to Ather energy's Electric Scooter.

4. SCOPE OF THE STUDY

This study helps in knowing how far the electric bikes are been familiar to the surroundings and how far the people in the city are using this and how familiar is they are very known about its specifications and its functions.

This again helps the unknown people that how to use the electric bikes and models, preferences to be known and its specifications too. This also helps in giving suggestions to the researchers or to the companies that what are they wanted to change in their products and how far are they want to increase its production promotion to be known by the end customer in the world and this helps in us to learn many things about the product(e-bikes).

The Scope for EVs in India with annual domestic sales surpassing 19 million in the fiscal year ended March 31, 2018 (six times the sales of cars over the same duration), India reigns as the world's biggest market for scooters and motorcycles. The next largest market is China, with annual motorcycle sales of about 17 million.



Even as most car makers resist bringing electric cars to India, the sales of electric scooters are expected to exceed 2 million a year 2030. Although electric scooters currently make up a fraction of the total, the market is growing rapidly. Reports from the Society of Manufacturers of Electric Vehicles (SMEV) reveal that in fiscal 2017-18, sales of electric bikes and scooters from a year ago doubled, while electric car sales dropped to 1,200 from 2,000 during the same time period.

5. RESEARCH METHODOLOGY

5.1 SOURCE OF DATA

• PRIMARY DATA

The primary data has been collected through questionnaires filled by 120 respondents using electric bikes.

• SECONDARY DATA

The secondary data have been chosen from various journals and websites

• RESEARCH DESIGN

The Research Design Implemented In this project is Descriptive Method.

5.2 SAMPLING DESIGN

For the present study purpose, simple convenient random sampling (non-probability sampling) has been selected. This particular survey was directed at only in Coimbatore city and customers using Ather Energy. The sampling size varies upon respondents consisting of customers who are availing Ather Energy.

5.3 AREAS COVERED AND SAMPLING TECHNIQUE

All the respondents have been chosen from Coimbatore city based on convenient random sampling.

5.4 TOOLS USED

- Simple percentage method
- Rank Analysis Method

5.5 PERIOD OF STUDY

The study has been conducted for a period of three months from January 2023 to March 2023.

6. LIMITATION OF THE STUDY

- The survey is based on the respondents chosen random from Coimbatore city. Hence the result of the study cannot be generalized.
- The sample size has been restricted to 100 respondents.
- The respondents view and opinions may hold good for the time being and may vary in future.

7. REVIEW OF LITERATURE

A. Ashok Kumar, N. Amutha Prabha (2022) As the increase of electric vehicles using, questions and problems arise regarding the infrastructure for their charging, so satisfying more charging demand at same time is expected for charging stations requires more attentions to the charging infrastructure planning. This paper presents an optimization tool for solar infrastructure charging, making it possible to obtain an optimized linear power flow with constraints of valid recharging time, daily consumption of electric vehicles, and the daily PV power production.

Goswami, R., & Tripathi, G. C. (2020): Augmentation of charging infrastructure for electric vehicles growth in India. India, one of the fastest growing economies, has been a front-runner in fulfilling its commitments towards a cleaner Earth. In this pursuit, it intends to adopt electric vehicles (EVs) to the tune of 30% by 2030. Central and state governments of India have launched several financial incentives to encourage adoption of EVs.

(Mr. A. Rakesh Kumar, 2019) Opportunities and Scope for Electric Vehicles in India: by **Janardan Prasad Kesari, Yash Sharma, Chahat Goel**, developing an aggressive strategy for the adoption of EVs in India and ensuring a well-executed implementation is a challenge but vital for government. The geography and diversity of India will present problems that require thoughtful solutions.

Shallendra Kumar, S.K. Choudry and Chethan. K.N (2018) From their study of "Commercial Viability of Electric Vehicle in India" E-Vehicle are poised to cause a major disruption in the automobile as well as the energy industry across the globe. This disruption is propelled by powerful purpose of creating a greener, safer and sustainable planet.

(Mohamed M, 2018) Electric Vehicles in India: Market Analysis with Consumer Perspective, Policies and Issues: Pritam K. Gujarathi, Varsha A. Shah, Makarand M. Lokhande, Indian Scenario is different because the current market share of EV/PHEV is around 0.1%. Presently almost all vehicles consider fossil fuel-based transportation. These pollute the atmosphere by the emission of greenhouse gases & causes global warming.

(Pretty Bhalla, 2018) Electric Vehicles for India: Overview and Challenges: by Mr. A. Rakesh Kumar, Dr. Sanjeevikumar Padmanaban, Global pollution is on the rise and each effort made, is to cut back the CO₂ emissions and save the earth. One such effort is the introduction of EVs. The transport sector is one in all the largest emitter of CO₂ and hence it's important to reduce it.



8. ANALYSIS AND RESULT

8.1 Percentage Analysis

Table 1: Demographic Variable of the Respondents

Factors	Options	No. of Respondents	Percentage (%)
Gender-Specific	Male	71	57.3%
	Female	53	42.7%
Length of Life	18	3	5.6%
	19-30	93	75%
	31-45	21	16.9%
	Above 45	3	2.4%
Line of Work	Student	31	25%
	Employee	60	50.2%
	Business	25	20.2%
	Professional works	8	6.5%
Annual Annuity	₹1,00,000- ₹3,00,000	19	15.3%
	₹3,00,000- ₹6,00,000	58	46.8%
	₹6,00,000- ₹9,00,000	36	29%
	More than ₹9,00,000	11	8.9%
Civil Status	Married	37	29.8%
	Unmarried	87	70.2%
Family Type	Nuclear Family	67	54%
	Joint Family	57	46%
Brood (No of Members in The Family)	2	2	1.6%
	3-5	82	66.1%
	5-7	38	30.6%
	More than 7	2	1.6%
Habitation (Area of Residence)	Rural	8	6.5%
	Urban	98	79%
	Hill Station	18	14.5%

Table 2: Respondents behaviour towards various features of the E- Scooter

Factors	Options	No. of Respondents	Percentage (%)
Income Generation	Parent	47	37.9%
	Self	74	59.75
	Guardian	3	2.4%
Influencer On Buying Ather Energy	Self	23	18.5%
	Friends	49	39.5%
	Parents	27	21.8%
	Advertisement/Promo	25	20.2%
Duration Of Using Ather Energy	1 Month	19	15.3%
	6 Months	70	56.5%
	12 Months	31	25%
	More Than 12 Months	4	3.2%
Ather Energy Model	Ather 450 Plus	28	22.6%
	Ather 450 X	59	47.6%
	Ather 450 X (2023)	37	29.8%
Charging Time of Ather E-Scooter	Half An Hour	5	4%
	One Hour	42	42%
	One And Half Hours	58	46.8%
	According To the Needs of Using	19	15.3%



Service Option Rendered by Ather Energy	Connectivity Plans	80	64.5%
	Service Plans	44	35.5%

Table 3: Respondents behaviour towards various features of the E- scooter

Factors	Options	No. of Respondents	Percentage (%)
Perception On Better Replaceable Option for Petrol Scooters	Yes, sometimes	98	79%
	Maybe	26	21%
	No	-	-%
Satisfactory Level on The Service of The Ather Energy	Yes, sometimes	84	67.7%
	Maybe	38	30.6%
	No	2	1.6%
Satisfactory Level On The Mileage Of Ather	Highly Satisfied	39	31.5%
	Satisfied	60	48.4%
	Neutral	24	19.4%
	Dissatisfied	-	-%
	Highly Dissatisfied	1	0.8%
Proportion Level of Electric Scooter Usage	Less Than 25%	8	6.5%
	26-50%	23	18.5%
	51-75%	62	50%
	More Than 75%	30	24.2%
	--Na--	1	0.8%
Reason For Choosing Ather Energy	Get Around Easier, faster	17	13.7%
	Best Among Others	24	19.4%
	Specifications	57	46%
	It Is Good for The Environment	23	18.5%
	Save Money	3	2.4%

Percentage analysis deals with the demographic factors, respondent's behaviour towards various features of the health drinks and advertisement. It can be inferred from the above Table 1 that a Most (57.3%) of the respondents are male respondents in gender-specific, Majority (75%) of the respondents are between the (length of life) age limit of 19-30 years. 46.8% of the respondents are from the line of work in Employee, most (58%) of the respondent's annual annuity is from ₹3,00,000 - ₹6,00,000. Most (70.2%) of the respondent's civil status is un-married. Most (54%) of the respondent's family-type is nuclear. Most (66.1% of the respondent's family members is 3-5. Majority (79%) of the respondent's Habitation (area of residence) is Urban.

Table 2 shows that Most (59.7%) of the respondents are generating to buy this E-Scooter of themselves, 39.5% of the respondents are influenced by their friends to buy this Ather E-scooter. 41.1% of the respondents would sometime prefer/suggest this Ather E- scooter to their family, friends and relatives, most (58.5%) of the respondents are using Ather

Energy (E- scooter) for 6 months, 47.8% of the respondents are using the model Ather 450 X, 33.9% of the respondents charge their E- scooter for an hour. 48.4% of the respondents are satisfied with the mileage of the Ather Energy, most (67.7) of the respondents are satisfied with the service of the Ather, most (64.5%) of the respondents are fascinated on the Connectivity plans (Ather Connect lite, Ather Connect Pro).

Table 3 shows that 46% of the respondents choose Ather for its Specifications. Most (67.7) of the respondents are satisfied with the service of the Ather. Most (58.9%) of the respondent's opinion that the electric scooter is increasing. Majority (79%) of the respondents say YES, SOMETIMES to that E- scooter is the better replacement for the petrol vehicle. Most (62.9%) of the respondents agrees to that comparable to Ather, other E-scooter companies are admiring more the customers with their specifications.



8.2 Ranking Analysis

Table 4: E- scooter company in preference to their Specifications point of view

S. No	Specifications	Score	Rank
1	SUFFECIENT BATTERY	596	I
2	MAP NAVIGATION	486	IV
3	UI	481	V
4	SUSPENSION AND OTHER PARTS IN THE E-SCOOTER	499	III
5	WHAT IS YOUR PERCEPTION TOWARDS OVERALL PERFORMANCE?	506	II

Table 4 shows that on the specification of sufficient battery, the score is 596 and ranked in first among the 4 specifications like map navigation is 486 and rank fourth, and for UI the score is ranked fifth with 481 score, suspension and other parts in the E-Scooter it has got the score of 499 and ranked third and at last for the perception towards overall performance the score is 506 and ranked second.

9. SUMMARY OF FINDINGS

- ❖ On the application of the Percentage Analysis, the following results were obtained
 - Most (57.3%) of the respondents are male respondents in gender-specific.
 - Majority (75%) of the respondents are between the (length of life) age limit of 19-30 years.
 - 46.8% of the respondents are from the line of work in Employee.
 - Most (59.7%) of the respondents are generating to buy this E-Scooter of themselves.
 - Most (58%) of the respondent's annual annuity is from ₹3,00,000 - ₹6,00,000.
 - Most (70.2%) of the respondent's civil status is un-married.
 - Most (54%) of the respondent's family-type is nuclear.
 - Most (66.1% of the respondent's family members is 3-5.
 - Majority (79%) of the respondent's Habitation (area of residence) is Urban.
 - 39.5% of the respondents are influenced by their friends to buy this Ather E-scooter.
 - 41.1% of the respondents would sometime prefer/suggest this Ather E- scooter to their family, friends and relatives.
 - Most (58.5%) of the respondents are using Ather Energy (E- scooter) for 6 months.
 - 47.8% of the respondents are using the model Ather 450 X.
 - 33.9% of the respondents charge their E- scooter for an hour.
 - Most (58.9%) of the respondent's opinion that the electric scooter is increasing.
 - 48.4% of the respondents are satisfied with the mileage of the Ather Energy.
 - Most (67.7) of the respondents are satisfied with the service of the Ather.

- Majority (79%) of the respondents say YES, SOMETIMES to that E- scooter is the better replacement for the petrol vehicle.
- Most (64.5%) of the respondents are fascinated on the Connectivity plans (Ather Connect lite, Ather Connect Pro).
- Most (50%) of the respondent's surrounding is using 51-75% of the Electric Scooter.
- 46% of the respondents choose Ather for its Specifications.
- Most (62.9%) of the respondents agrees to that comparable to Ather, other E- scooter companies are admiring more the customers with their specifications.
- ❖ On the basis of Ranking Analysis, the following result is obtained
 - Majority of the respondents gave first rank for the Complain health drinks company in ethical advertisement point of view.

10. SUGGESTIONS

The Ather Energy finally fulfils the Customer's preference and it's been clearly explained with the analysis and its interpretation and inference shows that most of the customer's perception is about bringing in the best specifications and more fascinating things into their E- Scooter and thus implementing these things into their Ideology can make more customer Eagerness in using or taking it once for their time to check and to buy it. Thus, it can make more income to the Ather Energy and thus can bring a one and only opinion on talking on the E- Scooter and This is not a clear-cut note or preference and satisfaction, but it's just a thought of the customer's opinion and this can make some changes in the Ather Energy.

11. CONCLUSION

The concept of e-bike has entered into Coimbatore in the past 4-5 years and the same is gaining momentum, as there are around 10 dealers currently for e-bike in the city. As an eco-friendly product it is more suitable for city as it can reduce the emission of harmful gases and thereby it can reduce the atmospheric pollution. Due to frequent increase in the fuel prices, the electrically charged vehicles seems to be cheapest one compared to the traditional vehicles that the rural people can charge the vehicle with the help of electricity.

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around 10 dealers currently for e-bike in the city. As an eco-friendly product it is more suitable for city as it can reduce the emission of harmful gases and thereby it can reduce the atmospheric pollution. Due to frequent increase in the fuel prices, the electrically charged vehicles seem to be the cheapest one compared to the traditional vehicles. E-bikes are more suitable for rural areas where the numbers of petrol bunks are not adequate, so that the rural people can charge the vehicle with the help of electricity.

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MEDICINAL PROPERTIES OF PROPOLIS AND ITS USE IN DENTAL DISEASES

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Propolis has been attracting human attention for a long time. The first description of it can be found in the writings of Abu Ali ibn Sino (Avicenna), who knew about the medicinal properties of the asil mummy product of the wild honey bee, widely used in folk medicine of antiquity. Professor of the Uzbek Central Institute of Traumatology and Orthopedics Shokirov O.S. in his book "Mumiy asil" characterized his role in the body. Application studies of the chemical composition of mumiye asil have shown that its basis is propolis balm [3, 6, 18].

Propolis is a sticky substance of dark green color and bitter taste, with a pleasant specific smell. The composition of propolis is a natural product of a complex chemical substance produced by bees. It consists of 85 minerals. The beneficial substances of propolis are preserved for a very long time, even after heat treatment. The composition of propolis includes: flavonoids – biologically active substances with wound healing and antimicrobial action; resins, essential oils, wax – also have antimicrobial and antiviral properties; organic acids (cinnamic, benzoic) – are able to reduce pain and kill bacteria; terpenes – carbohydrates, which are part of various essential oils, have pronounced antifungal properties; tannins or tannides – have astringent, anti-inflammatory effect, restore tissues; amino acids - the main element of the construction of animal, vegetable proteins, among them: leucine, tryptophan, cystine, methionine, arginine, histidine, tyrosine, lilyline, alanine; vitamins A, B, C, E, P – actively affect the metabolic processes in the body; minerals that make up human tissue cells: magnesium, cobalt, sodium, potassium, calcium, sulfur,

phosphorus, zinc, iron, manganese, silicon, selenium, copper, fluorine and others; essential oils [11, 20, 23].

Propolis has an incredibly wide range of therapeutic and beneficial properties. The main ones are bacteriostatic and bactericidal. It suppresses activity, and also kills a rather large range of various microorganisms, including viruses, tuberculosis bacillus, trichomonas, candidiasis, fungi, hepatitis viruses, influenza [1, 14, 32]. It is worth noting that the intestinal microflora does not suffer, and you should not be afraid of dysbiosis. Both an alcohol solution and an aqueous propolis have this property. In the 19th century, scientists revealed that almost complete sterility reigns in a healthy bee hive, which is facilitated by propolis. It inhibits the growth of viruses and prevents the re-development of viral infection [13, 26, 31]. Simultaneous administration of propolis with antibiotics enhances their effect. But there is no such effect in combination with levomycetin and penicillins. Propolis affects not only harmful microorganisms, but also phagocytosis, enhancing it. Phagocytosis is the process of removing foreign material from the body with the help of phagocytes - special cells. This contributes to less poisoning, toxification. Even the same dysbiosis can be equated with poisoning, and propolis in this case performs a wide range of tasks. It also increases immunity, the level of gamma globulins [2, 9, 15, 28].

Propolis is considered an excellent analgesic, especially in an alcoholic solution. It is used in medicine as a good local anesthetic: for stomach injuries; for the treatment of diseases of the gums, oral cavity, teeth (rinsing, applying plates); for otitis media



(to instill an aqueous, alcoholic solution); for burns, eye injuries (to instill an exclusively aqueous solution); for the treatment of frostbite, burns, wounds (to apply applications made of whole propolis or moistened napkins) [5, 25].

Anesthesia begins 5-10 minutes immediately after the application of propolis. And it can last from 45 minutes to two hours. Propolis promotes the establishment of blood clotting processes. This is of particular importance during the prevention and treatment of complications, after heart attacks and strokes, in the complex treatment and prevention of varicose veins, since in such conditions blood clotting is very often increased, which threatens many complications. Clotting also increases with age, therefore, as a preventive measure, propolis after 50 years is useful to almost everyone [3, 4, 33].

Propolis strengthens the walls of capillaries with bleeding from the gums and nose, cuts, wounds, bruises, minor abrasions. It is also able to increase the natural permeability of the skin – to enhance the skin penetration of medicines. Therefore, propolis can be safely used to enhance the effect of other therapeutic drugs. It also cures suppuration, abscesses, promotes rapid resorption. Propolis helps to reduce itching in psoriasis, after bites, burns and fungal diseases, has a dermato-plastic effect, promotes the restoration of mucous membranes that cover many organs, prevents the development of scars. It is also known about the antitumor and antioxidant properties of propolis. It takes part in limiting the tumor process, normalizing respiration processes at the cellular level, cleansing cell membranes, stabilizing the reproduction of cells in our body [3, 7, 30]. Studies of the Perm Medical Academy have established that it is possible to use an aqueous solution of propolis without interruption for five years. Propolis is also used for colitis, chronic constipation, and large doses suppress the active activity of the intestine in cases of diarrhea [2, 10].

The use of propolis in dentistry began with scientific positions in medical practice in the 60s. In dentistry, propolis has found application for dental treatment. Bee glue exhibits bactericidal and antiseptic qualities, relieves inflammation, which makes the product indispensable for combating problems in the oral cavity. Ultrasound is usually used for gingivitis and other inflammatory reactions [3, 12, 16].

Typical indications for the use of propolis-based products:

1. inflammation of the mucous layer of the oral cavity (stomatitis) or gum tissue (periodontitis);
2. deep lesion of the tissue around the tooth (periodontal disease);
3. inflammatory reaction with the formation of purulent secretions affecting the periosteum, jaw bone (periostitis);
4. installation of prostheses;
5. healing of the hole after tooth extraction, burns, help after excision of the mucous membrane [5, 34].

Propolis also helps with toothache, bleeding gums, removes plaque and deposits. Also useful are medicines from the ultrasound for the treatment of sore throats, tonsillitis, pharyngitis or laryngitis. Bee glue is often prescribed for flux (gum abscesses) [6, 29].

How propolis affects teeth and enamel. The explanation lies in the component composition of the bond. Useful components are obtained from substances extracted from the buds of trees and enzymes that insects use to process the material. The third part of the bond is beeswax, half is resin. These components help in the formation of a protective film, disinfection.

Beneficial effect:

1. healing of wounds, damage to the mucous membrane;
2. bactericidal, destructive effect on *Candida* fungi;
3. anesthesia during regular procedures;
4. elimination of irritation, signs of inflammation;
5. saturation with useful substances;
6. formation of a protective layer over the gum tissue, tooth enamel;
7. activation of regeneration processes;
8. removal and prevention of deposits, plaque.

The combination of these healing properties in one product gives bee glue a therapeutic effect in the fight against dental problems. Among the useful qualities, they note a slight lightening of the surface of the teeth, the return of a smile, a healthy appearance [1, 16, 21].

Propolis is most often used for gingivitis and other inflammatory processes. Among the direct indications for the use of propolis-based products:



- inflammation of the mucous membrane of the oral cavity or periodontal;
- serious tissue damage near the tooth – periodontal disease;
- reaction in the form of purulent inflammation, passing to the periosteum, bone tissue;
- fixation of prostheses;
- restoration of tissue after removal of the element, burn, excision of the mucosa.

To get rid of tooth pain, propolis can be used in the following forms:

- attach a small piece of the product (about the size of a pea) to the diseased tooth and leave it for a short time. The remedy in solid form can also be chewed – the medicinal components of propolis will pass into saliva and demonstrate the expected effect;
- lower a small piece of cotton wool into an alcohol tincture of propolis and attach it to the unit;
- dissolve a few drops of tincture in 200 ml of warm water and rinse the mouth. If you add a few drops of mint and sage oils here, you can get rid of the unpleasant smell.

How propolis is used for gums. To eliminate unpleasant symptoms, propolis is used for gums in the form of an alcohol-based pharmacy infusion. However, the remedy is easily prepared at home (recipe). The best time for this is the autumn months, since beekeepers collect bee glue in the summer [17, 22, 27].

When using alcohol, there is a full-fledged transition of medicinal substances to liquid. The infusion is also prepared on a water basis, but some of the elements remain in propolis, since the resins interfere with dissolution.

Methods of application of bee glue:

- Chewing. Propolis is used in its pure form or with the addition of other ingredients. It is common to make sweets from cocoa powder, honey, and ouzo. In this form, propolis helps with toothache, also strengthens enamel, relieves inflammation, prevents the formation of caries [3, 24].
- Rinsing. A therapeutic procedure for the purpose of disinfection, anesthesia and improvement of the condition of the oral mucosa. A rinse aid is used in the form of a pure tincture or with the addition of a herbal decoction of mint, sage, chamomile [18].
- Baths. The procedure is applied by mixing propolis infusion (2 teaspoons) with a glass of warm

water, keep the liquid in your mouth for 2-3 minutes. Benefits: anesthesia, cleansing of interdental spaces and pockets with gums, giving freshness to breathing [5, 19].

- Lotions. A common option is when the gum tissue is damaged or the hole is bleeding after tooth extraction. Benefits: protection from suppuration, inflammation, healing, reduction of burning, pain. It is required to wet a cotton pad with alcohol infusion, attach it to the lesion.

These methods help to deal with most dental problems. Additional application options: cauterization of ulcers on the mucous membrane with a cotton swab dipped in an infusion, and the addition of propolis solution to toothpaste to strengthen the enamel [3, 6, 25].

Propolis in combination with other components is able to whiten tooth enamel. One of the recipes includes: soda, hydrogen peroxide, lemon juice. The second remedy consists of soda, salt, diluted propolis infusion and toothpaste. All components are taken in the dose required for single use [9, 30]. At the time of therapy, you will have to give up coffee, tea, smoking. To notice the obvious effect, the procedure should be carried out daily (2-3 weeks). The bleaching compound should be used twice a day after brushing your teeth.

How to rinse with propolis tincture at home. Propolis tincture for rinsing teeth, gums is bought at a pharmacy or prepared independently. The home procedure will require compliance with the rules to obtain a healing effect and safe use [3, 7].

Instructions for rinsing: dilute 1 small spoonful of propolis tincture on alcohol in a glass of warm water (or 30 drops per 200 ml). Put the liquid in your mouth, rinse for 30-40 seconds. Spit, repeat the procedure with a new portion of the medicine. Perform rinsing for 2-4 minutes.

The number of repetitions to achieve a therapeutic effect is 3-5 times a day. It is better to perform the procedure after eating, before going to bed. This will help to remove food residues, disinfect the surfaces of the gum tissue, teeth and mucous membrane.

Water-based tinctures are used more often due to the absence of side effects. The only contraindication is an allergic reaction to ultrasound. For children and



pregnant women, only an aqueous solution is recommended. Strengthening of the therapeutic effect is obtained by diluting the remedy in a decoction of oak bark, calendula, chamomile.

Sometimes an unpleasant, putrid smell comes from the mouth, for example, with periodontal disease. Rinsing with an infusion of bee glue will help to cope with this problem. For the procedure, you will need to dilute a healing solution (a few drops) with 200 ml of mint broth. It is better to rinse in the morning and before going to bed.

Tincture of calamus and propolis helps with toothache, relieves inflammation. The root of the plant is used for treatment, since this part is saturated with fatty acids, vitamins, minerals, and other elements. Useful properties of the medicinal solution:

1. disinfection, astringent, anti-inflammatory effect;
2. healing of ulcers, wounds, mucosal damage;
3. elimination of stale breath, strengthening of tooth enamel;
4. fight against bleeding gums;
5. anesthesia, reduction of tooth sensitivity;
6. elimination of suppuration.

Indications for use of calamus products with narrow: gingivitis, periodontitis, treatment of caries, pulpitis, oral infections. Additional benefits: lightening of enamel, elimination of painful sensations, strengthening of dentin.

Preparation of tincture:

- To make a remedy from bee glue – mix 15 g of crushed ouzo with 500 ml of vodka.
- Prepare an extract from calamus – combine 100 g of crushed rhizome and half a liter of vodka.
- Place the infusion in dark bottles, put in a shaded place for 10-14 days, stirring occasionally.
- Skip through the filter.
- Before use, mix 1 teaspoon of propolis tincture and 1 tablespoon of calamus root extract.

To perform the procedure, take 2 large spoons of healing liquid and rinse for 2-3 minutes. The pain goes away after 5 days with regular use. To eliminate bitterness, it is allowed to dilute the solution with 1 tablespoon of water.

An important rule is that after rinsing, the drug must be spat out, not swallowed, due to the accumulation of pathogenic bacteria in the liquid.

Propolis tincture for the treatment of tooth cysts. A cyst usually appears between the jawbone and the root of the tooth due to infection. There is pus or cystic fluid inside the formation [3, 6, 18].

An infusion made from bee glue with alcohol is used as an adjunct to therapy because of its ability to eliminate inflammation and antibacterial action. However, natural medicine helps only in the early stages of cyst development with mandatory dental supervision.

Bee glue-based products are unable to kill the nerve. The only benefit from the use of propolis drugs is mild anesthesia. However, the tincture often has the opposite effect. When liquid gets into the dental passage, the pain only worsens. The best solution is to consult a dentist.

Contraindications and possible harm. The healthfulness of bee glue does not eliminate the presence of contraindications. The restrictions include:

1. allergic reaction;
2. diseases of the liver, gallbladder, kidneys, pancreas;
3. bronchial asthma, diathesis.

Propolis does not show harm specifically to the teeth. Possible side effects are observed with an allergic reaction (itching, redness, burning and fever). If the concentration of the tincture is exceeded, a burn of the gum or mucous membrane is likely [7, 14, 35].

Bee glue is a common remedy to combat problems in the oral cavity. Main Properties: bactericidal activity, removal of inflammation and pain. Saturation with a large amount of useful substances helps to strengthen, slightly lighten the tooth enamel, eliminate bleeding gums.

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A STUDY ON CUSTOMER SATISFACTION TOWARDS RAMRAJ COTTONS WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

This study aims to determine consumer satisfaction with Ramraj cotton with particular reference to the city of Coimbatore. Consumer satisfaction is the overall impression of consumer about the provider and the products and services delivered by the supplier. The study's objectives are to identify the attitudes and behaviours of customers who favour Ramraj cotton. Also, to examine various factors that are influencing the satisfactory level of Ramraj cotton. In addition, to research customer attitudes towards price, quality, and hospitality. A total of 140 people participated in the study. Percentage analysis, Likert scale analysis and Ranking Correlation were employed for the investigation. The current study examines customer satisfaction with ramraj cotton, with a focus on Coimbatore.

KEYWORDS: Customer Satisfaction, Quality, Price.

INTRODUCTION OF THE STUDY

The customer is always right that is why it makes smart business sense to regularly get feedback from your current clients and customers. Online consumer satisfaction surveys can accomplish this task easily and affordably. Consumer satisfaction surveys cover the core issues important to your organization. They identify areas that necessitate improvement and can enhance the effectiveness of your marketing strategies. At the same time, consumer satisfaction surveys can increase customer loyalty by showing your customers that you care about meeting their needs.

OBJECTIVES OF THE STUDY

- To study the socio-economic characteristics of respondents.
- To study the factors which influence the purchase of ramraj cotton.
- To know the preference of the customers in buying ramraj cotton
- To study the brand position and customers preference towards ramraj cotton.
- To study is all about studying the usage & attitude of the consumers
- To determine overall customer satisfaction with ramraj cotton services

LIMITATIONS OF THE STUDY

- Time taken for the study is very limited.
- Sample size is limited to 120.

- The results of the analysis made in this study in fully based on the answers given by the respondents.
- All the findings and observations related to service are purely based on respondents answer; the response may be due to personal factor

REVIEW OF LITERATURE

Anglin, (2022), enclosure is regarded as a prerequisite for success in markets subject to climatic extremes. Enclosure not only offers shoppers protection from the elements, but also the noise, traffic and odours that often characterise the shopping strip. Moreover, by creating a sheltered, pleasant environment, it can encourage shoppers to relax and enjoy the shopping experience itself.

Pashigian and Gould (2022) stated that consumers are attracted to malls because of the presence of well-known anchors – department stores with recognized names. Anchors generate mall traffic that indirectly increases the sales of lesser-known mall stores. Lesser-known stores can free ride off of the reputations of better-known stores. Mall developers internalize these externalities by offering rent subsidies to anchors and by charging rent premiums to other mall tenants.

Benedict et al. (2021) opined that because of the increasing time pressure they face, many consumers are becoming more concerned about the efficiency of their shopping patterns. Retailers have recognized this trend and have improved shopping convenience by offering greater variety in product categories and making it easier for consumers to combine visits



to multiple stores. The authors observed that the tendency of consumers to combine purchases differs from category to category and depends on category availability.

Syed Tabrez Hassan (2021) in his article " A Study of Customer Perception of Youth Towards Branded Fashion Apparels In Coimbatore City " stated that from business point of view, we must be aware about the customer needs & wants & what a consumer expects from a company. We should have this information or a customer database if we want to stay in the market and to develop a competitive edge in the market. After conducting this study, we must be able to understand what customers want from a brand, why they switch to other brand, what are the factors which force them to purchase branded apparels. By these, company can formulate the strategies as per the customer needs & deliver them the products which consumer wants from the company, which will be profitable for the company. Customer has undergone a remarkable transformation.

Lakshmi Narayana (2020) in her article " A Study on Consumer Satisfaction Towards Branded Apparels with Reference To Bangalore City. " stated that competitive and profitable in present marketplace, the apparel industry must continue to expand its capability to respond to the needs and wants of customers. Since last few years the apparel market has seen substantial change with respect to dressing design, style, usage of branded items and choice of fibres and awareness of modern trends. The Indian textile industry is a sector which has created employment in large scale and it stands next only to agriculture by providing employment to about while on the other hand a slowdown in Chinese exports will offer an opportunity to exporters to fill the void, provided they are able to measure up and match the expectations of the consumers, With this potential, India will appear as a preferred place for investment in textile and apparel sectors, both by Indian and global companies, the report

DATA ANALYSIS AND INTERPRETATION

FACTORS	OPTION	NO.OF RESPONDENTS	PERCENTAGE
GENDER	Male	70	58
	Female	50	42
AGE	Below 20	31	26
	20 - 30	49	41
	31 - 40	32	27
	Above 40	6	5
MARITAL STATUS	Married	65	54
	Unmarried	55	46
EDUCATIONAL QUALIFICATIONS	School level	18	15
	Under Graduate	55	46
	Post Graduate	20	17
	Professional	26	22
OCCUPATION	Student	13	11
	Employee	71	59
	Business	11	9
	Professional	25	21
FAMILY SIZE	Upto 2 members	61	51
	2 - 4 members	16	13
	5 - 6 members	35	29
	Above 6 members	8	7
MONTHLY INCOME	Rs.10,000 to 20,000	68	57
	Rs.20, 000 to 50,000	30	25
	Above rs.50,000	20	17
FAMILY TYPE	Nuclear	50	42
	Joint	70	58
RESIDENTIAL AREA	Installment	23	19
	Financial assistance	78	65
	Cash	20	17
SOURCE OF AWARENESS	Television	17	14
	Magazine	53	44
	Newspaper	44	37
	Friends	6	5
	The week	13	11



MAGAZINE YOU SAW ABOUT RAMRAJ COTTON FASHION WEAR	Business India	19	16
	Business Today	53	44
	Others	35	29
FREQUENCY OF PURCHASE	Once in six month	0	0
	Yearly once	17	14
	occasionally	68	57
	Rarely	35	29
DURATION OF USING RAMRAJ COTTONS	Less than 1 year	53	44
	2 - 4 years	42	35
	5 - 6 years	18	15
	More than 6 years	8	7
PREFERRED WEAR	Park Avenue	29	24
	Color plus	17	14
	Parx	44	37
	Ethnix	30	25
NO OF SHIRTS BUY AT A TIME	One	26	22
	Two	53	44
	3 to 5	23	19
	5 & More	18	15
COMPETITORS OF RAMRAJ	VAN Heusen	22	18
	Allen Solly	59	49
	Louis Philippe	11	9
	Softwood	29	24
PLACE OF PURCHASE	Online	16	13
	Showroom	53	44
	Retailer	29	24
	Local supplier	23	19
FEEL AFTER PURCHASE	Very Good	71	59
	Good	23	19
	Average	8	7
	Bad	18	15
SATISFACTION LEVEL	Highly satisfied	62	52
	Satisfied	28	23
	Neutral	18	15
	Dissatisfied	13	11
RECOMMENDATION	Yes	112	93
	No	8	7
BRAND NAME AWARENESS	Very Popular	61	51
	Popular	40	33
	Not popular	19	16

FINDINGS

- Here majority 58% of the respondents were male.
- Here mostly 41% of the respondent's age is 20 to 30 years.
- Here majority 54% of the respondents were married.
- Here mostly 46% of the respondent's education level is under graduate.
- Here majority 59% of the respondents were employees.
- Here majority 51% of the respondents have up to 2 members in their family.
- Here majority 57% of the respondents income is Rs 10,000 to 20,000.
- Here majority 58% of the respondents were from Joint family.
- Here majority 5% of the respondents say financial assistance.
- Here mostly 44% of the respondents aware through magazine.
- Here mostly 44% of the respondents saw about Ramraj Cotton in business today magazine.



- Here majority 57 % of the respondents purchase from Ramraj Cotton fashion wear occasionally.
- Here mostly 44% of the respondents purchase Ramraj Cotton fashion wear for less than 1 year.
- Here mostly 37% of the respondents prefer to buy Parx.
- Here mostly 44% of the respondents buy one shirt at a time.
- Here mostly 49% of the respondents feel that major competitor is Allen Solly.
- Here mostly 44% of the respondents purchase Ramraj Cotton fashion wear products from company showroom.
- Here majority 59% of the respondents feel very good about Ramraj Cotton fashion wear products.
- Here majority 52% of the respondents were satisfied about Ramraj Cotton fashion wear's fashion wear.
- Here majority 93% of the respondents were ready to recommending others.
- Here majority 51% of the respondents feel Ramraj Cotton brand is very popular.

SUGGESTIONS

- After conducting the survey and knowing the market, Most of the costumers are price sensitive. So if the dress price reduces, it will increase the demand in the rural areas.
- In order to increase the sales of Ramraj Cotton variety of advertisement should be introduced.
- Customer's satisfaction level of Ramraj Cotton should analyze periodic through surveys. Periodic surveys can treat customer satisfaction directly.
- Most of the customers are motivated only by friends & relatives and outdoor ads. So, advertising in print media and audio visual media can be done.
- Feedback should be taken from the consumers. So the quality and the price of the products can be changed according to the consumer's opinion. This will increase the sale of Ramraj Cotton.
- Conduct market research every year or twice in a year.
- Various sales promotion techniques are essential to increase the sales.

CONCLUSION

The study is an attempt to focus attention of the customer satisfaction towards Raymond clothes in Coimbatore city. Most of the people like and satisfied Raymond clothes due to its quality and material texture. In the present study, it is found that the cost of the Raymond clothes is high and people though like the quality of clothes without hesitating to buy only for this reason. The study concluded that by improving more designs and variety of collection will induce the people to choose this brand and it will help them to defeat the competitors. Most The people like and prefer Ramraj Cotton suiting due to its quality and its good brand image .People use Ramraj Cotton product because it has certain

image in the minds of people and they think that by wearing Ramraj Cotton product their standard of living will enhanced. By this report it can be said that most of the respondents comes to know about the Ramraj Cotton product by television advertisement and the customers of Ramraj Cotton reaming faithful to the company because the products of it provide high quality.

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A STUDY ON CONSUMER PREFERENCE AND SATISFACTION LEVEL TOWARDS HALDIRAM'S PRODUCTS WITH SPECIAL REFERENCE TO TIRUPUR CITY

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ABSTRACT

This study aims to explore the consumer preferences and satisfaction towards Haldiram's products. Haldiram's is one of the leading brands in India's snack food market, offering a variety of traditional and contemporary snack options. The study surveyed 120 respondents across different age groups, genders. The research findings revealed that the taste and quality of the products are the two most crucial factors that influence consumer preferences towards Haldiram's. Further, the packaging, price, and availability of the products were also found to be significant factors affecting consumer preferences.

KEYWORDS: *Consumer preference and satisfaction, quality, price, availability, brand loyalty.*

1. INTRODUCTION

Haldiram is an Indian Company of food. It was founded in 1937 by Ganga bishan Agarwal. It manufactures various products like snacks, sweets, beverages, frozen food and many more. In 1937, established in the form of a small retail sweet and namkeen shop in Bikaner, Rajasthan, a small but significant town in the Thar desert. Shri Shivkisan Agarwal, the founder of Haldiram's always cherished the dream of building an empire, manufacturing traditional sweets/namkeens, leaving a mark on every occasion and getting close to the heart of the common man. The company headquarter is in Nagpur, India. It is India's one of the most popular brands for snacks and sweets. Haldiram offers a wide range of sweets, Namkeens, Cookies, frozen food, Wraps and many more Indian snacks. Haldiram's competes on the basis of numerous factors including brand recognition due to distinct packaging, product quality, traditional taste and authentic Indian flavour. Haldiram is a name associated with consumers for sweets and namkeens for the past six decades in India and abroad. It made its modest start in 1941 in Bikaner in the state of Rajasthan. Today the company has diversified into snack food, sweets, syrups, biscuits and fast food. It is the leader in the namkeen segment with a 70% of the total share in the market. Haldiram's is a huge brand and has diversified into various industries. The one industry where it is the king right now is the "namkeens' industry. Hence the project mainly focuses on studying haldiram's namkeen division, though other areas have been briefly mentioned. Haldiram's after a wide range of products to its customers. The product range includes namkeens, sweets, sharbat, bakery items, dairy products, chips, papad and ice creams. However, namkeens

remain the main area of focus for the group as it contributes close to 60% of its total revenues. By specialising in the manufacturing in the namkeen market the company has created a niche market. The raw materials used to prepare namkeens are of best quality and are sourced from all over India. The food industry in India is forever changing to suit their consumer's palate, preference and pocket. All the players in the industry thus, have to constantly adapt to the ever-changing trends and invent and re-invent themselves to stay in the league.

2. OBJECTIVES OF THE STUDY

1. To understand customer awareness about haldiram's products
2. To know the satisfaction level of consumers towards haldiram's products.

3. SCOPE OF THE STUDY

The scope of this study on haldiram's products would include an analysis of the company's products, their quality, safety, pricing and distribution. The study aims to know the consumer perception and buying behaviour of haldiram's products. There is a need to identify the consumer preference and buying behaviour of haldiram's products. The focus of the study is to know the satisfaction level of consumers. Furthermore, the study would evaluate the customer experience at haldiram's stores and the effectiveness of haldiram's online presence.



4. LIMITATIONS OF THE STUDY

- The sample size of only 120 respondents was taken from a large population.
- The research study is based on Questionnaires collected from the respondents.
- This study is focused with special reference to Tirupur City.

5. RESEARCH METHODOLOGY RESEARCH DESIGN

The research design used for the study is descriptive in nature. The researcher has made an attempt to find the consumer preference and satisfaction level of Haldiram's products in Tirupur city.

SAMPLE DESIGN

The convenient sampling method was adopted in this research.

METHODS OF DATA COLLECTION

PRIMARY DATA

The primary data have been collected through structured questionnaires. The questionnaire was filled by 120 respondents in Tirupur city.

SECONDARY DATA

The secondary data was collected from various sources like Articles, Journals, Wikipedia, Related Websites.

6. TOOLS FOR ANALYSIS

- Simple percentage analysis
- Rank analysis

6.1 SIMPLE PERCENTAGE ANALYSIS

Percentage analysis is used in making comparisons between two or more series of data. Percentage is used to describe relationships. Percentage can also be used to compare the relative terms, the distribution of two or more series of data.

$$\text{Simple percentage analysis} = \frac{\text{Number of respondents}}{\text{Total number of respondents}} * 100$$

The information given by the proprietor will be influenced by their personal profile like age, educational

qualification, nature of business and so on. So, to have an idea on their personal profile a percentage analysis was carried out.

6.2 RANK ANALYSIS

A rank analysis is any of several statistics that measure an ordinal association, the relationship between ranking of different ordinal variables or different ranking of the same variables, where a "ranking" is the assignment of the labels "first", "second", "third", etc., To different of a particular variable. A rank analysis measures of similarity between two rankings, and can be used to assess the significance of the relation between them. It is not necessarily a total order of object because two different objects can have the same ranking. The ranking themselves are totally ordered.

7. REVIEW OF LITERATURE

1. Rani, N. M., Manchanda, M. S., Mahnani, M. S., & Shekhawat, T. S. (2019) A Study On Consumer Preference And Perception Regarding Snack Products With Specific Reference To Haldiram's. The present study attempts to capture consumer preference regarding ready to eat snack items and their perceptions regarding Haldiram's range ready to eat snack items. The major findings include that the majority of consumers consume Haldiram's products for over 3 years, many of them find the products have significantly been improved over a period of time.

2. Ahmed, J. U., Ahmed, A., Talukder, N., Sultana, I., & Anika, F. H. (2020) Haldiram's in India. A leading player in the snacks industry, Haldiram's, an already prevalent name in India, has been catering for the needs of the evolving consumer demand patterns since 1937. This case starts with a description of India's snacks market and Haldiram's standing as a company with dominant market share. As Indians are getting introduced to new global delicacies and flavours, their taste buds are changing, and a certain group of consumers are shifting towards healthy snacking options.

3. Khedkar, R. (2023) Traditional Food Adjuncts: Sustainable and Healthy Option for Functional Foods. In the era of functional foods, the knowledge of the medicinal benefits of the food adjuncts can encourage the entrepreneurs to position the products in the global market with their functional benefits.



8. DATA ANALYSIS AND INTERPRETATION

TABLE 1
TABLE SHOWING AWARENESS OF NUTRITIONAL PRODUCTS OF THE RESPONDENTS

S.NO	AWARE OF NUTRITIONAL PRODUCTS	HA	A	N	HDA	DA	TOTAL	RANK
1	NUTS, SEEDS & PULSES	28 (5) 140	43 (4) 172	32 (3) 96	11 (2) 22	6 (1) 6	436	2
2	CEREALS AND CORNFLAKES	11 (5) 55	19 (4) 76	53 (3) 159	13 (2) 26	24 (1) 24	340	10
3	PROTEIN POWDER	23 (5) 115	28 (4) 112	37 (3) 111	21 (2) 42	11 (1) 11	391	5
4	DRY FRUITS	34 (5) 170	38 (4) 152	29 (3) 87	8 (2) 16	10 (1) 10	435	3
5	DIET MIXTURE	21 (5) 105	23 (4) 92	47 (3) 141	13 (2) 26	16 (1) 16	380	7
6	HEALTH BARS	34 (5) 170	42 (4) 168	23 (3) 69	12 (2) 24	9 (1) 9	440	1
7	OATS	22 (5) 110	26 (4) 104	37 (3) 111	12 (2) 24	23 (1) 23	372	8
8	SUGAR FREE SWEETS	19 (5) 95	23 (4) 92	43 (3) 129	14 (2) 28	21 (1) 21	365	9
9	WHOLEWHEAT CRACKERS	27 (5) 135	26 (4) 104	46 (3) 138	7 (2) 14	14 (1) 14	405	4
10	PEANUTS	18 (5) 90	29 (4) 116	48 (3) 144	6 (2) 12	19 (1) 19	381	6

(SOURCE: PRIMARY DATA)

INTERPRETATION

From the above ranking analysis, health bars (1), nuts, seeds & pulses (2), dry fruits (3), whole wheat crackers (4), protein powder (5), peanuts (6), diet mixture (7), oats (8), sugar free sweets (9) and cereals and cornflakes.

INFERENCE

In this study, the majority of the respondents ranked (1) health bars.



TABLE 2
TABLE SHOWING SATISFACTION LEVEL OF THE HALDIRAM'S PRODUCTS

S.NO	SATISFACTORY	HS	S	N	HDS	DS	TOTAL	RANK
1	PRODUCT	43 (5) 215	38 (4) 152	23 (3) 69	4 (2) 8	12 (1) 12	456	1
2	QUALITY	24 (5) 120	33 (4) 132	48 (3) 144	6 (2) 12	9 (1) 9	417	5
3	PRICE	23 (5) 115	28 (4) 112	31 (3) 93	22 (2) 44	16 (1) 16	380	8
4	QUANTITY	29 (5) 145	38 (4) 152	34 (3) 102	7 (2) 14	12 (1) 12	425	4
5	OFFERS	17 (5) 85	22 (4) 88	23 (3) 69	19 (2) 38	39 (1) 39	319	10
6	VARIETY	26 (5) 130	47 (4) 188	27 (3) 81	9 (2) 18	11 (1) 11	428	3
7	ONLINE PAYMENT	17 (5)	21 (4)	38 (3)	13 (2)	31 (1)	340	9
		85	84	114	26	31		
8	TASTE	22 (5) 110	43 (4) 172	32 (3) 96	6 (2) 12	17 (1) 17	407	6
9	EASY AVAILABILITY	7 (5) 35	12 (4) 48	22 (3) 66	38 (2) 76	41 (1) 41	266	11
10	BRAND NAME	24 (5) 120	31 (4) 124	28 (3) 84	16 (2) 32	21 (1) 21	381	7
11	PACKAGING	39 (5) 195	44 (4) 176	19 (3) 57	5 (2) 10	13 (1) 13	451	2

(SOURCE: PRIMARY DATA)

INTERPRETATION

From the above ranking analysis, product (1), packaging (2), variety (3), quantity (4), quality (5), taste (6), brand name (7), price (8), online payment (9), offers (10), easy availability (11).

INFERENCE

In this study, the majority of the respondents ranked (1) product.



9.FINDINGS, SUGGESTION AND CONCLUSION

FINDINGS

- The Most (57.1%) of the respondents is Female.
- The Majority (43.3%) of the respondents are under the age group of between 20 to 30
- Majority of the respondents (36.7%) are Rs.10,001 to Rs.20,000.
- The majority of the respondents (440) are aware that the health bars are ranked 1
- Most of the respondents (456) are Highly satisfied with the product ranked 1.

5. <https://www.ijmtst.com/volume-3/issue-1/article-5/>.

SUGGESTIONS

1. The company should focus on creating more innovative and healthy products.
2. The company should focus on expanding its online presence to reach more customers.
3. The company should focus on expanding its distribution network to reach more customers.
4. The company can focus on introducing more varieties of products and flavours to meet the changing tastes and preferences of customers.
5. The company should focus on increasing its presence in rural areas and developing innovative products that cater to the needs of rural customers.

CONCLUSIONS

Haldiram's products have a strong presence in the Indian market and have been accepted well by the customers. It should focus on creating more innovative and healthy products, expanding its distribution network, enhancing its online presence and promotional activities to increase its customer base and sales and also it should focus on improving customer service, both online and offline, to ensure that customers are satisfied with their purchases and experience. Haldiram's products are of good quality and are reasonably priced. Overall, Haldiram's products are highly popular among customers due to their quality and taste. The company has managed to create a strong brand image and customer loyalty for its products. Therefore, Haldiram's products are an excellent choice for customers looking for quality snacks and sweets.

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AN ANALYSIS OF RELATIONSHIP BETWEEN LOVE MARRIAGE AND SEVENTH BHAVA

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ABSTRACT

A study such as this one on 'Love Marriages and the Seventh Bhava' is very useful to understand whether marriage, which is one of the most important events in life, is an arranged marriage or a love marriage. This study aims to establish and confirm prediction rules for the study of love marriages and the seventh Bhava. Additionally, it will be demonstrated that the Karaka planets Rahu, Shukran, Mars, and Mercury influence the horoscope of love marriages, including the Lagna Lord, Fifth Lord, Seventh Lord, and Rahu, which are all Karaka planets.

KEYWORDS - Bhava, Lagna, Ragu, Kalatra Sthana, Bhagya Sthana

I. INTRODUCTION

According to astrology, the 7th house (Kalatra house) is where one's love life and married life are determined. One can know one's behaviour, desire, love interest etc., only by this place. If Venus Mars Saturn conjuncts the 7th lord or Venus Mars Saturn aspects the 7th lord then love marriage will take place. the Ascendant is in the fifth house, or five seven houses are connected in one's horoscope, they will fall in love. Similarly, if Lagna Kalatra Bhavam, or Lagna 5th place is connected with 7th Bhava, love marriage will definitely happen. Love bells ring in college if the planets of love are in conjunction with the fourth lord and in the workplace if they are in conjunction with the ninth and tenth lords. If Saturn and Mercury are in the third house, love will be a bit slow. Courage is very important for love and loved ones, Mars is the giver of that courage. Saturn is also the founder of love. the 7th house, which is the Kalatra house, is the place that determines the married life and love.

II. RULES FOR LOVE MARRIAGE

- 1-5-7-9 lords are related to lagna or rasi ie they are related in some way like combination transaction, sound vision, essence transaction. Getting sinful connections like 1-7, 5-7, 5-9, 7-9.
2. Planets related to love like Sun, Shukra, Chevvai, Saturn mentioned above are associated with the above mentioned 1-5-7 Bhava.
3. 7th lord and Venus and Saturn conjunction love marriage
4. 7th lord and Venus and Rahu conjunction love marriage
5. Venus and Saturn, Mars - The close position of Venus will cause love

III. RULES FOR INTERMARRIAGE

1. Mars Saturn, Venus trine 7th Bhava, Bhavadipati getting relation.
2. Mars, Saturn and Rahu are associated with the 7th Bhava, Bhava lord.

3. Mars and Saturn with Rahu and Ketu in Lagna or 8th.
4. Conjunction of Mars and Mercury in 5th or 11th.
5. Love Combinations Rahu, Ketu from Horoscope. If there is admission then intermarriage takes place. Rahu represents Muslims and Ketu represents Christians.
6. If Mars and Rahu stand together with the lord of the 7th house, there will be a mixed marriage if it is afflicted or aspected by Venus.
7. As much as the 2nd house and 2nd house lord are affected, the marriage will take place with someone who violates social norms and has different customs.

IV. WILL LOVE MARRIAGE SUCCEED?

If the 5th house, its lord, the 7th house, its lord or Venus is afflicted by sinners, then the love will succeed and end in marriage. They will not suffer much and the love will break.

If Lagna lord and 7th house lord have a good relationship, love will end in marriage. If Lagna lord and Venus have a good relationship, love will end in marriage. Even if Shani and Venus get sambandha and Shani is in yoga position, love can end in marriage.

According to Nadi rules, if one of the lovers has Venus in his horoscope, the other has Mars in his horoscope, or if one has Mars in his horoscope, Venus in the other's horoscope indicates success in love. If one's horoscope Venus and other's horoscope Mars is 6 & 8th place then love will fail.

If Jupiter is placed in a male horoscope in a sign with Venus in a woman's horoscope, but if Rahu is placed in a male's horoscope in a female horoscope with Venus in a female horoscope, then there may be struggle or separation in life. This also applies to men.

If Saturn is in the sign of the female horoscope and Venus is present in the male horoscope, the life of Kalatra will be spent with confusion and a worried face.



If Venus is placed in the sign of the Sun in the female horoscope and Venus is placed in the male horoscope, then there will be separation in love.

If the woman's Mars and the man's Venus gain strength and form a kendra to each other, the marriage will be happy.

If both the planets are in the same rasi and get the same navamsa, the married life will be blissful.

V. BAD MARRIAGE LIFE DUE TO SOME INAUSPICIOUS PLANETARY COMBINATIONS IN 7TH PLACE

Due to some inauspicious planetary combinations occurring in the 7th place, the life of Kalatra will be ruined. It should also be noted.

If there are such planetary combinations of Mars - Saturn, Sun - Saturn, Mars - Sun, Rahu - Venus, Ketu - Manthi, Mercury - nesa Venus, nesa Mars - Rahu, Moon - Venus, Guru - Moon, Sun - Venus, Saturn - Venus, Mars - Venus, Kalatra dosha will occur and bring more than one marriage will happen.

VII. HOROSCOPE TABLES

Example Horoscope : 01

Date of Birth : 27.12.1972
 Place of Birth : Chennai
 Signs : Virgo
 Dasa Bhukthi : Moon Dasa 08 Years 10 Month 04 Days

Time of Birth : 02.30 PM
 Lagna : Aries
 Star : Hastha - 1

	LAGNA	SATURN	KETU
	RASI		
SUN RAGU JUPITER	MERCURY MARS VENUS		MOON

	MOON	KETU	
MERCURY	NAVAMSA		SATURN SUN
			MARS
VENUS	LAGNA RAGU	JUPITER	

Rules Applied in Horoscope Table:

- Based on Rule 3: Venus and Saturn conjunct 7th lord.
- 9th lord - Rahu conjunction

Example Horoscope : 02

Date of Birth : 27.11.1987
 Place of Birth : Erode
 Signs : Aquarius
 Dasa Bhukthi : Mars Dasa 00 Years 06 Month 20 Days

Time of Birth : 07.58 PM
 Lagna : Gemini
 Star : Shavishta - 4

If the 7th lord gets neesam then the 1st house will not stay or it will go to 2nd house. If the dosha is done in the first part, the second part will not suffer by dosha.

Eclipse in 7th, Perverse in 7th and this should go as 1st house and 2nd house.

Sun alone in 7th - Marriage is a horse's horn, wife will not stay.

VI. LOVE MARRIAGE AND SEVENTH BHAVA PREDICTION RULES

Rule No.1

Correlation of 1,5,9 with 7th Bhava.

Rule No.2

7th Bhava is associated with Moon, Venus, Mars and Saturn.

Rule No.3

Venus and Saturn conjunct 7th lord.

Rule No.4

Venus and Rahu conjunct 7th lord.

Rule No.5

Moon Rahu, Mercury conjunct in 7th Bhava.



harmonious atmosphere. If such 7 points are spoiled, he is still an orphan even if he is a man. Relatives and friends will not be helpful to him and there will be a crack in the relationship.

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A STUDY ON CONSUMER PREFERENCE TOWARDS BOUTIQUE FOR FASHION APPAREL OUTFITS AMONG SPINSTER WITH REFERENCE TO TIRUPUR CITY

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ABSTRACT

This study aims to investigate the consumer preferences of spinster towards fashion boutique apparel outfits in Tirupur city. The research will be conducted through a survey, and the data will be collected from a sample of spinster who are residents of Tirupur city. The study will focus on identifying the factors that influence spinster's decision-making process when it comes to purchasing fashion boutique apparel outfits. The study will employ a quantitative research approach, and the survey questionnaire will consist of both closed-ended and open-ended questions. The data collected will be analyzed using descriptive statistics, frequency analysis, and inferential statistics. The study's findings will be presented through tables, charts, and graphs. The study's significance lies in identifying spinster's preferences and factors that influence their decision-making process when purchasing fashion boutique apparel outfits. The findings will help boutique owners and marketers in Tirupur city to understand the needs and preferences of their target audience and cater to them better. Furthermore, the study will contribute to the existing literature on consumer behaviour towards fashion apparel outfits. In conclusion, this study aims to contribute to the knowledge of consumer preferences towards fashion boutique apparel outfits and help boutique owners and marketers to improve their business strategies.

KEYWORDS: Boutique, Decision-making process, Factors, Spinster.

1. INTRODUCTION

Marketing is the accelerator of economic growth. In developing countries, marketing helps to boost up the economic growth. Though boutique products are new types of business, these products are influencing people.

Boutique means a shop selling and stocking latest fashion articles like shawls, women's clothes, fabric, etc. These latest fashion articles are designed by a designer having skilled knowledge on textiles. Fashion designer is a person who designs clothes and is the owner of the boutique. Marketing tries to promote the articles found in the boutique in a systematic way.

2. STATEMENT OF THE PROBLEM

Good marketing and customer satisfaction are essential aspects for the boutique to be well established in the market. The satisfaction of the customers with the product of the boutique must be maintained throughout the time so as to gain confidence and goodwill of the customers. These aspects are vitally important to expand the business in future. There are lots of problems faced by boutique. First of all, there should be one organization where one can discuss their problem. One of the major problems seen in boutique is that they open and close frequently.

3. OBJECTIVES OF THE STUDY

- To know the socio – economic factors of the respondents.
- To study about the consumer preference towards various fashion apparels of outfits.
- To analyse about the fabric selection and budget allocation of boutique consumer.
- To analyse the satisfaction level towards boutique shopping.
- To offer findings & suggestions.

4. SCOPE OF THE STUDY

The main focus of this study tries to show how marketing in promotion of the boutique products. Promoting marketing strategy, observations product design, product selection and promotional methods should be kept in mind for the successful and profitable marketing. Advertisement through television, films and verbal media; are the main media for promotion of boutique products. Discounts and sales of dress play a major role. People are attracted to shop during reduction and discount sale period.

Without effective advertisement, customers are not aware of the boutique and its products. Besides, another aspect is designer-should always fulfill customer satisfaction. The economic status of the boutique increases with the frequent



purchase by the customer. Even in our country if the customers prefer-good fitting clothes and designs they can just go to boutique and stitch them. People do not have to wait for that. Every marketer should understand the- customers' interest and need, which influence the behavior of customers. In the era of cut - throat competition, successful marketing of the products demand a thorough understanding of customer's behavior. Good marketing helps the-boutique to improve the image and profit.

5. RESEARCH METHODOLOGY

5.1 RESEARCH DESIGN

The research design used for the study is descriptive in nature. The basic objectives of this study is to sort out the problems and prospects faced by boutique.

5.2 SAMPLE DESIGN

The convenient sampling method was adopted in this research.

5.3 SOURCE OF DATA

• PRIMARY DATA

The primary data have been collected through a structured questionnaire. The questionnaire were filled by 120 respondents in Tirupur city.

• SECONDARY DATA

The secondary data was collected from various sources like Articles, Journals, Wikipedia, Related Websites.

5.4 AREA OF THE STUDY

The research study was conducted only in Tirupur city.

5.5 SAMPLE SIZE

This study was conducted with a sample size of 120 respondents in Tirupur city.

5.6 TOOLS AND TECHNIQUES

- Simple percentage analysis
- Weighted Average Method
- Ranking analysis

6. PERIOD OF STUDY

The study has been conducted for a period of four months from January 2023 to April 2023.

7. REVIEW OF LITERATURE

Ziwei Liu, Ping Luo, Shi Qiu, Xiaogang Wang, Xiaoou Tang (2016) Recent advances in boutique clothes recognition have

been driven by the construction of clothes datasets. Existing datasets are limited in the amount of annotations and are difficult to cope with the various challenges in real-world applications. In this work, we introduce Deep Fashion, a large-scale clothes dataset with comprehensive annotations.

Mahesh Shaw (2016) Clothing reflects human history, showing progress in materials availability mastering of new technology, culture, spirituality, secularism, tradition and society. Clothing has always been identified with the diverse ethnicity, geography, climate and cultural traditions of the people of that region. Clothing evolved from daily use costumes to festive occasion costumes. Sourcing is one of the most important activities in the fashion business with the right product for the right quality at the right price in the right frame.

kavithagupta (2016) The fashion apparel industry is amongst the very few in the world that is truly vertically integrated from raw materials to finished products, from fiber to retail, in other words from “fiber to fashion”

Garg (2016) A study was conducted by to describe new prospects and modification in Kathiawar stitches. The study was conducted with the main objective of creating products using Kathiawar stitches and assess the consumer acceptability as per the market trend. From books, museums and artisans of Kathiawar, traditional motifs were collected. For these twenty-two motifs of Kathiawar embroidery were evaluated by judges at 2 levels. The study concluded that modern designs were preferred by judges and students the most. Modern modification was preferred by both students as well as women.

Mishra (2015) A study conducted by to gather information about consumer buying practices and attitudes towards Kashmiri shawls. It was observed that Kashmiri shawls are very much in demand but customers look for greater quality of stitches and motifs. Authentic genuine shawls are quite expensive, but still consumer have passion to have a Kashmiri shawl. Woollen shawls are within reach of the common consumer, but Shahtoosh is a best purchase. Consumers are also looking for cheaper shawls of blended yarns.

Poh K. Tee, Behrooz Gharleghi, Benjamin Chan, Behrang Samadi & Abbas A. Balahma (2015) Purchase intention is the feeling of people that makes them to purchase the product or service more and more. It's because of the product that they thought is can bring satisfaction to them and makes them buy more and more. Also, it's not all customers have this feeling before having experience in that situation. And also some of customer has a different feeling of the product and service that the company offers. Paper says about Purchase Intention of International Branded Clothes Fashion among Youngers.



8. ANALYSIS AND RESULT
8.1 PERCENTAGE ANALYSIS

Table 1: Demographic Variable of the Respondents

Factors	Options	No. of Respondents	Percentage (%)
Age	Under 20	54	45%
	21 – 25	47	40%
	26 – 30	12	10%
	31 – 35	4	3%
	Above 36	3	2%
Occupation	Employee	36	30%
	Business	18	15%
	Professional	5	4%
	Student	61	51%
Sources of Income	Parent	56	47%
	Self	59	49%
	Guardian	5	4%
Monthly Income	Below ₹15,000	12	10%
	₹16,000 - ₹25,000	35	29%
	₹26,000 - ₹35,000	9	7%
	₹36,000 - ₹50,000	2	2%
	₹51,000 - ₹99,000	1	1%
	Morethan ₹1,00,000	0	0%
Regular Customer At Boutique shop	Care taker	61	51%
	Yes, always	44	37%
	Sometimes	58	48%
Often Visit	No	18	15%
	Daily	0	0%
	Weekly	4	3%
	Fortnightly	12	10%
	Monthly	29	24%
	Occasionally	75	63%
Average Time Spend	Less than 30 min	17	14%
	30 min – 1hr	53	44%
	1 hr – 2 hr	39	33%
	More than 2hr	11	9%
Accompanies for Purchase	Friends	23	19%
	Family	39	32%
	Self	33	28%
	Relatives	25	21%

Table 2: Respondents preference towards fashion apparel outfits among spinster at boutique

Factors	Options	No. of Respondents	Percentage (%)
Preference	Unique Collection	59	49%
	Trendy	39	33%
	Accessories	6	5%
	Specific Product	16	13%
Availability of Tailors	Yes, absolutely	78	65%
	Sometimes	34	28%
	No	8	7%
Occasions Purchase	Festival Season	29	24%
	Offers Time	45	38%
	Weddings	12	10%
	Usual Times	34	28%
Current Fashion Trends	Yes, I follow them closely	88	73%



	Yes, but I don't really follow them	26	22%
	No	6	5%
Aware of Fashion Apparel	Online	78	65%
	Society	11	9%
	Advertisement/Promo	6	5%
	Visiting Shop	25	21%
Often Purchase Clothes	Formals	23	20%
	Casuals	48	40%
	Sports wear	2	1%
	Traditional wear	47	39%
Preferring types of materials	Cotton	57	47%
	Silk	45	38%
	Chiffon	6	5%
	Synthetic	7	6%
	Crepe	5	4%
Patterns	Dice	26	21%
	Stripes	18	15%
	Dots	17	14%
	No Pattern	39	33%
	Other	20	17%
Clothes	Salwar	29	24%
	Maxi dress	12	10%
	Jeans & Crop Top	58	49%
	Saree	17	14%
	Skirt & Top	4	3%
Budget Allocation	Below ₹1,000	56	47%
	₹1,001 – ₹1,500	43	36%
	₹1,501 - ₹2,000	14	12%
	₹2,001 - ₹4,000	5	4%
	More than ₹4,001	2	1%
Payment Mode	Cash	33	28%
	Net banking	6	5%
	Debit/Credit card	39	32%
	UPI Payments	42	35%
Other normal shops admires	Yes, always	96	80%
	Sometimes	15	13%
	No	9	7%
Suggests Boutique shop	Always	62	52%
	Sometimes	45	37%
	Rarely	13	11%

Percentage analysis deals with the demographic factors, respondent's preference towards fashion apparel outfits among spinster at boutique. It can be inferred from the above Table 1 shows the most of the respondents 45% are under 20 years old, the majority of the respondents 51% are students, the Mostly 49% of the respondents are belongs to Self, majority 51% of the respondents are Care taker, mostly of the respondents 48% are Sometimes, majority of the respondents 63% are Occasionally, mostly 44% the respondents are spending 30 min – 1 hr, mostly 32% of the respondents are Family.

Table 2 shows that mostly 49% of the respondents are preferring Unique Collection, majority 65% of the respondents selecting Yes, absolutely for availability of tailors for stitching, mostly 38% of the respondents are purchasing at offer time, Majority 73% of the respondents are following current fashion trends closely, the majority 65% of the respondents are aware that fashion apparel is available online, mostly 40% of the respondents are often purchasing casuals, mostly 47% of the respondents prefer cotton, the Mostly 33% of the respondents are preferring No Pattern, the Mostly 49% of the respondents are preferring Jeans & Crop Top, mostly 47% of the respondents are allocating below ₹1,000, mostly 35% of the



respondents are paying by UPI, the majority 80% of the respondents admire normal shops, the majority 52% of the

respondents always like to suggest boutique shops to friends, families and neighbours.

8.2 Weighted Average Method

Table 3: Showing satisfaction level of the Boutique Shop

Particulars	5	4	3	2	1	Total	Weighted Score	Rank
Location	390	100	18	18	2	528	4.44	VI
Parking Facility	315	72	78	20	3	488	4.06	VIII
Cleanliness	555	20	3	4	1	583	4.85	II
Availability hours	575	12	6	0	0	593	4.94	I
Product Demo	190	268	33	6	1	498	4.15	VII
Return Policy	95	144	48	90	4	381	3.17	IX
Updated Collections	51	32	18	8	0	568	4.73	IV
Quality	13	76	135	36	2	379	3.15	X
Colour Fade	44	104	12	2	1	559	4.65	V
Overall Experience	49	60	18	2	0	570	4.75	III

Table 3 shows that the score is 593 with 4.94 rate and ranked in first among the 10 specifications like overall performance is 583 with 4.85 rate and rank second and expectation the score is 570 with 4.75 and ranked third and arrangement in time is 568 with 4.73 rate and rank fifth and planning of the event is 559

with 4.65 rate and ranked sixth the total is 528 score 4.44 and ranked seventh the total is 498 the score is 4.15 and ranked eight the total is 488 and the score is 4.06 and ranked ninth the total is 381 score is 3.17 and ranked tenth total is 379 score is 3.15.

8.3 Ranking Analysis

Table 4: Showing Ranking Analysis of the Boutique Shop

Factors	I	II	III	IV	V	Total	Rank
Customers Need	225	288	3	4	0	520	II
Stitching	285	248	0	2	0	535	I
Size	115	260	9	52	3	439	V
Offers	345	48	69	22	5	489	III
Fitting rooms	130	216	63	32	3	444	IV

Table 4 shows that Stitching score with 535 and rank with first, Customer Need score with 520 and rank with second, offers score with 489 and rank with third, fitting rooms of the event score with 444 and rank with fourth, size score with 439 and rank with fifth.

9. SUMMARY OF FINDINGS

- The most of the respondents 45% are under 20 years old.
- The majority of the respondents 51% are students.
- The most of the respondents 49%, spend their money on their own.
- The majority of the respondents 51% of their monthly income is spent by their caretaker.
- The most of the respondents 48% of them are sometimes only visiting customers of the boutique shop.
- The majority of the respondents 63% are occasionally visit the boutique shop.
- The majority of the respondents 44% are spending 30 minutes to 1 hour at boutique shops.
- 32% of the respondents are the family members who accompany the purchase.
- The most of the respondents 49% are preferring only unique collection at boutique shop.

- The majority of the respondents 65% are selecting absolutely for the availability of tailors for stitching dresses at boutique shops.
- 38% of the respondents are purchasing at offer time only.
- The majority of the respondents 73% are following current fashion trends closely.
- The majority of the respondents 65% are aware that fashion apparels by online.
- The most of the respondents 40% are often purchasing casuals.
- The most of the respondents are 47% prefer cotton.
- 33% of the respondents prefer no pattern.
- The most of the respondents 49% prefer jeans and crop tops.
- The most of the respondents 47% are allocating the budget below ₹1,000.
- 35% of the respondents are paying by UPI mode.
- The majority of the respondents 80% admire normal shops.
- The majority of the respondents 52%, who always like to suggest boutique shops to their friends, families, and neighbours.
- The majority of the respondents prefer only parking facility in satisfaction level.



- The majority of the respondents prefer stitching type in ranking level.
- The majority of the respondents prefer quality in satisfaction level.

10. SUGGESTIONS

- Target younger customers: As most of the respondents (45%) are under 20 years old, it is recommended to focus on attracting younger customers by offering trendy and unique collections that appeal to them.
- Offer student discounts: Since the majority of the respondents (51%) are students, boutique shops can offer student discounts to attract more students to their store.
- Improve marketing efforts: Since the majority of the respondents (63%) occasionally visit boutique shops, it is recommended to improve marketing efforts to increase footfall. This can be done by advertising on social media platforms, offering promotional discounts, etc.
- Hire tailors: As the majority of the respondents (65%) select boutique shops based on the availability of tailors for stitching dresses, it is recommended to hire skilled tailors who can offer customized tailoring services.
- Offer seasonal discounts: As 38% of the respondents purchase during offer time only, it is recommended to offer seasonal discounts to attract more customers.
- Stock more casuals: As the most of the respondents (40%) often purchase casuals, it is recommended to stock more casuals in the boutique shop.

11. CONCLUSION

Based on the study on consumer preference towards boutique for fashion apparel outfits among spinsters in Tirupur city, it can be concluded that there is a significant demand for boutique clothing among spinsters in the city. The study revealed that the spinsters prefer boutique clothing for its uniqueness, quality, and exclusivity.

The study also found that factors such as store ambiance, customer service, and variety of collection are crucial in attracting spinsters to boutique stores. Additionally, social media platforms play a significant role in the decision-making process of spinsters when it comes to boutique clothing purchases.

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A STUDY ON CUSTOMER PREFERENCE & FACTOR INFLUENCING TOWARDS EVENT MANAGEMENT WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Event booking and management system is a convenient method to book and view events in and around the user's interests and in the desired time. These events maybe of any type including concerts, stand-up comedy, art showcases, fests, musicals, dramas etc... This project enables the users to access all the details regarding the event and make bookings. The proposed invention relates to an event management system, comprising: a user platform installed in the system for displaying map consisting detail information about the activities, a registration module installed in the system that inputs authentication information of users, a data selection module associated with the registration module for selecting identification information of the users and creating events, a data storage module connected to the notification module for storing information regarding activities.

1. INTRODUCTION

Event management is the application of project management to the creation and development of large or small scale events such as festivals, conferences, ceremonies, formal parties, concerts, or conventions. The last few years have seen a rapid growth in the event management industry. Considering the existing system problems related to event management we are developing an android application for event management. This application will be accessible only for android. Application will mainly focus on birthday party, marriage functions and social events. The application will be developed using Android studio and back end will be managed in SQL database.

2. STATEMENT OF THE PROBLEM

Overspending or not having enough money to spend ,Not considering little things which means those last minutes tasks and details that fall in between at the end moment and Selecting the perfect venue that suits the event are some of the common problems faced by the people in event management. Uncooperative weather is an instant epidemic which can totally break the event within a few seconds.

3. OBJECTIVES OF THE STUDY

- To study the socio-economic profile of the respondents
- To analyse the customer preference towards event management
- To understand the factor influences customer to take services from event management
- To offer valuable suggestion

4. SCOPE OF THE STUDY

This study helps in knowing how far the event management are been familiar to the surroundings and how far the people in the city are using this and how familiar is they are about its specifications ,services, options and its functions . This again helps the unknown people that how to apply for the event management and their services, varieties of options to choose on and its functions too. This also helps in giving suggestions to the researchers or to the organisations that what they wanted to change in their services and how far they want to increase its promotion to be known by the end customer in the world and this help us to learn many things about the services provided by the event management

5. RESEARCH METHODOLOGY

Research methodology is the specific procedures or techniques used to identify ,select, process, and analyze information about a topic.

SOURCE OF DATA

Primary Data

The primary data has been collected through questionnaires filled by 100 respondents using electric bikes.

Secondary Data

The secondary data have been chosen from various journals and websites.

Sampling Design

For the present study purpose , simple convenient random sampling has been selected. This particular survey was directed at only in Coimbatore city



Sampling Size

Sample size taken in this study is 120 respondents.

Area Of the Study

The area of the research in Coimbatore city

Tools Used

- Simple percentage method
- Weighted average method
- Rank analysis method

6. REVIEW OF LITERATURE

Celuch, K. (2021)

His research provides a bibliometric review of the state-of-the-art information and communication technologies (ICTs) in the context of events, and maps out an agenda for future directions on how innovations in the technological realm can help fostering sustainability in the events industry.

Mair, J., & Smith, A. (2021)

The special issue dedicated to events and sustainability is introduced here. We provide synopses of the papers, preceded by an introductory essay that examines how event studies has approached the relationship between events and sustainable development. Existing work too often assumes that sustainability means reducing negative environmental impacts with other aspects of the sustainability paradigm neglected. And whilst social issues have risen to prominence in events research generally, this work is usually considered outwith

sustainability debates, and without considering environmental and economic interrelationships.

Richards, G. (2021)

This paper comments on the analysis by Leung and Thomas (2021) on the role of specialist event journals in shaping the field of event management research. It agrees with their analysis of the distribution of papers, particularly in terms of the dominance of the English language, although it argues that a wider analysis of the literature reveals a wealth of non-English sources as well. It offers some thoughts on the driving forces behind the distribution of event management publications, including journal ranking systems, economic power and the advent of new information technologies. It argues that journals should act as curators and leaders in the field, helping to open new avenues for research.

Biaett, V., & Richards, G. (2020)

This paper provides an introduction to Special Issue on ‘Event Experiences: Measurement and Meaning’. It reviews the research conducted by the ATLAS Event Group over the past decade, and highlights the interplay between qualitative and quantitative research on events during this period. Major research themes related to the event experience are analysed, including the social dimension of events, event design, visitor engagement, eventful cities and event networks and platforms. The different quantitative and qualitative contributions to the issue are introduced and compared.

7. ANALYSIS AND RESULT

7.1 Percentage Analysis

Table 1 : Demographic Variable of the respondents

Factors	Options	No. of Respondents	Percentage(%)
Gender	Male	79	66%
	Female	41	34%
Age group	18-21	9	7%
	22-30	32	27%
	31-40	48	40%
	41-50	19	16%
	More then 50	12	10%
Occupation	Employee	41	34%
	Business	29	24%
	Professional works	43	36%
	Unemployed	7	6%
Annual income	Below 1,00,000	15	13 %
	1,00,000 – 2,00,000	42	35 %
	2,00,000 – 3,00,000	36	30 %
	Above 3,00,000	27	22 %
Marital status	Married	61	51 %
	Unmarried	59	49 %
Source of income	Self	43	36 %
	Parents	46	38 %
	Guardian	31	26 %
Area of residents	Urban	38	32 %
	Rural	82	68 %



Experience	Once	29	24 %
	More then once	57	48 %
	Never	34	28 %

Table 2: Respondents behavior toward various function of Event management

Factors	Options	No.of Respondents	Percentage(%)
Mode of Application	Direct visit	33	27 %
	Online	87	73 %
Inflencer	Relatives	20	17 %
	Friends	41	34 %
	Advertisement	36	30 %
Preference	Self	23	19 %
	To Reduce the work	18	15 %
	To Save the time	65	54 %
	To Reduce the stress	15	13 %
Prefer the event	To Have a quality of work	22	18. %
	Traditional	26	22 %
	Modern	94	78 %
	Desired output	Yes, of course	40
Attract	Not much	50	42 %
	No idea	30	25 %
	3D Camera	17	14 %
Budget	Event Diagramming and designing floor plan	30	25 %
	DJ setup	22	18 %
	Live streaming	36	30 %
	Drone	15	13 %
Affordability	Rs.1,00,000 -2,00,000	15	12 %
	Rs.2,00,000 -3,00,000	34	28 %
	Rs.3,00,000 -4,00,000	26	22 %
Suggest	More then 5,00,000	45	38 %
	Expensive	30	25 %
	Moderate	56	47 %
	Cheap	34	28 %

Table 3 Respondents behavior toward various function of Event management

Factors	Option	Respondents	Percentage (%)
Better than own management	Yes	90	75 %
	No	30	25 %
Reduces the burden	Catering service	12	10 %
	Photography & videography	48	40 %
	Makeup artist and designer	12	10 %
	All the above	48	40 %
Complets the work	Earlier	19	16 %
	On time	86	72 %
	At last movement	15	12 %
Comfortable	Yes, always	24	20 %
	Yes, sometimes	60	50 %
Suggest	Never	36	30 %
	Always	26	22 %
	Sometimes	73	61 %
	Never	21	17 %



Percentage analysis deals with the demographic factors, respondent's behavior towards various features of the health drinks and advertisement. It can be inferred from the above Table 1 shows the The Majority of the respondents are Male (66 %), The Most of the respondents are 31-40 years of age is (40%), The Most of the respondent's in occupation are Professional is (36%), The Most of the respondent's income is between Rs.1,00,000 to 2,00,000 is (35 %), The Majority of the respondents are married is (51%), The Most of source of income spend on the event management is by parents is (38 %), The Majority of respondents are from rural is (68 %), The Most of the respondents are experienced with the event management more than once is (48 %),

Table 2 shows that Majority of the respondents preference for online mode of application is (73 %),The Most of the people who influenced the respondents to the event management is friends (34 %),The Majority of the respondents preferring event management is to save the time is (54 %),The Majority of the respondents preferring their event to be in the way of tradition

7.2 Weighted average method

Table 4: Showing satisfaction level of the event management

PARTICULARS	5	4	3	2	1	TOTAL	WEIGHTED RATE	RANK
REGISTRATION	140	188	102	18	2	450	3.75	I
OVERALL PERFORMANCE	80	224	108	6	9	427	3.56	IV
EXPECTATION	105	196	108	14	7	430	3.58	III
ARRANGEMENT IN TIME	100	196	81	28	10	415	3.46	V
PLANNING OF THE EVENT	105	224	108	8	3	448	3.73	II

Table 4 shows that on the specification of registration , the score is 450 with 3.75 rate and ranked in first among the 4 specifications like overall performance is 427 with 3.56 rate and rank fourth and expectation the score is 430 with 3.58 and

7.3 Ranking analysis

Table 5: Showing ranking on event management

PARTICULARS	I	II	III	IV	V	TOTAL	RANK
SERVICES	11 (5) 55	13 (4) 52	34 (3) 102	41 (2) 82	21 (1) 21	312	III
CLEANLINESS	2 (5) 10	14 (4) 56	34 (3) 102	38 (2) 76	32 (1) 32	276	V
CREATIVITIES	3 (5) 15	9 (4) 36	35 (3) 105	33 (2) 66	40 (1) 40	262	VII
MANAGEMENT OF THE EVENT	2 (5) 10	14 (4) 56	26 (3) 78	33 (2) 66	45 (1) 45	255	IX
COMMUNICATION	4 (5)	14 (4)	32 (3)	34 (2)	36 (1)	276	V

is (87 %), The Majority of the respondents feeling they did not get much desired output from their ideas is (56 %),The Most of the service that attracts the people the most is live streaming is (32 %), The Most of the respondent's budget allocation to the event of more than 5 lakhs is (39 %),The Majority of the respondent's feeling that the event management is moderate to afford is (56 %),

Table 3 shows that Majority of the respondents preferring event management over the personal management is (75 %),The Most of the respondents feeling that photography & videography and all of the services reduces their burden a lot is both (41 %), The Majority of the respondent's feeling that event management completes their work on time is (72 %),The Most of the respondents feeling comfortable working with the event management sometimes is (50 %), The Majority of the respondents suggesting the event management to their friends, family and relatives sometimes is (61 %),The Most of the respondents in weighted average method is Registration (450), The Most of the respondents ranked Equipment (431).

ranked third and arrangement in time is 415 with 3.46 rate and rank fifth and planning of the event is 448 with 3.73 rate and ranked second.



	20	56	96	68	36		
TIMING	4 (5) 20	11 (4) 44	26 (3) 78	37 (2) 74	42 (1) 42	258	VIII
PRICE	5 (5) 25	16 (4) 64	22 (3) 66	40 (2) 80	37 (1) 37	272	VI
DECORATION	4 (5) 20	20 (4) 80	40 (3) 120	21 (2) 42	35 (1) 35	297	IV
EQUIPMENT	8 (5) 40	35 (4) 140	32 (3) 96	20 (2) 40	25 (1) 25	341	I
ORGANISING	7 (5) 35	27 (4) 108	40 (3) 120	14 (2) 28	32 (1) 32	323	II

Table 5 shows the service score with 312 and rank with third, cleanliness score with 276 and rank with fifth, creativities score with 262 and rank with seventh, management of the event score with 255 and rank with ninth, communication score with 276 and rank with fifth, timing score with 258 and eighth, price score with 272 and rank with sixth, decoration score with 297 and rank with fourth, equipment score with 341 and rank with one, organising score with 323 and rank with second

9. SUMMARY OF FINDINGS

- ❖ On the application of the percentage analysis, the following results were obtained
 - The Most of the respondents are 31-40 years of age is (40%)
 - The Majority of the respondents are Male (66 %)
 - The Majority of the respondent’s in occupation are Professional is (36%) .
 - The Most of the respondent’s income is between Rs.1,00,000 to Rs 2,00,000 is (35 %).
 - The Majority of the respondents are married is (51%).
 - The Most of source of income spend on the event management is by parents is (38 %).
 - The Majority of respondents are from rural is (68 %).
 - The Most of the respondents are experienced with the event management more than once is (48 %).
 - The Majority of the respondents preference for online mode of application is (73 %).
 - The Most of the people who influenced the respondents to the event management is friends (34 %).
 - The Majority of the respondents preferring event management is to save the time is (54 %).
 - The Majority of the respondents preferring their event to be in the way of tradition is (87 %).
 - The Majority of the respondents feeling they did not get much desired output from their ideas is (56 %).
 - The Most of the service that attracts the people the most is live streaming is (32 %.)
 - The Most of the respondent’s budget allocation to the event of more than 5 lakhs is (39 %).

- The Majority of the respondent’s feeling that the event management is moderate to afford is (56 %).
- The Majority of the respondents preferring event management over the personal management is (75 %).
- The Most of the respondents feeling that photography & videography and all of the services reduces their burden a lot is both (41 %).
- The Majority of the respondent’s feeling that event management completes their work on time is (72 %).
- The Most of the respondents feeling comfortable working with the event management sometimes is (50 %).
- The Majority of the respondents suggesting the event management to their friends, family and relatives sometimes is (60.83 %).
- ❖ On the basis of weighted average method ,the following result is obtained
 - The Most of the respondents in weighted average method is Registration (450)
- ❖ On the basis of ranking analysis, the following result is obtained
 - The Most of the respondents ranked Equipment (431)

10. SUGGESTIONS

Event management reduces the burden of the people in organizing an event. The event management services is that they can take on most of the stressful tasks, leaving the customers with very few worries about the event. When an unexpected problem arises, the event management companies make sure that this has a minimal impact on the entire event and that it is fixed quickly. They help reduce the work of the customers and give us a quality results. Customers of the event management are happy with the services provided by the event management. Event managements holds every services that a customer needs and it is very helpful where we get everything at one place. Every services are provided by professionals with variety of options to choose from. Event management companies saves you the time and money. They give creative



ideas and proven event formats that will work for the customers.

11. CONCLUSION

Event management is a glamorous and exciting profession which demands a lot of hardwork and dynamism. As the name suggests, it means conceptualizing planning, organizing and finally executing an event. The event could be of any type musical show concert,exhibition, product launching etc.

Event management is a rising profession and since americans are getting more organized in what we do,we need event planners to help us get organized and coordinated in all occasions like weddings,meeting,conferences, spring and winter games,and all other professional and personal events.This industry is just eight years old in India,but holds a lot of promise for expansion.It offers enormous scope for ambitious young people

The main goal of this study is to determine the needs and wants of the targeted consumers,as well as their preferences for event management .it discussed a variety of topics that will have an impact on consumer perception of event management .the study's conclusion might serve as a starting point for new businesses entering the market.according to the findings , most of the respondents are from rural areas.

The aim of the study was to identify the facilities/services provided ,accessibility of the event , how far people are using it etc.. From the study it is exposed that consumers are aware of event management and it is accessible in rural areas.the consumers are mostly willing to use traditional patterns than modern ones.and majority of the respondents are preferring event management over personal management for various reasons.

12. REFERENCES

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A STUDY ON PROBLEMS AND CHALLENGES FACED BY FARMERS IN SALE OF AGRICULTURE PRODUCT WITH SPECIAL REFERENCE TO RURAL AREAS IN COIMBATORE DISTRICT

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ABSTRACT

Agriculture is a vital sector that involves the cultivation of soil, raising livestock, and producing food products for human consumption. It has played a crucial role in the growth and development of human civilization, leading to population growth, urbanization, and trade. In India, agriculture contributes significantly to the country's GDP and provides employment to a large portion of the population.

1. INTRODUCTION

Agriculture is the art and science of cultivating the soil, growing crops and raising livestock. It includes the preparation of plant and animal products for people to use and their distribution to markets. Agriculture is the practice of cultivating plants and livestock in order to provide facilities the human beings. Agriculture is an important sector of Indian economy as it contributes about 17% to the total GDP and provides employment to over 60% of the population. Farming enabled people to grow all the food they needed in one place, with a much smaller group of people.

2. STATEMENT OF THE PROBLEM

1. Farmers now a days facing the mode of payment made by the people by buying agricultural product in the market. So, this study will try to solve mode of payment problem in sale of agriculture product in market.
2. Unavailability of water supply can damage the agricultural product in the land.
3. Unless changes in the climate condition can cause damages to the agricultural product.

3. OBJECTIVES OF THE STUDY

- To study the demographic profile of the sample respondents in Coimbatore district.
- To identify the level of farmers awareness towards agricultural products.
- To offer suggestion based on the findings of the study.

4. SCOPE OF THE STUDY

The study covers the awareness level of the farmers in sale of agriculture product. Usage of the agriculture products in rural areas. Factors influencing the agricultural

products in rural areas. Level of satisfaction of the farmers in sale of products in the market place. This research would help to re-examine and make changes in the present production and marketing strategies in order to improve the purchase behaviour and satisfaction the farmers in sale of agriculture products in market place. The scope of the study is limited to the sale of agriculture product in Coimbatore district. The outcome of the study is undoubtedly emphasize good growth in future.

5. RESEARCH METHODOLOGY

Research methodology is a way of systematically solve the research problem. It specifies the approach that the researcher intends to use with respect to propose the study scientifically. The scope of the research methodology is wider than that of research methods, thus we talk of the research methodology, we use the context of our research study and explain why we are using a particular methods or technique.

Source of Data

- ❖ **PRIMARY DATA** -The primary data has been collected by preparing structure questionnaire method has been followed to ascertain the information from the farmers.
- ❖ **SECONDARY DATA** - In the present study the secondary data had been collected from different sources of literatures like Articles, Journals, Wikipedia, Related Websites.

Research design

The research design used for the study is descriptive in nature. The basic objectives of this study are to sort out the problems and challenges faced by farmers.



Sample Size

The sample of 120 respondents is chosen from the study.

Sample technique

For the purpose of analysis, the data has been collected from 120 farmers from sample respondents in Coimbatore district.

Area of the study

The study has been undertaken only in Coimbatore district.

Tools used

- Simple percentage method
- Rank analysis method

6. REVIEW OF LITERATURE

Singh et al. (2021): Analysed the effect of constraints, technical gaps, and improved production practices on green gram yield and economics in arid regions. The research was carried out at a farmer's field in Rajasthan's Jodhpur area. The majority of respondents cited low crop returns, high input

costs, a lack of knowledge, and the processing industry as major constraints.

Verma et al (2021): Conducted a study on Constraints perceived by the members and non-members towards the functioning of FPO-AKPCL in Kanauji District of Uttar Pradesh. A total of 20 members and 40 non-member farmers were randomly sampled in the functional area of FPO-AKPCL to delineate the constraints faced by them.

Pandey et al. (2020): Identified factors influencing farmers buying behaviour for hybrid seeds of paddy in 6 districts of Bihar stated that majority of the respondents were aware of the hybrid seeds of paddy due various promotional activities. Factors like seed quality and brand/dealer loyalty were found to be most effective in influencing farmers buying decision.

Fidowaty, T & Supriadi, R. (2020): Identified various schemes of government to improve the financial situation of farmers through their empowerment by issuing e-commerce innovations has not made any impact. Many farmers are still unable to effectively use e-commerce and related technology.

7. ANALYSIS AND RESULT

7.1 Percentage Analysis

Table 1
Demographic Variable of the respondents

Factors	Options	No. of Respondents	Percentage (%)
Gender	Male	61	51%
	Female	59	41%
Monthly Income	Below ₹10,000	37	30.8%
	₹20,000-₹35,000	34	28.3%
	₹36,000-₹40,000	32	26.7%
	₹41,000-₹49,000	11	9.2%
	More than 50,000	6	5%
Education qualification	Below 10th	35	29.9%
	12th pass	31	25.8%
	Graduate	31	25.8%
	Post graduate	15	12.5%
	Others	8	6.7%
Age	Under 30 years	29	24.2%
	Upto 31-49 years	23	19.2%
	Upto 50-59 years	36	30%
	Upto 60-69 years	22	18.3%
	Above 70 years	10	8.3%
Marital status	Married	98	81.7%
	Unmarried	22	18.3%
Source of income	Agriculture	55	45.8%
	Service	30	25 %
	Business	28	23.3 %
	Others	7	5.8%
Nature of the family	Joint family	42	35%
	Nuclear family	78	65 %
Member in family	Less than 3	19	15.8 %



	Members 3-4	52	43.3%
	Members 5-6	39	32.5%
	More than 6 members	10	8.5%
Farmers experience in agriculture	Below 3 years	23	19.2%
	3-4 years	28	23.3%
	5-6 years	41	34.2%
	Above 6 years	28	23.3%

Table 2
Respondents' behavior toward various function of Activity in producing agriculture products

Factors	Options	No. of Respondents	Percentage (%)
Involvement in agriculture	Farmer	47	39.2%
	Processor	46	38.3%
	Backyard gardener	17	14.2 %
	Others	10	8.3 %
Crops grown on land	Maize	15	12.5%
	Rice	26	21.7%
	Wheat	31	25.8%
	Vegetables	32	26.7%
	Others	16	13.3 %
Market of crops	Direct	26	21.7%
	Through middle men	44	36.7%
	Through agencies	24	20%
	Others	26	21.7 %
Source of water supply	Private well	30	25%
	Dam	40	33.3%
	Stream	38	31.7 %
	Others	12	10 %
Preserve soil fertility	Fertilization	33	27.5%
	Crop rotation	48	40%
	Intercropping	26	21.7%
	Others	13	10.8%

Table 3
Respondents' behavior toward various function of Activity in producing agriculture products

Factors	Option	Respondents	Percentage (%)
Seeds used for farming	Traditional seed	26	21.7 %
	Hybrid seed	47	39.2%
	Foreign seeds	15	12.5%
	Others	32	26.7%
Frequency of agriculture products	Every day	23	19.2 %
	Several times a week	47	39.2%
	Once a week	21	17.5%
	Once in a month	29	24.2%



Control of weed	By burning plantresidues after harvesting.	19	15.8 %
	By grazing through animals.	38	31.7%
	By mechanical weeding.	40	33.3%
	By crop rotation	23	19.2%
Usage of fertilizer for farming	Organic fertilizers	24	20%
	Chemical fertilizers	49	40.8%
	Both	38	31.7%
	Others	9	7.5%
Payment of electricity bill	By meter	18	15%
	Through a certain fixed amount	37	30.8%
	Have never paid	38	31.7%
	Others	27	22.5%

Percentage analysis deals with the demographic factors, respondent's behavior towards various activity of farmers in production of agriculture products. It can be inferred from the above Table 1 shows the most (51%) of the respondents are Male, The most (30.8%) of the respondents are Below ₹10,000., The most (29.2%) of the respondents are below 10th pass, The majority (30%) of the respondents are Under the age of 50-59 years, The most (81.7%) of the respondents are Married, The most (45.8%) of the respondents are agriculture, The most (65%) of the respondents are nuclear family, The most (43.3%) of the respondents are 3-4 members in family, The majority (34.2%) of the respondents are Under 5-6 years' experience in agriculture,

Table 2 shows That most (39.2%) of the respondents are farmers, The most (26.7%) of the respondents are growing vegetables in their land, The most (36.7%) of the respondents are market their crops through middle men, The most (33.3%) of the respondents are supply water through dam, The most (40%) of the respondents preserve their soil through crop rotation,

Table 3 shows that most (39.2%) of the respondents used hybrid seeds for farming, The most (39.2%) of the respondents are consume agriculture products several times a week, the most (33.3%) of the respondents are control weeds by mechanical weeding, The most (40.8%) of the respondents used chemical fertilizers for farming, The most (31.7%) of the respondents have never paid their electricity bill.

7.2 Ranking analysis

Table 4
 Showing awareness level of the agriculture products

FACTORS	I	II	III	IV	V	VI	VII	VIII	IX	X	TOTAL	RANK
UPI Payment?	5 (10) 50	5 (9) 45	28 (8) 224	2 (7) 49	24 (6) 144	9 (5) 45	9 (4) 36	11 (3) 33	21 (2) 42	6 (1) 6	674	V
Govt plans and policies	5 (10) 50	24 (9) 216	18 (8) 144	6 (7) 42	13 (6) 78	15 (5) 75	9 (4) 36	16 (3) 48	12 (2) 24	2 (1) 2	715	II
Types of pesticides?	14 (10) 140	22 (9) 198	10 (8) 80	3 (7) 21	10 (6) 60	16 (5) 80	18 (4) 72	12 (3) 36	7 (2) 14	8 (1) 8	709	III
Fund given by the Govt?	18 (10) 180	10 (9) 90	14 (8) 112	4 (7) 28	17 (6) 102	19 (5) 95	9 (4) 36	19 (3) 57	8 (2) 16	2 (1) 2	718	I
Current market price?	8 (10) 80	12 (9) 108	14 (8) 112	10 (7) 70	12 (6) 72	13 (5) 65	16 (4) 64	13 (3) 39	12 (2) 24	10 (1) 10	644	VIII
Agricultural loans	11 (10) 110	16 (9) 144	11 (8) 88	8 (7) 56	10 (6) 60	15 (5) 75	11 (4) 44	15 (3) 45	18 (2) 36	6 (1) 6	664	VII



Destroyed by animal	9 (10) 90	13 (9) 117	20 (8) 160	4 (7) 28	10 (6) 60	10 (5) 50	16 (4) 64	10 (3) 30	16 (2) 32	7 (1) 7	638	IX
Product theft	10 (10) 100	15 (9) 135	13 (8) 104	11 (7) 77	4 (6) 24	14 (5) 70	9 (4) 36	14 (3) 42	17 (2) 34	6 (1) 60	628	X
Climate condition	18 (10) 180	14 (9) 126	17 (8) 136	4 (7) 28	9 (6) 54	7 (5) 35	13 (4) 52	7 (3) 21	13 (2) 26	8 (1) 8	666	VI
Schemes provided by the Govt	20 (10) 200	18 (9) 162	7 (8) 56	5 (7) 35	13 (6) 78	12 (5) 60	2 (4) 8	12 (3) 36	14 (2) 28	16 (1) 16	679	IV

Table 4 shows that Fund given by the government due to cause of flood in land I, Government plans and facilities II, Different types of pesticides III, Schemes provided by the government IV, UPI Payment V, adopted to the change of climate condition VI, Agricultural loans provided by the government VII, Daily change of current market price VIII, Agricultural product destroyed by the animal IX, Product theft by people near X.

8. SUMMARY OF FINDINGS

On Percentage analysis, the following results were obtained.

- The most (51%) of the respondents are Male.
- The most (30.8%) of the respondents are Below ₹10,000.
- The most (29.2%) of the respondents are below 10th pass.
- The majority (30%) of the respondents are Under the age of 50-59 years.
- The most (81.7%) of the respondents are Married.
- The most (65%) of the respondents are nuclear family.
- The most (43.3%) of the respondents are 3-4 members in family.
- The majority (34.2%) of the respondents are Under 5-6 years' experience in agriculture.
- The most (39.2%) of the respondents are farmers.
- The most (45.8%) of the respondents are agriculture.
- The most (26.7%) of the respondents are growing vegetables in their land.
- The most (36.7%) of the respondents are market their crops through middle men.
- The most (33.3%) of the respondents are supply water through dam.
- The most (40%) of the respondents preserve their soil through crop rotation.
- The most (39.2%) of the respondents used hybrid seeds for farming.
- The most (39.2%) of the respondents are consume agriculture products several times a week.
- The most (40.8%) of the respondents used chemical fertilizers for farming.
- The most (31.7%) of the respondents have never paid their electricity bill.

On the basis of ranking analysis, the following result is obtained

- The Most of the respondents ranked Fund given by the government due to cause of flood in land (718) I.

9. SUGGESTIONS

After conducting the survey and knowing the market, I realized that, the data provided, it can be concluded that the majority of the respondents are male, married, and belong to nuclear families with 3-4 members. The majority of the respondents have less than 10 years of experience in agriculture, and most of them are farmers who cultivate agriculture and grow vegetables in their land using hybrid seeds and chemical fertilizers. The government's fund given due to floods in the land is ranked as the most important factor according to the farmers.

10. CONCLUSION

It has been observed that most of the farmers are satisfied with the supply of water provided by the government similarly of those farmers are dissatisfied with the supply of water. The main problem investigated by this study was the poor access of farmers with physical disabilities to agricultural extension and training agencies. The study's main objective was to identify and analyse the training and extension needs of farmers with disabilities. Modern agriculture uses planned technology and emphasizes management practices of conservation and renewability of resources.

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NUDGING FOR IMPROVED ACADEMIC PERFORMANCE AND MOTIVATION IN HIGHER LEARNING INSTITUTIONS

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ABSTRACT

Nudges, attempts to influence behaviour without forbidding any options or significantly changing the economic incentives of any options, have been applied to diverse issues such as sustainable consumption, e-commerce, and workplace goal-setting. Academic applications of nudges have grown, and a burgeoning attention on nudge applications in higher education is developing. In this paper, we describe our unique multidisciplinary approach, involving data analytics, qualitative research methods, and the Theory of Planned Behaviour, to developing nudges for improved academic performance and motivation at a non-residential university with a high proportion of part-time and mature students. Our paper focuses on the design and ongoing progress of nudge development. We end by exploring how our approach can serve as a template for other institutes of higher education wanting to develop and deploy nudges for better student outcomes.

KEYWORDS: *Theory of Planned Behaviour, Nudge, Retention*

INTRODUCTION

Behavioural insights, the application of behavioural science findings from multiple fields such as economics, psychology, sociology, and neuroscience (Ruggeri et al., 2021), have been used to nudge and alter patterns of behaviour relating to diverse issues such as sustainable consumption (Loschelder et al., 2019), e-commerce (Mathur et al., 2019), and workplace goal-setting (Weintraub et al., 2021).

Nudging, first defined as “any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives” (Thaler & Sunstein, 2008), have increasingly been deployed in academic settings.

A 2016 study found that text message nudges delivered to lower-income university students, providing them with simplified information, encouragement, and access to learning resources, led to improvements in students' first-year academic performance (Castleman & Meyer, 2016). Similarly, by nudging students toward their teaching and learning support resources, DeVry University increased the utilisation rate of their tutoring services, helped lower-performing students attained higher assignment grades, and reduced student withdrawals (Gartner, 2022).

Yet, nudging alone may not be enough. For one, it tends to have small effect sizes. One quantitative review (Hummel & Maedche, 2019) found a median effect sizes of 21%. Evidence suggests that people cannot be nudged into doing something they do not want (de Ridder et al., 2021) — that is, nudges cannot overcome strong preferences. Deeper, more longstanding behaviours or habits seem to also be

unaffected by nudges (Oreopoulos & Petronijevic, 2019; Venema & van Gestel, 2021)

To augment the effects of nudges, behavioural change theories, such as the Theory of Planned Behaviour [TPB] (Fishbein & Ajzen, 2011), is needed. TPB, with its emphasis on attitudinal, social norm, and self-efficacy beliefs is suited to addressing the varied issues affecting university students, such as financial strain, family commitments, time management, expected study load, and work commitments factors (Dewberry & Jackson, 2018).

TPB has been found to strongly predict students' intention to quit university (Dewberry & Jackson, 2018). A sizable 61% of variance in intention to quit university has been found to be accounted for by personal attitudes, subjective norms, and perceived behavioural control.

MULTIDISCIPLINARY APPROACH

Background

A multidisciplinary, mixed-method approach, involving data analytics, qualitative research methods, nudge theory and TPB, was chosen to develop nudges to pursue our two goals of 1) improving academic performance, and 2) reducing withdrawal rate among students at a university in Singapore.

The university is non-residential and caters to a high proportion of part-time and mature students who have to juggle family and work commitments alongside their education, and/or may have not been in formal education for prolonged periods. Naturally then, many students need help and support to perform better academically and persevere in their educational journey.



In this paper, we describe the problem discovery stage of our approach where we select, survey, and study students to define the problem and develop interventions and nudges. We employ a funnel approach, starting with larger samples before zeroing in on smaller groups with the more in-depth methods of focus group discussions, interviews, and case studies (*Figure 1*).

Data analytics

To select students to conduct research for problem discovery, a data analytics approach was used to analyse various student attributes, such as academic performance, and other relevant data attributes, such as years lapsed since prior education.

Decision tree algorithm – CHAID (Chi-square Automatic Interaction Detection) was used to construct decision trees to help with the selection of candidate student-clusters. CHAID is appropriate for the discovery of student-clusters as it considers the significant association between student attributes – recursively splits the tree into two or more branches – and eventually ending up with child branches that represent student-clusters that shares distinct characteristics.

Two decision trees were constructed. Decision Tree 1 deals with academic performance. Decision Tree 2 deals with student active/withdrawal status. *Figure 2* illustrates a decision tree being deployed – each child branch or node represents a student-cluster.

In one of the clusters for Decision Tree 2, the ratio of course taken to course withdrawal was a grouping characteristic for one of the nodes. Students in this node had withdrawn from between 18.5% to 34.7% of the courses taken. The decision tree also indicates that students in this cluster are likely to perform worse-off as compared to other student-clusters. Using this data analytics approach, we were able to understand the characteristics that may have contributed to academic underperformance and withdrawal from university, and further use this information to identify potential student-clusters of interest for the next phase of qualitative study.

Qualitative research methods

While the data analytics approach, and the use of the TPB (next section) allow the study of large groups of students, qualitative research methods allow for more in-depth exploration of issues. Focus group discussions, one-on-one interviews, and case studies of selected students are three qualitative methods chosen to provide depth in our problem discovery stage. A total of 24 focus group discussions and 120 interviews/case studies are planned.

Theory of Planned Behaviour

A three phrase (Epton et al., 2015) approach to the TPB (*Figure 3*) is chosen. In phase 1, important beliefs underlying intention to improve academically, and intentions to withdraw from university are identified. A target 100 students will be recruited to answer questions eliciting their behavioural beliefs (e.g., what are the advantages of improving academically), normative beliefs (e.g., which individuals or groups would disapprove of you withdrawing from university?), and control or self-efficacy beliefs (e.g., what

factors would make you more likely to improve academically?). Two independent raters will code and sort the participants' answers. Important beliefs will be taken to be those stated by at least 20% of the sample.

In phase 2, a target 1,000 students will complete a TPB survey based on the important beliefs identified in phase 1. For example, if "support from family" is a self-efficacy belief stated by more than 20% of phase 1 participant, participants in phase 2 will be asked to respond to the question "Support from family would make my improving academically..." using a semantic differential scale with "Less likely" and "More Likely" as opposing anchors. Phase 2 will establish, empirically, which beliefs significantly predict our target intentions and behaviours to 1) improve academically, and 2) withdraw from university.

Finally, in phase 3, another 100 students will be recruited to 1) generate arguments supporting our target behaviours, and 2) record short videos promoting such arguments. For example, a belief underpinning withdrawal from university might be that a degree may not help in career advancement. Phase 3 students will be asked to provide counterarguments to such beliefs (e.g., students might recall personal anecdotes of colleagues who advanced in their career after graduating from university). The use of such short video recordings is a form of a social reference nudge where behaviours are influenced and shaped by peers (Hummel & Maedche, 2019), as opposed to formal or authority figures such as university staff who may be perceived as threatening to their autonomy (Dewies et al., 2021).

DISCUSSION AND CONCLUSION

Students face multiple challenges in trying to perform academically, and in completing their academic journeys. These challenges are amplified for part-time and mature students who juggle other major life commitments. Seen in this light, it is no surprise that a majority of university students have been reported to consider withdrawing from university without completing their studies (Nieuwoudt & Megan, 2021).

Universities have a responsibility to support their students in their effort to perform academically and complete their degrees. In this paper, we described a multidisciplinary approach to problem discovery related to these twin goals. We explored how nudges alone may not be sufficient. To augment nudges, in-depth qualitative approaches, predictive data analytics, and multi-phase Theory of Planned Behaviour applications are required. We believe that our multidisciplinary approach can serve as a template for other institutes of higher education wanting to systematically discover problems related to student academic performance and degree completion, and develop and deploy intervening nudges. This is an ongoing project and refinements to our approach will validate its suitability as a template for wider application.

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APPENDIX

Figure 1

Funnel Approach to Problem Discovery

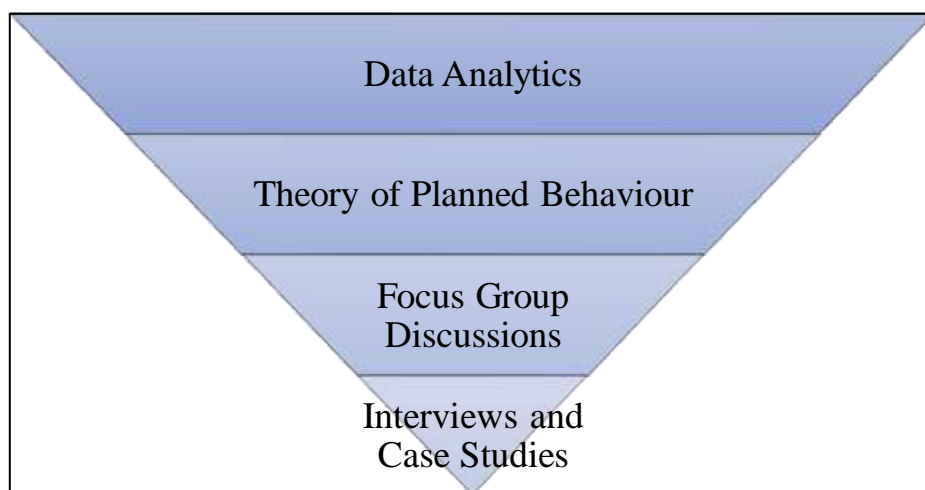


Figure 2

An Illustration of Deployed Decision Trees

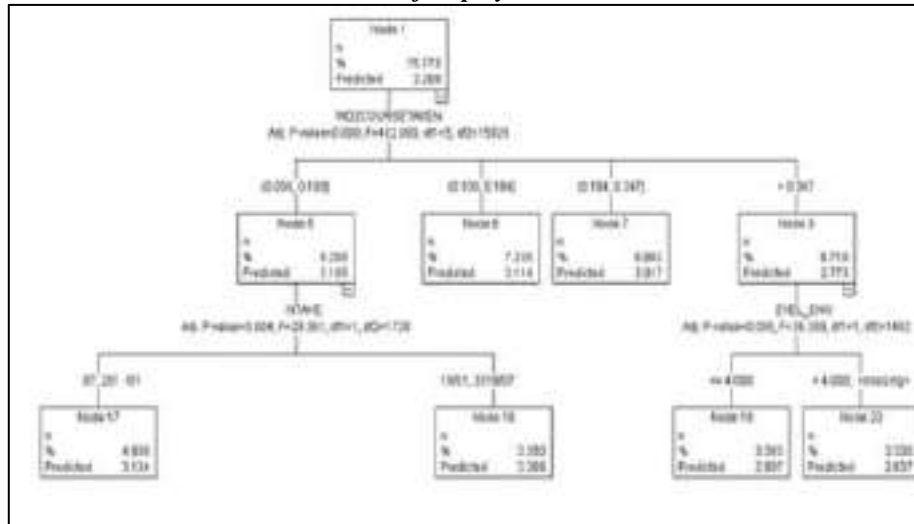
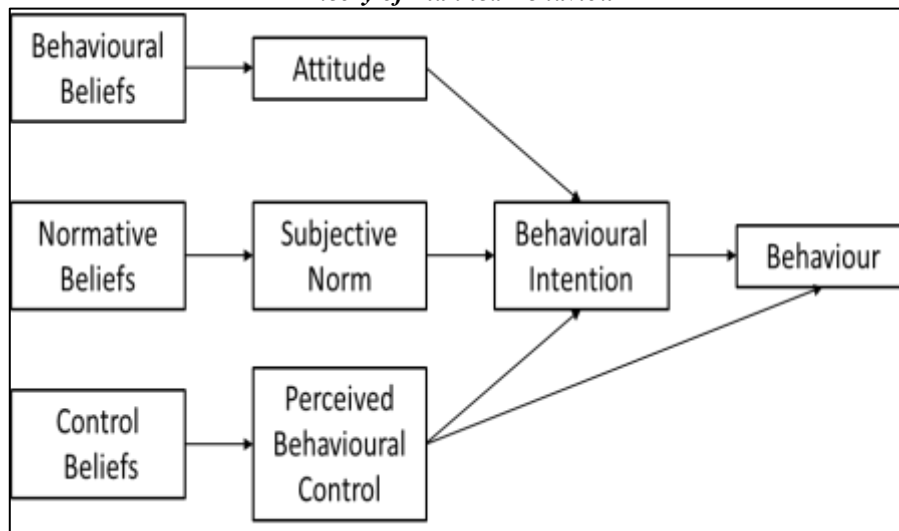


Figure 3
Theory of Planned Behaviour





AN ANALYSIS OF TIKTOK'S APP EFFECTIVENESS IN ENHANCING SPEAKING SKILLS IN 9TH-GRADERS' ENGLISH CLASSES FOR PALESTINIAN STUDENTS

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ABSTRACT

This qualitative study aimed to investigate the effectiveness of using TikTok as a platform to enhance speaking skills in English as a foreign language classroom. It was conducted on 9th graders in Palestine. The study involved 20 students from two schools in the West-Bank region of Palestine. The data collection process included classroom observations, semi-structured interviews, and observation checklist. The collected data were analyzed using thematic analysis. The findings of the study revealed that using TikTok in the classroom had a positive influence on students' speaking skills. Students reported feeling more motivated to learn English and engage in class activities in a fun way when TikTok was utilized as a teaching tool and have self-esteem in speaking the English language. The study also found that TikTok helped students improve their speaking, listening, and writing skills. The study highlights the potential benefits of TikTok for teaching English as a foreign language. The findings of this study can inform educators and policymakers in Palestine and other similar contexts about technology in language education. Furthermore, this study provides insights into students' perceptions and experiences regarding the use of TikTok in the classroom. This can help improve language teaching and learning effectiveness.

KEY WORDS: *TikTok, speaking skills, English as a Foreign Language.*

INTRODUCTION

The integration of technology into language learning has become a popular and effective method for educators worldwide. A growing number of English language learners, especially those learning English as a foreign language (EFL), have found that social media can be a useful tool for improving their English proficiency. In recent years, TikTok has gained worldwide popularity among young learners as a social media platform. EFL students' speaking and listening skills can be improved through the platform due to its popularity among young adults and teenagers.

Additionally, TikTok appeals to learners of all ages due to its simplicity, ease of use, and accessibility. Using TikTok improved EFL learners' speaking skills, vocabulary, and motivation, according to Chen and Huang (2021). Two groups of participants were divided into the study. Among the groups, TikTok is used as a supplement to regular instruction and traditional teaching methods. In the study, the group using TikTok as a supplementary tool showed significant improvements in speaking skills, vocabulary acquisition, and motivation. This was compared to the group that did not use the platform.

In another study by Al-Sawalha et al. (2020), TikTok was also found to improve the pronunciation skills of EFL students. 40 undergraduate EFL students participated in the study, with one group practicing pronunciation skills using TikTok and the other using traditional classroom instruction. As compared to the group that received traditional instruction, the group that used TikTok significantly improved their pronunciation skills. Teachers can use TikTok to improve their students' speaking and pronunciation skills by using this platform. Furthermore, TikTok may be an effective tool for improving EFL students' listening, speaking, and pronunciation skills in the long run, according to these studies. EFL teachers can use the platform to enhance students' language learning experience as the platform continues to grow in popularity among young learners.

TikTok As An Effective Platform To Teach English

Teenagers and young adults have become increasingly interested in TikTok, a popular short-form video-sharing app. In addition to its engaging and interactive nature, TikTok is a good platform for teaching English. Short videos can be customized to suit specific language learning goals, which can be created and shared via the app. By creating engaging and relevant content, EFL teachers can motivate their students to learn English.



TikTok's capacity to encourage authentic language use makes it a useful tool for teaching English, too. The software offers opportunities for EFL by allowing users to communicate with a global community of users.

in order for the students to practice their language abilities in authentic settings. Additionally, the app's AI makes recommendations for videos based on user likes and interests, which can expose EFL students to a variety of authentic language use in various circumstances.

TikTok's support for multimodal learning is yet another element that makes it a successful platform for English instruction. The features of the program enable users to mix audio, video, and text to produce interesting and educational content that can support language acquisition. To assist students, understand and practise new vocabulary or grammar structures, EFL instructors can use the app to make films that include visual aids like pictures or subtitles.

TikTok has the potential to be a very effective platform for teaching English as a foreign language, in light of the foregoing. It is the perfect tool for EFL teachers to employ to assist their students in developing their language abilities because of its engaging and interactive character, capacity to encourage real language use, and support for multimodal learning. It will be interesting to see how TikTok may be further incorporated into language instruction to improve the learning experience for EFL students as it continues to gain popularity.

How TikTok works

On the social media site TikTok, users may make and share short movies, which are typically between 15 and 60 seconds long. The app is free to download and use and is accessible on both iOS and Android smart phones.

TikTok is a highly flexible platform for artistic expression because to its video creation tools, which let users add music, text, and special effects to their films. The editing features of the software also allow for the cutting and splicing of clips, adjust video speed, and add filters to enhance the visual quality of the videos.

Users of TikTok have the option to take part in a variety of challenges and trends that are popular on the app in addition to browsing and creating content. Users are encouraged to make videos that adhere to a specific structure or style by participating in these challenges, which frequently have a particular hashtag or topic. Users can increase their visibility on the app and get new followers by taking part in challenges and trends.

Overall, TikTok is a preferred option for users all over the world due to its distinctive features and interesting content. People of different ages and backgrounds make up the app's user base, and usage of the app is exploding in popularity. In order to reach new audiences and interact creatively with their followers, businesses

and organizations are increasingly utilizing TikTok as a marketing tool.

Here are some ways to use TikTok for English language learning

TikTok videos can be utilized to learn new vocabulary words and perfect your pronunciation. Users can look for videos in the English language that concentrate on particular words or phrases and hear how they are pronounced by native speakers.

Practice your English conversational abilities by watching TikTok videos. English-speaking videos that users can make and share with other users in the comments section. This can boost self-esteem and increase English speaking fluency.

grammar concepts or create videos that demonstrate correct grammar usage. This can be a fun and interactive way to learn and practice grammar.

TikTok videos can be utilized to educate yourself about the cultures of English-speaking people. Users can browse videos that highlight various facets of culture, including music, fashion, and gastronomy. This can enhance students' comprehension abilities and help them better understand communities that speak the English language.

Overall, using TikTok to learn and use English may be entertaining and engaging. Students can communicate with native speakers and other students from across the world by using the app's video creation and sharing features, which will help them develop their language skills and confidence. Students can use TikTok as a potent tool to develop their English conversational abilities.

Here are some ways that TikTok can help

Short-form videos: TikTok's short-form video format is perfect for students looking to practice their conversational skills in English. By creating short videos in which they speak English, students can focus on improving their pronunciation, fluency, and sentence structure.

Language Challenges: TikTok's language challenges can be a fun way for students to practice their English conversation skills. These challenges often involve creating short videos in response to prompts or themes, such as describing a favorite hobby or talking about a recent travel experience. Students can use these challenges as an opportunity to practice their English and receive feedback from other users.

Native Speaker Videos: TikTok's large and diverse user base includes many native English speakers who create videos on a wide range of TikTok videos can also be used to practise grammar in English. Users can make films explaining various subjects. These films allow students to watch and participate, honing their listening abilities and exposing themselves to other accents and



dialects. These videos might serve as a guide for how they should practise having conversations with others.

Interactive Learning: TikTok's interactive elements, such as the capability to comment on and respond to other users' videos, can help build a community of language learners who can support one another in honing their English conversational abilities. Aside from hearing comments from native speakers and other learners, students can participate in discussions and ask questions.

TikTok can reportedly boost students' interest and involvement in language learning, which can result in better communication skills, according to a number of studies. According to a research by Chen and colleagues (2020), TikTok helped students develop their English pronunciation, intonation, and rhythm. Similar to this, Gao and colleagues (2020) found that by offering a variety of real-world language materials, TikTok can aid learners in improving their speaking and listening abilities.

Additionally, a number of studies have shown how TikTok helps kids develop their creativity and critical thinking abilities. For instance, Chen and Chen's (2020) study discovered that TikTok may be used as a platform for students to make their own videos, fostering their originality and creativity. TikTok may be utilised to improve students' critical thinking abilities by motivating them to examine and analyse the language used in the videos, according to another study by Saeed and colleagues (2020).

Furthermore, the reviewed studies have also emphasized the importance of incorporating TikTok in language classrooms as a means of promoting cultural awareness and understanding. Furthermore, TikTok can be used to introduce pupils to various cultures and viewpoints, which can improve their comprehension of the English language and culture, according to a study by Al-Qarni and colleagues (2020). Similar to this, a study by Abuhmaid and Tarhini (2020) found that TikTok can help students become more interculturally competent and improve their capacity for effective communication with people from other cultures and languages.

TikTok may also be used as a platform for interactive and collaborative learning, according to several studies. TikTok can facilitate peer learning and peer feedback, which can encourage active learning and social engagement among students, according to a study by Luo and Huang (2020). Additionally, a study by Alsharif (2021) found that by enabling students to collaborate on video projects and share ideas and feedback, TikTok can be utilised to improve group collaboration and project-based learning.

Additionally, some research has highlighted TikTok's contribution to learner autonomy and self-directed learning. TikTok can be utilised as a tool for learner-centered instruction, which can provide students the power to take charge of their learning process and advance their language abilities at their own

speed, according to a study by Khazaei and colleagues (2021). In a different study, Alqahtani (2021) hypothesised that by encouraging students to record and assess their own language performance on TikTok, it is possible to foster self-reflection and self-assessment.

Additionally, some research has highlighted TikTok's contribution to learner autonomy and self-directed learning. TikTok can be utilized as a tool for learner-centered instruction, which can provide students the power to take charge of their learning process and advance their language abilities at their own speed, according to a study by Khazaei and colleagues (2021). In a different study, Alqahtani (2021) hypothesized that by encouraging students to record and assess their own language performance on TikTok, it is possible to foster self-reflection and self-assessment.

THE SIGNIFICANT OF THE STUDY

The importance of this study is in examining the potential use of TikTok as a tool for improving conversational abilities in EFL classes. Finding creative and interesting ways to enhance speaking skills is the key because they are crucial for language learners. TikTok is a promising tool for language acquisition because of its appeal to millennial, its short video style, and its capacity to deliver real language input. Its efficacy in the particular setting of EFL courses needs to be examined, nevertheless.

This study can shed the light on how TikTok can be effectively used in EFL classes, particularly to improve conversational abilities. It can also assist educators in creating TikTok-based activities that encourage students to engage in active and genuine discussion. The research can also add to the body of knowledge on technology's role in language learning and offer recommendations based on solid data. The results of this study can also stimulate further investigation into TikTok's potential as a language learning aid, particularly in the area of speaking skills.

THE STATEMENT OF THE PROBLEM

In spite of the importance of effective speaking skills in learning a foreign language, many English learners still have difficulty developing their speaking, listening, writing, and reading abilities. EFL students' communicative competence has not been enhanced by traditional methods of teaching. As a result, digital technologies have become increasingly popular as alternative instruction tools. A popular app among young people all over the world is TikTok, an app that allows you to share short-form videos. The effectiveness of TikTok in enhancing speaking skills among EFL learners has not yet been extensively studied, despite its potential benefits. Thus, this study examines whether using TikTok as an effective platform can enhance EFL learners' speaking skills.

THE PURPOSE OF THE STUDY

The influence of using TikTok as a platform to improve speaking abilities in English as a Foreign Language (EFL) classrooms for



9th graders in Palestine is investigated in this qualitative study. The following research issues are addressed by the study:

1. What are the perceptions of 9th-grade EFL students in Palestine regarding the use of TikTok as a platform for enhancing speaking skills in the English language?
2. What are the attitudes of EFL teachers in Palestine towards integrating TikTok in their classroom practices to enhance students' speaking skills in the English language?
3. What are the challenges faced by both EFL students and teachers in Palestine in using TikTok as a platform for enhancing speaking skills in the English language?

By addressing these research questions, this study aims to provide insights into the effectiveness of using TikTok as a tool to enhance speaking skills in EFL classrooms for 9th graders in Palestine, and to identify potential challenges and solutions for integrating TikTok in EFL classroom practices. The findings of this study could contribute to the development of effective teaching strategies and practices that can facilitate the learning of speaking skills in the English language for EFL students in Palestine.

METHODOLOGY AND DISCUSSION

The researcher made a checklist of observations to track the reaction of the ninth-grade students on the influence of using TikTok in the English language classes. Semi-structured interviews also were conducted with the students to find out their opinions from using such a platform in the educational process. Below we explain some discussion of the responses that the researcher reached as follows.

The majority of the participants indicated that there are many perceptions of 9th-grade EFL students in Palestine regarding the use of TikTok as a platform for enhancing speaking skills in the English language such as increasing self-esteem to speak English as one of the students indicated that he feels more comfortable in

speaking English in front of his classmates. as he indicated in this quotation "I feel more confident to speak English in front of my friends in my class". Furthermore, another student said that the TikTok app is fun and enjoyable as he indicated in this quotation "I feel very interested in speaking the English language in a fun way and I enjoy it". Furthermore, TikTok has a favorable impact on educational growth, making it suited for online learning and enhancing student communication aspirations. So there are many positive attitudes of EFL teachers in Palestine toward integrating TikTok into their classroom practices to enhance students' speaking skills in the English language. Thus, there are various drawbacks to the sites, including user conduct, inadequate infrastructure, and the low quality of the Palestinian Internet network. Both EFL students and teachers indicated that Palestine encounters numerous obstacles when using TikTok as a tool to improve speaking abilities in the English. Furthermore, one of the students said that He enjoys using the TikTok app, but the internet in Palestine is extremely unreliable as he said in this extract "I like to use TikTok app but the internet work in Palestine is so weak".

Participants

The participants in this study were EFL learners in 9th grade in 2 government schools in Palestine. A total of 20 students were interviewed.

Materials

The materials used in this study include smart phones, the TikTok application, and the observation checklist table. The TikTok application will be installed on the smart phones.

DATA ANALYSIS

The data collected from the semi-structured interviews. Thus, the observation checklist table used to qualitatively analyze the experimental group's videos to determine the effectiveness of using TikTok in EFL classes to enhance conversation skills.

NO.	Observation Criteria	Yes	No
1	The students actively engage in TikTok-based activities		
2	Students demonstrate improvement in their English speaking skills		
3	Students participate in collaborative activities using TikTok		
4	Listens attentively to classmates and teacher speaks clearly and audibly		
5	Students show enthusiasm towards learning English through TikTok		
6	Students feel more confident in their ability to communicate in English		
7	The teacher provides constructive feedback on students TikTok videos feedback on student's TikTok videos		
8	TikTok activities are integrated into the EFL curriculum		
9	Students are able to express themselves better in English after using TikTok		
10	The teacher regularly assesses student progress with TikTok activities		



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QUIET QUITTING IN THE EDUCATION SECTOR: ENUMERATION OF THREE CASES

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ABSTRACT

This is a case study on quiet quitting which has become a talking point these days. The three cases in this presentation explain the practice of Quiet Quitting by three teachers at different age levels. Purposely selected three subjects from education institutions in India who practices quiet quitting represent three categories of teachers, beginner, midlevel and senior. The subjects indulge in Quiet Quitting for various reasons in their career. The results show that the phenomenon is not new in the education sector. It is an age-old practice for many reasons, though not named as quiet quitting. The study also evaluates the positive and negative effects of quiet quitting.

KEY WORDS: *Quiet quitting, HR, higher education institution, teachers, issues of teachers*

INTRODUCTION

Quiet Quitting is a popular discussion point in newspapers, magazines, and websites after a TikTok video by Clayton Farris became viral (Krueger, 2022). Though the government blocked TikTok in India on June 29, 2020, the internet is filled with articles from employers, employees, and HR personnel talking about quiet quitting, explaining the positive and negative things. Quiet Quitting sounds like an employee resigning silently or disappearing without the proper information. It refers to a work culture of maintaining a minimum to retain the job with less psychological involvement; it's an effective alternative to resigning and sitting unemployed (Klotz & Bolino, 2022).

Work from home (WFH), which became popular after the pandemic, changed the nature of the job and work culture. During the COVID-19 pandemic, WFH was a legitimate practice with little supervision from the employer. To salvage the situation, many employers initiated unannounced salary cuts, non-payment of salary, and termination of employees. This massive misuse of labour laws and ignored employee well-being caused havoc in many families (Sharma, 2020). To overcome this sad situation, many employees embraced moonlighting. Moonlighting is working at many places, for an extra income, without telling the primary employer.

As WFH ended, many employers and organisations felt that moonlighting hinders employee commitment and productivity. Vikram Shroff of Global Law Firm explains, "in full-time employment, the employee is expected and required to spend his entire working time, efforts and energy for the employer interests" (Yadav, 2022). Infosys, a software company in India, banned 'moonlighting' among its employees (Oberoi, 2022). Wipro Chairman Rishad Premji called it cheating, whereas Tata Consultancy Services (TCS) labelled it as 'unethical' (Ghosh, 2022). However, Swiggy, an

online food delivery chain, allowed its employees (Singh, 2022).

After the pandemic, many competent employees looked for healthier, flexible working conditions, better pay benefits, and career advancement opportunities, which led to 'the great resignation'. A recent survey by MIT Sloan identified the following as predictors of the great resignation: a) toxic work culture, b) deprived job security, c) innovation that requires more effort, d) failure to recognise employee performance, e) employer's poor response during COVID situation (Sull, Sull, and Zweig, 2022). The survey further identified the toxic culture of an organisation as the main factor pushing for resignation. Less respect for employees, unethical practices, and treating high-performing employees on par with laggards added fuel to employee resignation. Menon (2021) suggests that it is time for management to self-reflection to evaluate the style of functioning and create a tailored retention strategy.

On the other spectrum, the practice of quiet quitting has become a mental health saver for many employees from this toxicity. Quiet Quitting is not quitting the job per se, rather an employee follows work-to-rule, and does the bare minimum to fetch a monthly salary. To avoid these burning current issues, many global organisations make jobs more appealing (Darrell, 2022; Wann, 2022). However, as many HR personnel identify, these promises of employers remain in papers, not in practice. Kashyap (2021) quotes Priyadarshini (former CHRO, Jindal Stainless) that many companies promise big bonuses and variables and fail to deliver those promises and the employees feel cheated; employees do not trust the employer. Quiet quitting is a kind of revenge an employee exhibits for various inhuman organisational actions (Mearian, 2022). Quiet Quitting could be a mental health saver from workloads, pathetic low pay, lack of incentives



and toxic workplace culture (England, 2022). However, some psychologists and HR specialists' opinion that if an employee is not performing due to overwork or stress, quiet quitting seems to be a solution, but it is an obstacle to career progression for a long time (Kaplan, 2022).

Quiet quitting is not something new, not invented or practised after the pandemic; it is not the problem of Gen Z, as it is projected; every organisation had it before and practised by many employees for various reasons. It has been called '*work to rule*', '*acting your wage*', '*clock-watching*' etc. Sometimes organisations that plan to grow or change into professional organisations with new work cultures practise voluntary retirement to weed out these deadwood employees.

In the name of the pandemic, just like the corporate companies, the educational sector also face problems. Many teachers became victims of unanticipated salary cuts and termination of employment, all in the name of COVID-19. On the contrary, teachers who enrolled for part-time PhDs converted to full-time without informing or getting consent from the management. Online teaching assignments at many places become common practice among many teachers. Though media often projects issues in the IT sector, the equally affected educational sector is seldom mentioned. This case study explains Quiet Quitting in the educational sector, studying three employees and evaluating the positive and negatives of each case.

OBJECTIVES AND METHODOLOGY

This Case Study purposively selected three private college teachers from different parts of India, who are practicing quiet quitting in different ways, for various reasons, at different stages of their jobs. The authors consulted an educational psychologist and validated the case reports. Further, quiet quitting of the three subjects were analysed critically and evaluated.

CASE PRESENTATION

Case One: The subject (Mr. X) is a 25-year-old NET qualified Assistant Professor. The subject is an unmarried male. His father was a retired schoolteacher and his mother a homemaker. He is the last child in the family; his two female elder siblings were married. His mother runs a small-scale business by raising poultry and pasture few goats. His father, while he was working as a schoolteacher, was a dedicated and committed man that earned him special respect in the village. This inspired Mr. X to choose this career.

After the NET qualification, Mr. X got a job in a private college, some 25 KMs away from his hometown. He stayed in a private apartment close to the college. During weekends and holidays, he visits his family in his newly bought motorcycle. Mr. X enjoyed the job, and it was uneventful in the first year. In his own words, "I was hard working. I am eligible to avail one casual leave every month, but I never utilised. As per the contract, if no casual leaves are taken, incentives will be given at the end of each academic year. This motivated me not to avail any casual leave. I attended one international conference and published one paper. The management gave me permission to attend the conference,

but politely told that only two days are allowed in an academic year. On few occasions, I took extra classes to encourage the slow learners. I was actively involved in activities, though it was not mandated. The management congratulated me privately few times for the dedication I showed at this young age. Though some senior teachers who work in the institution for many years advised me not to involve too much, I did not like their comments on my commitment and most of the times avoid them. When the second year started, there was a tremor waiting for me in the form of pay-increase".

"The pay rise for all, irrespective of their performance, was 175 rupees. While announcing the pay raise, the management insisted that there is no partiality, and the institution maintains the policy that all employees are equal. This so-called pay-increase and the so-called non-partial attitude of the employer made a dramatic impact in my personality that I adopted the style of doing '*minimum at work*' from the second year and started searching for a better organisation".

"My father who noticed the changes in my behaviour enquired many times with apprehension. I hid everything about my career, hard work, expectations, and the reward. I overheard my mother telling my father that I may be in love with some girls. When I heard that, I cried alone thinking about my fate. Pay-increase was only an annual ritual. Though contract says that the performance of the employee will be rewarded in the annual increment, nothing was seen in reality. The incentives that I am eligible for not availing any casual leave was not there. No incentives for publication or any hard work. I approached the management regarding the casual leave incentives, the management gleefully told the annual increment given to me includes that also. When I talked to my colleagues about this issue seriously, they laughed casually. They further commented that this is the secret of many employees holding-on to the job for many years without any productivity or performance. Many seniors are aware of this, and it is a haven for lazy people. If the coffer is filled, the management is happy. I learned many new things about organisational culture after this eye-opening incident. As per the seniors, they know very well that they cannot compete with other performing employees or will not be eligible for any competitive jobs. So, the performing employees either leave the institution or soon adopt the lazy work culture of the institution".

"My decision to leave the institution came to a halt because of the pandemic. During the pandemic, salary reduction and non-payment of salary were common norms in the workplace. When normalcy arrived this academic year, I started to apply for new jobs. Since I am a beginner, I find it hard to compete with some senior employees who attend interviews".

"My decision for non-performance has nothing to do with my workload. My workload has never affected my life or family involvement. I have no complains that I do not get time to relax or exercise. All my behaviour started after seeing the greedy, inhuman, money-mongering attitude of the management and, the unethical practices. The institution has no desire to come out of these shackles. In short, education today is a money-making business".



“I know, I must accomplish a lot, a long way to go before I grow professionally. This non-performing lifestyle is not permanent. This is not my real personality and not my real choice. I am aware, if this lazy work culture continued for a longer period, it would affect my personal, professional development. I am even afraid that it might become my lifestyle, if I adopt this culture for a longer period. I realised now that I am a fool and try to do many things in a wrong place. I regret that I joined this institution at the beginning of my career”.

Case Two: The subject (Mrs. Y) is a 49-year-old female who works in a college for nearly two decades. Mrs. Y is married and have school going children. Her husband is a government employee and economically well off. Though she worked two years in a government college on a temporary basis, she took this fulltime job after the completion of her Doctorate. Since she is the senior most employees in the institution, the management is very fond of her. Since she does not have the equalling API score under UGC norms for the Principal, she is not appointed. However, couple of times the management promised at least a vice-principal post, it did not materialise due to reasons the subject is not very clear. A good number of employees admire her thinking that her closeness to the management would fetch them some favour. Her admiration for the management made her the most admired employee in the campus and, many teachers cling around her, some even ready to slave her.

Mrs. Y looks at her job as a mere decoration. She does her minimal works by going to class and giving marks to the students generously. She is not bothered anything about her personal and professional growth. According to her, personal growth means living happily with the co-workers and getting the monthly salary; and professional growth means the management make more money. There is no difference, according to her, between a school and college teaching. Since she has a PhD, she thinks that it is sufficient to be college teachers.

Mrs Y is happy that the management is not bothered about quality education. She has habituated to this life of minimal work culture and remains happy, content, and above all in the good book of the management. She has created her own comfort zone in the teaching as well as organisation. She does not want to apply for other jobs. During one annual Faculty Development Program, some experts from outside talked about the need for organising conferences, insisted on the participation of faculty members in international conferences, seminars, and the need for personal research and other growth in the Higher Education. After listening to the talk, Mrs. Y wondered whether the talk is relevant or such things are needed for a teaching profession in the college. She knows well that the school like culture in the college is the secret of many teachers cling on to this institution for many years. She admires the management for being magnanimous to understand the problems of the employees, especially the regular needs for leave and absences or late to manage many other family related concerns. They encourage the employee to take leave whenever it is needed so that they can attend their family concerns.

When few new employees talked about the poor infrastructure in the college and the non- progressiveness of the college that becomes a hindrance for quality education, she could only laugh. As far as infrastructure is concerned, she justifies the poor lab facilities and explains that it serves the employer, employee, and the students in many ways. 1) The management need not invest too much money to buy expensive equipment; 2) since less equipment are available in the lab, a teacher can teach limited number of experiments that reduces the workload; 3) since few experiments are taught, students can easily learn them and score high marks. Mrs. Y never realised that this concept spoils the life of future generation as well as the society. In her own words, “As an employee, I fulfil the requirement of my job so that I get my salary; I don’t bother about annual pay hike or incentives. If the management earn more money, sure they will share it with the employee in the form of increment. How can an employee expect salary hike every year when the management does not earn enough profit. If I am paid my salary and my job is guaranteed in the college, I am happy. I try my best to be in the good books of everyone”.

Things changed in the last few years. A new Principal took charge insisted on the performance of the employees, both personal and professional. It was a strong jolt for Mrs. Y, as she spends years of non-performance, which was favoured by the management too. She was even sceptical about the success of the new Principal in implementing many quality items in the college. She is confident that the management will not change as far the reforms the new principal is concerned; maximum, the Principal can ask the employees to perform and work hard. She had few conversations with the management and ventilated her displeasure about the changes the new principal introduced that spoils the smooth sailing of the college. Some senior teachers who were well versed in non-performance and laziness left the institution. She pointed out this to the management few times casually. Though the management did not say anything openly, she understood that they too are not happy with the principal. Few times, she had the dilemma of leaving the institution because she was often targeted by the new Principal. After a brief conversation with one of the management members, she put aside the concept of leaving the institution. Instead, she adopted a new job culture to adjust to the situation.

She befriended one of her department mates to add her name in her publication as the co-author. She also asked another friend from another institution to add her name in another paper. Thus, for the first time in her teaching career she has imprinted her name in the list of publications. This shortcut method proved to be very effective. Wherever she is a committee member, she sees that there is a dynamic assistant who does the job so that her presence is felt as an active employee. She volunteered activities where without much efforts and time she can organise few activities. Now she is very comfortable to survive the storm of changing work culture introduced by the new principal without much stress and efforts. However, her concept of minimal performance remains unaltered, and she knows well that the changes introduced by the new Principal will not continue for a long



time. Recently she heard the happy news that the contact period of the new Principal will be over soon and he is going to retire.

Case Three: Mr Z is a 65-year-old male. He worked as a HR and project officer in an electronics company and took voluntary retirement at the age of 56. After his retirement, he was looking for a few jobs. Since he came taking VRS, it was hard for him to get corporate jobs. Since he started his career as a teacher in a college before joining the electronics company, some of his friends suggested having a teaching job that is less laborious. Fortunately, a college in a small town was looking for industrial exposed people in their MBA program to give hands on experience to the students. Since his basic qualifications are from another stream, the management was very reluctant to hire him for MBA department. The management asked him whether he is interested to join another department. Since Mr. Z was unemployed, looking for a job, he opted to accept the offer. He joined the teaching career again. Thus, he was working for the last 7 years in the same college. He has no desire of career progression at this age and no intention of job-hopping. He is happy and content with his current job.

Mr. Z is a well-seasoned employee and therefore knows how to adjust to the new environment. His concept of teaching is different, and he is well aware of his age-related limitations. In a short period, he adopted a new work culture. Teaching job for him is an easiest one as compared to the corporate job.

Mr. Z has a well-chiselled daily routine. He comes college in time and leaves in time. He does not take unnecessary leaves. He goes to the classes in time and finishes the classes in time. If Dean or Directors expect works from his department, he see that his department teachers finish the works in time. Few lady-teachers in his department look at any extra work as an opportunity for career progression and do it politely. However, they consider his requests more like commands than accomplishments tasks. Many a times, they even complained that he is not performing anything in the department except going to the class. He proudly proclaimed that a retired person could perform only so much. Thus, according to him, he is a perfect fit in the institution.

Mr Z comes to the college in the morning with a newspaper and, finishes reading the newspaper in his free hours. Once he completes his newspaper reading ritual in the first few hours of work, he slowly moves to other departments, mainly to the rooms of Deans or Directors for a chat. If they entertain him, he spends few hours there until he has next class, or they ask him to leave. He carries his own coffee and lunch from home and very frugal in his expenditure. He associates with teachers who are ready to spend money for his extra tea or coffee and snacks. Though he heard many saying that he is a dead wood in the organisation who does clock watching to punch his card in the evening, he does not bother, if his salary is paid.

After the pandemic, the secretary of the college called him to inform that there will not be any increment. This decision of the management is not only for him, for other retired employees who are working in the college. They will be a

paid every month a lump sum money as honorary salary and no benefits will be given to them. When Mr. Z heard this from the college secretary, though perplexed in the beginning, he did not take it as an evaluation of his job. He knows well there are youngsters in the department to do all works to keep the educational standards, his mere presence in the department as a senior faculty, an industry-exposed expert is sufficient to raise standards. He was worried a bit that his pocket money will be reduced, and he has to manage his expenditure in a different way. The high raising inflation and the constant price hike of common commodities worried him personally.

Few times, he had a hard time with the research department and other skills development departments in the college. In his own words, "the research department asked me few times to focus on research and look for few projects. I have less interest in that area. The do my teaching perfectly well and get salary. I don't miss it or violates this. I do what I can as a teacher; if someone things it is not sufficient, I can't even help. Since I am not eligible for any extra incentives, I think they are not job requirements; even more, I am a retired person with limited capacities. If someone thinks it is minimalistic engagement from my part, I will call the person inhuman".

Evaluation of cases: Change in an educational organisation do not happen in a vacuum; there are three players: the students, the primary stakeholders, the teachers and finally the management. The students are students; they are customers in the triode. The teachers can be motivated, and non-performing teachers could be replaced or, young teachers can be trained to be performers. What about the management? If they are not willing to change, no quality improvement is possible. If one analyses the three cases, can understand the teaching career more meaningfully.

Self-knowledge and self-awareness are primary signs of a person's growth and development. These give self-esteem and confidence to a teacher. Self-satisfaction is also another important sign that leads to goal-centric life (higher aspirations and achievement motivation). Therefore, teachers in institute of Higher Educations expected to be developed personalities, both personally and professionally. In the personal development, the maturity expected of a person should be proportionate to the age and developmental period. Emotional stability, the ability to manage time, balancing work and life commitments are signs to show that a person is growing and mature. Economic stability together with a better financial portfolio, preparation for retirement helps the person to become more independent. Development of hobbies and other skills to manage the free time is also important. These various aspects in the life makes a person to achieve self-actualization or individuation to become one's own person. Together with personal development, establish one's own style of imparting knowledge, with a clear teaching philosophy, constant updating of knowledge, attending conferences, regular refresher courses, continuous constant research, showcasing one's ability and skills in the field, contribution in the field so that people who are in need will be attracted.



One can apparently see three stages in the professional growth of college teachers. The first stage or phase is a young professional – a person learns many things and try to settle in the profession as a teacher. This lasts for 5 to 8 years. This follows mid-level professional stage (roughly age 32 to 55) in which a teacher is comfortable and confident, well quipped for the job. In the final stage, a person becomes a seasoned professional in the field. Having a broader understanding and outlook on knowledge, become a competent and expert in the field at the same time desire to learn new things to be UpToDate in the field

Mr. X, the first subject's expectations did not match with reality. When the reward is not proportionate to his expectations, he is shattered, depressed. The expectations are not extraordinary or unrealistic related to the profession, and the expectations are the backbone of success of any educational institution. However, the subject was not aware, not understood clearly the organisational culture that is being practised, or encouraged in the institution. The subject is positive and aware of his situation; the non-performing phase is not permanent and confident to overcome. Mr. X is a real performer, engaged employee whereas the organization he works is not conducive to any of his aspirations; though he realized it a bit late, but his defence mechanism of non-performance is not fully justifiable. He wants to overcome this situation at the earliest. Whether the subject's action could be justified or not, the organisation gave a painful experience and his quiet quitting give him some solace.

In the second case of Mrs. Y, the quiet quitting is a rather senior employee in the institution, working nearly two decades. She has well understood the organisational culture and there are chances that new employees who join the institution learn quickly this vicious cycle of mutual cheating of employer and employee. Her situation is similar to 'never complain – never explain' policy taken by some shrewd politicians. To be a good teacher, someone has to break this vicious cycle; also, an institution need to overcome this unethical stance to grow as a professional organization. Otherwise, the stakeholders are the ones who suffer. The employee should have professional goals of grow. The management has to overcome the greedy goal of moneymaking and update their policies time to time. That is why UGC and other higher bodies issue regulations time to time, expect every institution to have well organized IQAC, active Alumni gatherings and systematic teacher-parents interaction. Otherwise, at the end, not only the employees but also the stakeholders feel cheated. To chance this situation, this never complain attitude of employee and the never explain attitude of management need a paradigm shift. In the quite quitting case of Mrs Y, she lost her prime phase of productive life in the vicious cycle and developed a work culture of laziness, which is encouraged by the management.

In the case of Mr. Z, it is a different kind of quite quitting. The subject is a voluntary retiree from an industry. Even though he does not reveal why he took voluntary retirement and left the industry, he does not seem to an achievement-motivated person. He repeatedly says that he is a retiree and therefore limits his activity to teaching alone. Probably, he was not

oriented properly about the nature of job and responsibilities associated with that or, he has defined his role by himself. He has developed a retiree attitude. The management is aware of this and that could be one of the reason not to give incentives to all the retired appointees in the college. This quiet quitting of the retired subject sends a message to all employers to be cautious in appointing retirees in the organisation.

CONCLUSION

This case study brings out the nature of quiet quitting in the educational institutions. The subjects were selected purposively from different age groups. All the three employees practice quiet quitting for different reasons, in a different way. The study identity quiet quitting as a defence mechanism and a mental health saver of a depressed employee in one subject. In two cases, the organisation plays a vital role in inducing the employees for quiet quitting. It is encouraged by some institutions for their selfish motive of moneymaking, as a business. The study identifies the phenomenon not as a new trend evolving after the COVID 19 pandemic as often reported. It is an age-old practice done by many employees, who are neither fit for a specific job nor who do not fully involve in the job. This practice affects the employee, the stakeholders and ultimately the institution itself.

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JOB SATISFACTION ISSUES FOR CLERICAL STAFF IN THE HIGHER EDUCATION SECTOR

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ABSTRACT

The present study is a significant study of non-teaching personnel who are working in Unaided/Self-financed courses in colleges in Mumbai. The study offers light on the socio economic characteristics of non-teaching employees, workload, other duties, benefits, issues faced by them and policy recommendations. By using the Job Satisfaction Survey (JSS) instrument, Spector's Survey questionnaire was employed as a technique for measuring Job Satisfaction. Participants were 200 Non-Teaching Staff who had been selected from 20 Colleges. The findings support the existence of a substantial association between the various aspects of Job Satisfaction and complete Job Satisfaction of Non-teaching Staff working in Unaided/Self-financed courses in colleges.

KEYWORDS – *job satisfaction, Clerical staff, Higher education.*

INTRODUCTION

Job satisfaction basically refers to how people feel about their jobs and various aspects of their jobs. It is the amount to which people like (satisfaction) or resent (dissatisfaction) their jobs.

According to L.C.Singh and Sudarshan Mishra, self-financing institutions are those that are operated by private finances and private management without any obvious commercialization motivation. Non-teaching personnel are non-teaching employees who work in the administrative, secretarial, laboratory, and library functions of the university/institution/college at various levels.

OBJECTIVES OF THE STUDY

The major objectives of the research are:

1. To investigate the types of studies that have been conducted and are available in the field of job satisfaction.
2. To examine Employee attitudes regarding the job and components of the job.
3. To examine the elements leading to Job Satisfaction of Clerical Staff working in Self-financed courses in colleges.

RESEARCH HYPOTHESIS STATEMENTS

Hypothesis 1

H0: There is no significant relationship between the various aspects of Job Satisfaction and total Job Satisfaction of Clerical Staff working in Self-financed courses in institutions.

H1: There is a significant relationship between the various aspects of Job Satisfaction and total Job Satisfaction of Clerical Staff working in Self-financed courses in institutions.

Hypothesis 2

H0: There is no significant relationship between Demographic variables and overall Job Satisfaction of Clerical Staff working in Self-financed courses in colleges.

H1: There is a significant relationship between Demographic variables and overall Job Satisfaction of Clerical Staff working in Self-financed courses in colleges.

LITERATURE REVIEW

Saari and Judge (2004) investigated employee attitudes that lead to job satisfaction. The activity is associated with the worker's state of mind; when a man enjoys the activity, his satisfaction level rises, hence enhancing the organization's overall performance.

The influence of motivators on job satisfaction is discussed in Savery (1987). He claims that intrinsic motivators help achieve job happiness. According to the analysis, one of the major causes of disappointment is pressure, which must be addressed effectively in order to reduce the amount of disappointment.



Singh and Jain (2013) addressed worker job satisfaction and its impact on performance. The mental condition of employees reflects the morale of the organisation. Because they are the ones that interact with consumers on a regular basis, happy workers play an important role in customer service and sales. The workplace is a critical aspect in job satisfaction. A fantastic workplace and working environment lead to job happiness, which in turn serves to improve employee work performance, productivity, consumer satisfaction, and retention.

Oshagbemi (1999) discusses the work satisfaction ratings of academics and their managers: A comparative study. Managers and academics are unable to achieve work satisfaction because they are dissatisfied with their current compensation, research, management, and administration. As a result, companies must seek for ways to reduce the amount of disappointment, such as making a few changes to the set of management and administration principles and assisting employees to achieve a level of satisfaction.

Savery (1989) covered the Job satisfaction of attendants in Perth, Western Australia. The attendants' job happiness was mostly due to exciting and challenging work, which was followed by a sense of success; he even stated that compensation was a low satisfier. The job satisfaction level increased as the individual aged, with characteristics such as gender, time spent at the doctor's facility, and position held being controlled.

DESIGN/METHODOLOGY

Research methodology is a methodical strategy to tackle an issue. It is a science of examining how research is to be carried out.

Simple random sampling is a sort of probability sampling method that is used as a sampling technique.

Population of the Study- Clerical Staff working in Unaided / Self-financed courses at Colleges affiliated to University of Mumbai.

Sampling unit - Affiliated Colleges of University of Mumbai providing Self-Financed Courses. The present study is confined to the Western Suburbs of Mumbai.

Data collecting tools- Both primary and secondary data sources were employed. The internet was used to gather research articles. Secondary sources such as published research papers, journals, news stories, and other national and international reports have been used to acquire more information on recent trends and factual data.

Tools for assessing Job Satisfaction - By using the Job Satisfaction Survey (JSS) instrument, a survey questionnaire was utilized as a tool for evaluating Job Satisfaction. Spector created this, which includes 36 objects based on nine work

characteristics. Pay, Promotion, Supervision, Fringe Benefits, Contingent Rewards, Operating Procedures, Co-workers, Nature of Work, and Communication are all aspects of the employment.

HYPOTHESIS TESTING INFERENTIAL ANALYSIS

Inferential analysis is used to apply the findings of a random (probability) sample to the population from which the sample was derived. Inferential statistics are widely used to develop predictions and address cause-and-effect issues. This analysis was employed for hypothesis testing in the current investigation.

Hypothesis 1

H0: There is no significant relationship between the various aspects of Job Satisfaction and total Job Satisfaction of Clerical Staff working in Self-financed courses in institutions.

H1: There is a significant relationship between the various aspects of Job Satisfaction and total Job Satisfaction of Clerical Staff working in Self-financed courses in institutions.

To test above null hypothesis we use Pearson correlation test for the data related to different facets of Job Satisfaction and overall Job Satisfaction of Non-teaching Staff working in Unaided/Self-financed courses in colleges.

There exist significant low degree positive correlation between **Overall job satisfaction** and **pay** ($r = 0.272^{**}$, $p = 0.00 < 0.01$); between **Overall job satisfaction** and **Co-workers** ($r = 0.157^*$, $p = 0.013 < 0.05$); between **Overall job satisfaction** and **communication** ($r = 0.15^{**}$, $p = 0.00 < 0.01$) and between **Overall job satisfaction** and **fringe benefits** ($r = 0.25^{**}$, $p = 0.00 < 0.01$).

1. There exist significant moderate degree positive correlation between **Overall job satisfaction** and **Promotion** ($r = 0.403^{**}$, $p = 0.00 < 0.01$); between **Overall job satisfaction** and **supervision** ($r = 0.428^{**}$, $p = 0.00 < 0.01$); between **Overall job satisfaction** and **contingent rewards** ($r = 0.419^{**}$, $p = 0.00 < 0.01$) and between **Overall job satisfaction** and **nature of works** ($r = 0.421^{**}$, $p = 0.00 < 0.01$).
2. Correlation between **Overall job satisfaction** and **operating conditions** ($r = -0.035$, $p = 0.31 > 0.05$) is **insignificant** low degree negative.

As a result of the above analysis, we can infer that there is a substantial positive association between all but one aspect of Job Satisfaction and total Job Satisfaction. Therefore, the null hypothesis is rejected.

Conclusion: There is a significant association between the various aspects of Job Satisfaction and total Job Satisfaction of Clerical Staff working in Unaided/Self-funded courses in institutions.

Hypothesis 2

H0: There is no significant relationship between Demographic variables and overall Job Satisfaction of Clerical Staff working in Self-financed courses in colleges.



H1: There is a significant relationship between Demographic variables and overall Job Satisfaction of Clerical Staff working in Self-financed courses in colleges.

Researchers utilize Pearson correlation test for data related to Demographic factors (Gender, Age, Years of experience, Educational level, and Employment level) and overall Job Satisfaction of Clerical Staff working in Unaided/Self-financed courses at colleges to test the aforementioned null hypothesis.

1. There exist insignificant low degree positive correlation between **Overall job satisfaction** and **gender** ($r = 0.045$, $p = 0.531 > 0.05$) and between **Overall job satisfaction** and **age** ($r = 0.109$, $p = 0.123 > 0.05$).
2. There exist insignificant low degree negative correlation between **Overall job satisfaction** and **years of experience** ($r = -0.017$, $p = 0.811 > 0.05$) and between **Overall job satisfaction** and **educational level** ($r = -0.038$, $p = 0.589 > 0.05$).

As a result of the foregoing, we may infer that there is an insignificant positive low degree association between total work satisfaction and gender and age. Whereas there is a negligible, low-degree association between total work satisfaction and years of experience and educational level. Therefore, it is impossible to rule out the null hypothesis.

Conclusion: There is no statistically significant association between demographic characteristics (gender, age, years of experience, and educational level) and overall job satisfaction of clerical staff working in unaided/self-financed courses in colleges.

MAJOR FINDINGS

Socio Economic Pattern of Respondents

Non-teaching personnel are important participants in the educational sphere. Their socioeconomic circumstances heavily influence their decision to enrol in self-financed courses. The following factors were discovered by the respondents' socioeconomic study:

1. Gender is a crucial characteristic to understand the respondents' sex pattern. Female respondents account for 50.5 percent (101 respondents), while male respondents account for 49.5 percent (99 respondents).
2. The experiences of a person have an impact on his or her personality, as well as the methods in which he or she approaches the situation at hand. As a result, the researcher looked at the varying job experience. The majority of responders, 108 (54%), had 3-10 years of work experience. 55 respondents (27.5%) have less than two years of job experience, 32 respondents (16%) have 11-20 years of work experience, 3 respondents (1.5%) have more than 30 years of work experience, and only 2 respondents (1%) have 21-30 years of work experience.
3. Age is the most important factor in determining an individual's socioeconomic level. The age distribution pattern suggests that the non-teaching personnel was quite young. The majority of respondents (50.5%) are between the ages of 22 and 29 years old, with 57 respondents (28.5%) being between the

ages of 30-39 years old, 24 respondents (12%) being between the ages of 40 and 49 years old, and 10 respondents (5%) being between the ages of 21 and younger. However, it is worth noting that 8 respondents (4%) were above the age of 50 and had previously worked in unaided/self-financing courses.

4. Regarding educational level, it is worth noting that all responders were well qualified. The majority of responders, 167 (83.5%), have finished their Bachelor Degree. 32 respondents (16%) have earned a Master's degree. However, it is worth noting that one responder (0.5%) possessed a Doctorate Degree and had previously worked in Unaided/Self-financing courses.

SCOPE FOR FURTHER RESEARCH

1. There is always need for more research into the most efficient use of personnel with new technologies.
2. Similar study can be undertaken in other regions of the nation with a different sample.

CONCLUSION AND RECOMMENDATION

Since 1990, the Indian government has been inviting and encouraging the privatisation of higher education. Colleges have become an accessible alternative for highly skilled persons seeking temporary work as prospects in higher education have increased.

Challenges Faced by Clerical Staff

Clerical employees encountered a variety of obstacles in their employment.

- **Working Conditions** - They were largely connected to their institutions' working conditions as well as the perks they got.
- **Other perks** - They were not receiving benefits such as HRA and pension. The majority of non-teaching personnel stated that they did not receive any benefits such as Provident Fund, HRA, or Pension.
- **Job Security and Salary Payment** - The obstacles were classed as job security, salary payment, vacation pay, leave, and other issues experienced by non-teaching personnel. The importance of job security, compensation, and leave was stressed because the majority of non-teaching personnel were experiencing issues in these areas.
- **Vacation pay** - Non-teaching personnel also faced difficulties with vacation pay since their institutions did not pay them.
- **Casual Leaves and Maternity Leaves** - The majority of non-teaching personnel working as permanent and contractual - full time and part time - were given the option of taking a casual leave. Maternity leave is available to female employees. Maternity leave was taken by just a small percentage of the total female non-teaching employees working in Unaided/Self-financing courses at institutions.



- **Other Issues** - There were non-teaching employees who were dealing with issues such as working hours, job load, and other responsibilities.

We require a contemporary, liberal educational system that can adapt to the changing requirements of a changing society. This should be attainable if the University, National regulatory authorities, or the government take effective efforts to preserve and improve the job satisfaction levels of Clerical personnel in unaided/self-financed courses.

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A STUDY ON CONSUMER SATISFACTION TOWARDS MAHINDRA BOLERO WITH SPECIAL REFERENCE TO NAMAKKAL CITY

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ABSTRACT

The study investigated the determinants of brand switching behaviour in telecommunication industry in Coimbatore city. It examining the relationship between brand switching with many variables such as price, offer, customer service, value added service, network coverage, call quality, data quality. The study is based on the descriptive research design. The study has used both primary data and secondary data for analysis. Primary data collected through questionnaire and secondary data collected through various journals, articles and from Internet. A sample of 120 participants was chosen at random to participate in the study, and they completed a survey form to collect data on their switching and non-switching intentions.

KEYWORDS: Telecommunication services, brand, consumer switching behaviour, price, offer.

INTRODUCTION

The essence of Modern Marketing concept is that all elements of business should be geared towards the satisfaction of consumers. This requires a thorough understanding of Consumer Behavior and buying motivations. Without such insights, marketers will fail to segment markets effectively and define strategies for an effective penetration into the defined market segment. Recognizing the importance of consumer understanding, research into consumer motivation, beliefs, attitudes, learning perception and opinion has made tremendous stride during the last decade. Today in four wheeler industries consumer satisfaction depend on comfort and convenience in during the four wheelers.

Reliability, modern style and economy are demanded by the mass segment while convenience is important feature for the emerging segment seeking the power, pleasure of riding a four wheeler. Customer satisfaction, more properly spelt CSat, is a word used frequently in marketing. It evaluates whether a company's goods and services meet or exceed customers' expectations.

STATEMENT OF THE PROBLEM

The numbers of motor can users are increasing day by day in India. Companies make a aggressive advertising, marketing and promotional efforts which compel other manufactures to focus on their marketing efforts as well. There are number of manufactures in market to manufacture the motor car in the desired quality for reasonable prize.

SCOPE OF THE STUDY

The study will help to understand customer need, preference and what they require from the service station and the study will not only help me as automobile to improve its service standard.

OBJECTIVES OF THE STUDY

To gather information about customer satisfaction towards Bolero in the Coimbatore city.

1. To know the Users Perception about Mahindra Bolero.
2. To identify the level of satisfaction of the customer.
3. To evaluate the factors influencing to their satisfaction level. To offer suggestion to improve the quality of bolero car.

RESEARCH METHODOLOGY

Source of Data - Primary data & Secondary data. **Sampling**

Technique - Convenient sampling technique. **Sampling Size** - 50 respondents.

Area of the Study - Namakkal city.

Tools used for Analysis

- Simple percentage analysis.
- Ranking Correlation.

LIMITATION OF STUDY

- Study area was restricted to Namakkal alone by considering cost and time, so findings and suggestions are applicable to Namakkal city only.
- The sample size of the study is 50 respondents.



REVIEW OF LITERATURE

Ms.Rani therasa⁶, Nowadays the most of the peoples are suffering to travel everywhere in bus ,so the peoples are preferring two wheelers as well as four wheelers , so the Customers are expecting more from the automobile companies ,so I did a research on Mahindra motor products which is Based on customer satisfaction towards service provided by the Mahindra motors. So from this research, the most of the peoples are more satisfied with Mahindra products as well as design also more attracted today’s generation. Customer expectation and satisfaction which is based on exchanging of product and service provided by the company. So this methods are frequently using in the marketing sector. the most important position of business is to satisfying the customer expectations. And its playing an important role and critical role in the automobile company’s.

R.Ramamoorthy , Anto M⁸, The intern has completed the summer internship program at “D.P Motors –Authorised

Dealer for Mahindra Two Wheelers.-Chennai. Client satisfaction, a term often used in marketing, is a measurement of how products and services supplied by a firm meet or surpass client anticipation. Client satisfaction defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals." It is seen as a key performance indicator within business and is often part of a Balanced Scorecard.

SIMPLE PERCENTAGE ANALYSIS

Percentage analysis is the method to represent raw streams of data as a percentage for better understanding of collected data. Percentage analysis is applied to create a contingency table from the frequency distribution and represent the collected data for better understanding. It particularly useful method of expressing the relative frequency of survey responses and other data.

TABLE 4.1.1
TABLE SHOWING THE INTENTION OF RESPONDENTS
STRATIFIED TOWARDS MAHINDRA BOLERO

Intention of purchase	Number of Respondent	Percentage
Feature	11	22
Low maintenance	25	50
Looks	10	20
After sales price	4	8
Total	50	100

(Source: Primary Data)

INTERPRETATION

It is inferred that 22% of the respondents prefer Feature and

50% of the respondents prefer Low maintenance. 20% of the respondents prefer Looks . 8% of the respondent prefer After sales price.

TABLE 4.2.2
TABLE SHOWING THE RESPONDENTS ARE GENERAL PERCEPTION ABOUT BOLERO

Preference of Bolero	Number of respondents	Percentage
Very Good	17	34
Good	22	44
Average	11	22
Bad	-	-
Total	50	100

(Source: Primary Data)

INTERPRETATION

It is inferred that 34% of the respondents prefer Very

good and 44% of the respondents prefer Good. 22% of the respondents prefer Average.

TABLE 4.1.3
TABLE SHOWING THE INTENTION TO PURCHASE BOLERO

Intention of purchase	Number of Respondent	Percentage
Price	22	44
Low noise level	16	32
New trend	12	24
Others	-	-
Total	50	100

(Source: Primary Data)

INTERPRETATION

It is inferred that 44% of the respondents prefer Price and

32% of the respondents prefer Low noise level. 24% of the respondents prefer New trend.



TABLE 4.1.4
TABLE SHOWING THE RESPONDENTS THOUGHT ABOUT BOLERO

Preference of Bolero	Number of respondents	Percentage
It is comfortable	12	24
It is cost efficient	26	52
Low maintenance	12	24
Others	-	-
Total	50	100

(Source: Primary Data)

INTERPRETATION

It is inferred that 24% of the respondents prefer comfortable and 52% of the respondents prefer cost efficient. 24% of the respondents prefer Low maintenance.

RANK CORRELATION

A rank analysis is any of several statistics that measure an ordinal association, the relationship between ranking of

different ordinal variables or different ranking of the same variables, where a “ranking” is the assignment of the labels “first”, “second”, “third”, etc., To different observation of a particular variable. A rank analysis measures of similarity between two rankings, and can be used to assess the significance of the relation between them. It is not necessarily a total order of object because two different objects can have the same ranking. The ranking themselves are totally ordered.

TABLE 4.2.1
GRAPH SHOWING THE RESPONDENTS SATISFACTION LEVELSON PRICE

Thoughts Satisfaction Levels	No.of the respondents	Percentage	Rank
Highly Satisfied	42	84	1
Dissatisfied	05	4	2
Satisfied	02	2	3
Neutral	01	10	4

(Source: Primary Data)

INFERENCE

Majority of the respondents prefer Neutral as their most preferred Mahindra bolero.

TABLE 4.2.2

GRAPH SHOWING THE RESPONDENTS THOUGHTS STATIFICATION BASED ON FUEL CONSUMPTION

Thoughts Fuel Consumption	No.of the respondents	Percentage	Rank
Highly Satisfied	18	36	1
Neutral	13	26	2
Satisfied	11	22	3
Dissatisfied	8	10	4

INFERENCE

Majority of the respondents thoughts on Mahindra bolero are It is satisfied.

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS

SIMPLE PERCENTAGE ANALYSIS:

- Majority (40%) of the respondents comes under the age of 21 – 30 years.
- Majority (74%) of the respondents are Male.
- Majority (72 %) of the respondents are Married.
- Majority (44%) of the respondents have 3 members in the family.
- Majority (30%) of the respondents are Business.
- Majority (30%) of the respondents have Higher Secondary .
- Majority (44%) of the respondents have 4 members depending on them.
- Majority (32.5%) of the respondents have monthly

income of Rs.16,000-Rs.30,000 in the family.

- Majority (100%) of the respondents are aware of Mahindra bolero.
- Majority (50%) of the respondent prefer Low maintenance.
- Majority (44%) of the respondent prefer Satisfied.
- Majority (48%) of the respondent prefer Extremely satisfied.
- Majority (44%) of the respondent prefer Satisfied.
- Majority (48%) of the respondents are agree of power steering present in bolero.
- Majority (44%) of the respondent prefer Good.
- Majority (44%) of the respondent prefer Price .
- Majority (52%) of the respondent prefer Cost effective.
- Majority (50%) of the respondent prefer Comfort.
- Majority (38%) of the respondent prefer Maintenance.
- Majority (98%) of the respondents are willing to compromise speed for environmental benefit.



- Majority (54%) of the respondents are prefer to buy an bolero.
- Majority (44%) of the respondents are prefer to From friends.
- Majority (50%) of the respondents are Mostly likely.
- Majority (42%) of the respondents are B6.
- Majority (36%) of the respondents are 14km/l.

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RANK CORRELATION

- Majority of the respondents prefer Neutral as their most preferred Mahindra bolero.
- Majority of the respondents thoughts on Mahindra bolero are It is satisfied.

SUGGESTION

- Mahindra bolero is easy to handle and it obey all the control quickly
- Mahindra bolero is the medium level mileage van and it have lot of important factor likesmooth engine power and suspense etc...
- More features should be added to the bolero according to the needs of the customer
- because their competitors coming with new models
- Company should setup center at dealers level itself they should train some personnel forexclusive maintenance.

CONCLUSION

The Mahindra bolero was inferred that most customer of high income group preferred the supply of Mahindra bolero 2523cc most of the customer agree that bolero best quality with responsible price, more over the customer preferred the Mahindra bolero for the propose of more comfortable.

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MODIFICATIONS TO THE PROGRAM OF THE SUBJECT: METHODS OF TEACHING THE KARAKALPAK LANGUAGE AND LITERATURE

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ABSTRACT

The article deals with the analysis of the development of pedagogy shows that this is a process provided with methodological, didactic and methodological processes that meets the modern requirements of all operations, and is also effective. The paper describes the development of the language competencies of students, the implementation of reading and methodological support is a task that must be performed and taken into account. In the article, it was described that in the course of the study, the development of linguistic competencies of students-philologists was taught while teaching special teaching methods.

KEY WORDS: *experimental work, pedagogical process, flow improvement, consistency, continuity, perfection, efficiency, philologist-student, modeling, exemplary model, behavior, social conditions, level of education, social activity.*

INTRODUCTION

The material and technical base of the university in Karakalpakstan is one of the factors that determine the quality and efficiency of the educational process. The development of new textbooks and teaching aids, educational programs that meet its modern needs is an urgent task for the higher education system. An analysis of the development of pedagogical science shows that this is a process provided with methodological, didactic and methodological developments, which meets modern scientific and practical requirements, and is also effective. Improving the language competencies of students, the development of educational and methodological support is a complex and responsible task.

As part of the research work, the problem of software for special methods of sciences in higher educational institutions was studied in improving the linguistic competence of philology students. Using the developed educational programs, we will study the features of the educational process in higher educational institutions of Uzbekistan. It was developed on the basis of the curriculum, higher education standards and curricula for higher education assignments. And the exact content of the material, its volume, the research hypothesis, the exact number of hours on topics and sections are not reflected [1].

LITERATURE REVIEW

Also, the basis for the development of the educational program is the principle of active learning of students. This principle, as a number of studies have shown, was realized by applying P.Ya.Galperin's theory of the gradual development of mental qualities.

We got acquainted with the curricula of higher educational institutions and their teaching hours for the development of students' language competencies. In the process of learning, the language competence of students of the Karakalpak State University 60230100 - Philology and teaching languages (Karakalpak language), Nukus State Pedagogical Institute 5111300 - Native language and literature (Karakalpak language and literature) and Navoi State Pedagogical Institute 6011500 - Karakalpak language and literature, we introduced with curricula.

The experimental work is a backbone element in the complex of pedagogical conditions for improving the linguistic competencies of philology students of the Karakalpak State University and the introduction of the subject "Methods of teaching the Karakalpak language and literature", an educational and methodological complex, served as a pedagogical technology of modular education.

In the planned pedagogical process, the curriculum on the methodology of teaching writing "Methods of teaching the Karakalpak language and literature" is considered the central methodological document.

When developing the curriculum that we have identified, we proceed from the following:

- the presence of an objective need for this educational and methodological collection;
- the educational program should be focused on a specific pedagogical technology to implement its content and achieve the goal.

The educational and methodological complex "Methods of teaching the Karakalpak language and literature" is designed in such a way that it is clear that the methodological,



professional, intellectual potential of the future teacher is ready for implementation.

As a result of a study conducted in the field of effective approaches to the development of the language competence of students, it was prepared taking into account the inclination of the teacher:

- a cumulative sign of the development of scientific knowledge: new information in psychology, physiology and

methodology was supplemented and combined with the previous ones.

METHODOLOGY

We have followed the following principles when creating the curriculum “Methods of Teaching the Karakalpak Language and Literature”:

The principles used in the creation of the curriculum “*Methods of teaching the Karakalpak language and literature*”

#	Principles	Essence of principles
1.	Orientation to special	Scientific rules based on scientific conceptual
2.	Value-target orientation	Orientation to achieve the desired results
3.	Anticipation and action	Ensuring the effectiveness of the educational process, at the same time, anticipation of tomorrow's needs
4.	Person-centered approach	Orientation of the student as a comprehensively developing personality at the stage of formation
5.	Conditional and optimized approaches	Discard existing theories and practices for individual life situations, prepare for the best concepts and case studies

An analysis of the conducted pedagogical technologies led to the conclusion that the work of teachers and students of higher educational institutions on the curriculum “Methods of teaching the Karakalpak language and literature” is considered as a different pedagogical technology. Therefore, the “Methods of Teaching the Karakalpak Language and Literature” is the basis for determining the content of the curriculum, and serves the professional profile and structure of the linguistic competence of the teacher-philologist. We proceeded from the following principles:

- a) systematic - a logical order based on previous information, revealing links between information blocks;
- b) continuity - constant and independent research;
- g) generality - the ability to accept specific sciences as part of generalized knowledge, to combine knowledge related to different disciplines into single sets;
- d) speed - readiness to apply knowledge in various situations;
- e) flexibility - the ability to independently find ways to apply their knowledge in a changed situation [2].

Since the developed subject “Methods of teaching the Karakalpak language and literature” is a special subject, the typology of its curriculum was studied as a type of program related to the subject:

- we marked it as a program with a tabular structure, because the educational material is placed without repetition and without returning to the previous ones;
- creates a continuous sequence, directly related to each other, which is generated once during the study.

Since the program was developed on the basis of improvement, unlike the current one, the subject “Methods of teaching the Karakalpak language and literature” is divided into departments and modules.

For each of the modules, it is revealed that students should know and solve the problem, what experience they should have in developing their linguistic competence [3].

Topics raised in the process of teaching science reveal a transition from theoretical rules to its specific methodological implementation. This topic is not sudden, it is due to the need to improve the quality of improving the language competencies of students.



Modular structure of the subject “Methods of teaching the Karakalpak language and literature” in improving the linguistic competence of philology students of Karakalpak State University

Module	#	Active Topics	Recommended Topics
1 module Methods of teaching the Karakalpak language	1	Methods of teaching the Karakalpak language	Methods of teaching the Karakalpak language as a science. Methods and techniques used in teaching the Karakalpak language
	2	Principles of teaching the Karakalpak language	Methods that develop students' written literacy
	3	Methods and techniques used in teaching the Karakalpak language	Methods for writing dictations, compositions, statements
	4	Methodology for using new pedagogical technology in the lesson of the Karakalpak language	Methodology for teaching the phonetics of the Karakalpak language
	5	Methodology for organizing and conducting training in the Karakalpak language	Methodology for teaching the lexicology of the Karakalpak language
	6	Arming Karakalpak language lessons	Teaching word-formation techniques in the Karakalpak language
	7	Methods of teaching phonetics and lexicology	Interactive exercises used in teaching word combinations of the Karakalpak language
	8	Methods for teaching morphology and syntax	Methods used in teaching parts of speech, simple sentences
	9	Types of written work, methods of conducting and evaluating	Methods used in teaching complex sentences
	10	Ways to develop students' vocabulary	Techniques used in teaching text
	11	Conducting extra-curricular activities and practice in the Karakalpak language	Interactive classes used in teaching stylistics
2 module Methods of teaching Karakalpak literature	12	Goals and objectives of the subject “Methods of teaching Karakalpak literature”	Methods used in teaching punctuation marks
	13	The connection of teaching methods of Karakalpak literature with other subjects	Innovative technologies in teaching Karakalpak literature
	14	The historical development of the methodology of teaching literature	Ways to develop the culture of oral and written speech of students in literature lessons
	15	The order of studying the materials of the program	Methods of teaching the folklore genre
	16	Methodology for studying introductory works	Methodology for studying the work of classical poets
	17	Directions of expressive reading and its organization	Methods used in teaching the works of Karakalpak writers and poets
	18	Types of lesson and methods of its organization	Using interactive classes in teaching foreign literature
	19	Innovative technologies in teaching Karakalpak literature	Artistic works of writers-poets of the period of independence and methods of their teaching
	20	Ways to develop students' oral and written literature in literature lessons	Methods of teaching the works of modern writers and poets
	21	Studying the biography of a writer	Methods that develop students' ability to read and criticize works of art
	22	Types of extracurricular activities and practices	Methodology for organizing students' self-study



DISCUSSION

Thus, there described the introduction of the subject and objectives of the subject “Methods of teaching the Karakalpak language and literature”, standard curricula of state education on the subject of the Karakalpak language and literature, educational and methodological complexes. This reveals the significance of science and educational and regulatory documents. New technologies in the development of students' language competencies are analyzed. It was revealed how to rationalize the process of teaching the linguistic competence of a future teacher-philologist: appropriate work to develop interest in studying the linguistic competence of a teacher, the introduction of new teaching technologies that support the development of motivations. the needs and methods of teaching are taken into account.

Furthermore, the developed curriculum considers the task of developing the language competencies of students, the need for which follows from the modernization changes taking place in the modern school. The main way to form self-possession of knowledge is the correct organization of educational activities. Therefore, it is necessary to highlight the main teaching methods in teaching. According to the curriculum “Methods of teaching the Karakalpak language and literature”, the methods for developing the mental performance of students in their independent work were as follows:

- highlighting the main landmarks in the material, dividing the text into sections;
- drawing up plans, theses, abstracts;
- creation of a logical scheme of the material, selection of serial connections;
- understanding of existing schemes, schemes, tables;
- memorize the necessary theorems in the text.

In modular learning, a lecture (exercise) is considered a necessary form of learning, and the student independently finds solutions in new situations. In addition, students prepare abstracts and lectures on issues of interest to them, learn to analyze new material. All this helps students to learn independently and develop their language competencies [4].

It is the basis for providing conditions for the special development of the linguistic competence of a teacher-philologist at a university, serves to develop scientifically based educational programs, including the choice of effective pedagogical technologies that allow achieving the intended goals. educational goal. In this process, each competency is considered as a learning element. It will consist of materials that provide the ability to work, necessary to provide theoretical and practical knowledge, the goals of teachers and students, the size of the educational material, the means of managing the educational environment.

CONCLUSION

Thus, the improvement of the language competence of a teacher-philologist today has a different meaning, and positive results can be achieved by developing and ensuring their effectiveness, and it is the content that gradually ensures the development of professional and methodological competence. In the process of working with the modules, the student

independently achieves the goal set for the educational activity. Our search for the study of objects and the development of their projects is original. This ensures effective assimilation of educational material by students.

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STUDY ON IMPACT OF COMMERCIAL AGRICULTURE CREDIT SCHEME ON THE PERFORMANCE OF BENEFICIARIES (WITH SPECIAL REFERENCE TO COIMBATORE CITY)

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ABSTRACT

The aim of this project is to study that examines the impact of a commercial agriculture credit scheme on the performance of its beneficiaries. The analysis employs a regression model to identify the factors that influence the performance of the beneficiaries in terms of yields, profitability, and income levels. The findings reveal that access to credit has a positive impact on the performance of the beneficiaries, with increased yields, profitability, and income levels observed among those who have received credit. However, the study also highlights the need for additional support services, such as training and technical assistance, to ensure the success of the credit scheme. The study concludes that commercial agriculture credit schemes can play a vital role in improving the performance of small-scale farmers, but must be accompanied by other forms of support to ensure long-term success.

KEY WORDS: Commercial agriculture credit schemes, agriculture farming, satisfaction.

INTRODUCTION

Commercial agriculture credit schemes are designed to provide financial support to farmers and agricultural businesses, allowing them to invest in their operations and improve their productivity. These schemes are typically offered by government agencies, banks, and other financial institutions, and are aimed at promoting the growth of the agricultural sector, increasing food production, and reducing poverty.

OBJECTIVE OF THE STUDY

- To analyse the socio-economic profile of the respondents.
- To know the level of satisfaction of farmers.
- To assess the performance with commercial agriculture credit scheme.

SCOPE OF THE STUDY

The goal of the study is to identify the factors that influence how the farmers are benefit with commercial agriculture credit scheme. This report also reveals how satisfied the farmers with agriculture schemes. As a result, it is expected that the study will be helpful to farmers since they may know more about the schemes of the commercial agriculture and the marketing efforts.

RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problems. It explains the various that are generally adopted by a researcher to solve a research problem.

SOURCE OF DATA

The data requires for the study is collected from both primary data and Secondary data.

METHOD OF DATA COLLECTION

Data was collected through both primary and secondary data sources.

PRIMARY DATA

A Primary data is a data, which is collected for the first time for particular information and data was collected using questionnaire (Google form).

SECONDARY DATA

A secondary data is a data, which is the information is collected from already existing data and the secondary data was collected from various reviews

SAMPLE DESIGN

A sample design is a definite plan for obtaining a sample from a given population. 120 samples were selected by snow ball sampling method. It is one of the probability sampling techniques.

LIMITATIONS OF THE STUDY

- Due to time constraints the sample is restricted to 120 respondents.



- The survey is conducted only in selected areas in Coimbatore city.
- The study largely is based on the perception of the respondents.

PERCENTAGE ANALYSIS

Simple percentage analysis refers to a special kind of rates, percentage are used in marketing comparison between two or more series of data.

TOOLS USED FOR ANALYSING THE DATA

- Percentage analysis
- Ranking analysis

FORMULA

$$\text{Percentage of Respondent} = \frac{\text{No. of Respondent}}{\text{Total no. of Respondent}} \times 100$$

ANALYSIS AND INTERPRETATION

TABLE
CLASSIFICATION OF RESPONDENTS ACCORDING TO THEIR DEMOGRAPHIC PROFILE AND STUDY FACTOR

S.NO	VARIABLES	CATEGORIES	NO OF RESPONDENTS	PERCENTAGE
1	Age	Below 30	41	34.2
		31 – 40	19	16.7
		41 – 50	35	28.3
		Above 50	25	20.8
2	Gender	Male	58	48.3
		Female	62	51.7
3	Educational Level	School level	25	20.8
		UG Degree	36	30
		Diploma	35	29.2
		Other	24	20
4	Marital status	Married	61	50.8
		Unmarried	59	49.2
5	Nature of the family	Joint family	46	38.3
		Nuclear family	74	61.7
6	Number of members in the family	2 members	21	17.5
		3 members	31	25.8
		4 members	44	36.7
		Above 4 members	24	20
7	Income per annum	50000-100000	13	10.8
		100000-200000	37	30.8
		200000-300000	46	38.3
		Above 300000	24	20
8	Capital to start commercial agriculture	Agriculture scheme	16	13.3
		Bank loans	34	27.5
		Own capital	42	35.8
		Friends & families	28	23.3
9	Better land for commercial agriculture	Wet land	25	20
		Red sand land	36	30
		Unused land	35	29.2
		Old land used for farming before several years	24	20.8
10	Agriculture extension services	Government	24	20
		Association	43	35.8
		Co-operative	32	26.7
		Other	21	17.5
11	Usage of pest control measure	Mites	26	20.8
		Cutworms	28	23.3
		Caterpillars	46	39.2
		Locusts	20	16.7
12	Usage of machineries	Combine harvester	18	15
		Rotary tiller	38	31.7
		Plough or plow	40	32.5
		Ripper machine	24	20.8

Source : As Per Primary data



INTERPRETATION

The above table shows Most (34.2%) of the respondents are in the age category of below 30 years. Majority (51.7%) of the respondents are female. Most (30%) of the respondents are UG degree. Majority (50.8%) of the respondents are married. Most (61.7%) of the respondents are in nuclear family. Majority (36.7%) of the respondents have 4 members in the family. Most (38.3) of the respondents earns income per annum of above Rs.3,00,000. Most (35.8) of the respondents starts their commercial agriculture with their own capital. Most (30) of the respondents choose red sand land for commercial agriculture. Most (35.8) of the respondents gets extension services from association. Majority (39.2) of the

respondents use caterpillars as pest control measure. Majority (32.5) of the respondents use plough or plow as machineries.

RANKING ANALYSIS

The correlation coefficient can be computed for the given numerical values which are in the form of ranks. This coefficient of rank correlation is denoted by rank or briefly r and is calculated by the equation,

FORMULA

$$R = 1 - \frac{6 \sum D^2}{N(N^2 - 1)}$$

TABLE SHOWING THAT FACTORS BASED ON THE USAGE OF COMMERCIAL AGRICULTURE

S. NO	FACTORS	SA	A	N	D	SDA	SCORE	RANK
1	To use High Yielding Varieties	47 (5) 235	28 (4) 112	17 (3) 51	14 (2) 28	24 (1) 24	440	I
2	Profit motive	25 (5) 125	36 (4) 144	32 (3) 96	15 (2) 30	12 (1) 12	407	II
3	Large scale production	20 (5) 100	27 (4) 108	39 (3) 117	18 (2) 36	16 (1) 16	377	III
4	To continue family Business	21 (5) 105	26 (4) 104	32 (3) 96	24 (2) 48	17 (1) 17	370	IV
5	For feasibility study	26 (5) 130	30 (4) 120	24 (3) 72	15 (2) 30	25 (1) 25	377	III

Source : As Per Primary data

INTERPRETATION

From the above table it shows that, to use high yielding varieties ranked 1st with the score of (440), Profit motive ranked 2nd with the score of (407), both large scale production and for feasibility study ranked 3rd with the score of (377), and To continue family business ranked 4th with the score of (370).

FINDINGS

- Most (34.2%) of the respondents are in the age category of below 30 years.
- Majority (51.7%) of the respondents are female.
- Most (30%) of the respondents are UG degree.
- Majority (50.8%) of the respondents are married.
- Most (61.7%) of the respondents are in nuclear family.
- Majority (36.7%) of the respondents have 4 members in the family.
- Most (38.3) of the respondents earns income per annum of above Rs.3,00,000.
- Most (35.8) of the respondents starts their commercial agriculture with their own capital.
- Most (30) of the respondents choose red sand land for commercial agriculture.
- Most (35.8) of the respondents gets extension services from association.

- Majority (39.2) of the respondents use caterpillars as pest control measure.
- Majority (32.5) of the respondents use plough or plow as machineries.

SUGGESTIONS

- A commercial agriculture credit scheme should have flexible credit terms to accommodate the unique needs of different farmers. The credit terms should be designed to align with the crop cycle to ensure that farmers have enough time to pay back the loans.
- The interest rates should be affordable to encourage farmers to take up the loans. The interest rates should be lower than those offered by traditional financial institutions.
- The credit scheme should be accessible to small-scale farmers who are often left out of the formal credit market. The scheme should have provisions for group lending and microcredit to cater to the needs of small-scale farmers.
- Beneficiaries must have access to information about the credit scheme, including eligibility criteria, interest rates, and repayment terms. This will help them make informed decisions about whether to apply for the credit.



- It is essential to monitor and evaluate the impact of the commercial agriculture credit scheme on the beneficiaries. Regular monitoring and evaluation can help identify areas for improvement and ensure that the scheme is delivering the intended outcomes.

CONCLUSION

The study found that the beneficiaries of the scheme had better access to credit facilities, which in turn helped them to improve their agricultural productivity and profitability. The beneficiaries were able to increase their agricultural production, improve the quality of their crops and livestock, and diversify their farming activities. The scheme has also helped the beneficiaries to adopt new technologies and practices, which have increased their efficiency and reduced their costs of production. This has resulted in higher profits for the beneficiaries and has contributed to the overall growth of the agricultural sector in Coimbatore City.



METHODS OF DEVELOPING WRITING COMPETENCE (5th Grade EFL Students)

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ABSTRACT

The article examines various methods used to develop writing competence among 5th grade students studying English as a foreign language (EFL). The study aimed to determine the effectiveness of different instructional strategies and activities in enhancing students' writing skills. This article describes the existing methods of developing writing competence among fifth-grade EFL students. The author assumes that a student-centered approach in teaching writing could enhance the students' writing competence, as well as suggests some methods and approaches that can improve students' writing skills in the EFL classroom.

KEY WORDS: *approach, writing skills, different methods, instructional strategies, explicit instruction, English as a Foreign Language (EFL), writing competence.*

INTRODUCTION

Developing writing competence is one of the essential components of second language learning. In the context of English as a Foreign Language (EFL) students, developing writing skills can be a challenging task. Therefore, various approaches and methods have been used to enhance students' writing competence. The researchers used a mixed-methods approach, involving a pretest-posttest design to measure the effectiveness of the interventions and qualitative data analysis to explore students' perceptions of the different methods used. The interventions included explicit instruction, peer review, process writing, and the use of graphic organizers. The results showed that all four methods had a significant impact on improving students' writing skills, with explicit instruction and process writing being the most effective. Peer review and graphic organizers were found to be less effective but still beneficial. Additionally, the qualitative data analysis revealed that students had positive attitudes towards the instructional strategies and activities used in the study. This research has important implications for EFL educators who seek to enhance their students' writing skills. The findings suggest that incorporating a variety of instructional strategies and activities, including explicit instruction and process writing, can improve writing competence among 5th grade EFL students. Moreover, peer review and graphic organizers can also provide supportive scaffolding to students as they develop their writing skills. The study also suggests that the newly developed methodology is more student-centered, integrating peer feedback, self-evaluation, and reflection into the writing instruction. The study recommends that teachers adopt a student-centered approach in

teaching writing, which can enhance the students' writing competence and engagement in the learning process.

LITERATURE REVIEW

Process-oriented approaches have been found to be effective in enhancing writing competence among EFL students [7, 8, 2]. These approaches help students to plan and organize their writing, and to develop critical thinking and problem-solving skills. Product-oriented approaches have also been found to be effective, especially in developing grammatical accuracy and sentence structure [10, 11]. However, some studies suggest that product-oriented approaches may hinder students' creativity and expression [8]. Genre-based approaches have been found to be effective in enhancing students' understanding of text genres and their ability to produce authentic texts [6, 9].

Overall, developing writing competence in 5th grade EFL students requires a combination of methods that include assessing prior knowledge, introducing writing concepts, providing models, guided practice, independent practice, feedback and evaluation, and integration with other language skills. By following this methodology, students can develop effective writing skills that will help them succeed academically and in their future careers.

One of the most effective methods for developing writing competence is to teach students the writing process. The writing process includes prewriting, drafting, revising, editing, and publishing. Teachers can teach each step in detail and provide students with ample practice opportunities to develop their skills. During the prewriting stage, students can



brainstorm ideas and organize their thoughts using graphic organizers. During the drafting stage, they can focus on generating content and writing a first draft. During the revising stage, students can focus on improving their writing by adding or deleting content, clarifying ideas, and improving sentence structure. The editing stage involves reviewing and correcting grammar, punctuation, and spelling errors. Finally, during the publishing stage, students can share their writing with their classmates, providing them with feedback and encouragement.

Another effective method for developing writing competence is to incorporate writing into other subjects. Teachers can assign writing tasks related to science, social studies, or literature. This approach not only helps students develop their writing skills but also enhances their understanding of the subject matter. For example, students can write a descriptive paragraph about a science experiment, a persuasive essay about a social issue, or a summary of a literary work.

Using authentic materials is also a useful method for developing writing competence. Teachers can use real-world materials, such as news articles, advertisements, or product descriptions, to teach writing skills. These materials expose students to different writing styles, genres, and formats, helping them develop their writing skills in a meaningful context.

Peer feedback is another effective method for developing writing competence. Teachers can encourage students to provide feedback on their classmates' writing, providing constructive criticism and suggestions for improvement. This approach not only helps students improve their writing but also enhances their communication and collaboration skills.

METHODOLOGY

The review process involved searching for relevant articles in electronic databases such as Google Scholar, Ziyonet, ERIC, and JSTOR, using keywords such as "writing competence", "EFL students", and "methods of developing writing competence". After conducting a preliminary search, the articles were screened based on their relevance and quality, and the most relevant ones were selected for the review.

Developing writing competence in 5th grade EFL (English as a Foreign Language) students requires a structured approach that incorporates various methods to ensure effective learning. The following methodology can be employed to achieve this goal:

Assessing prior knowledge: Before introducing new writing concepts, it is essential to assess what the students already know. This can be done through a pre-assessment activity that evaluates the students' writing skills, such as their ability to write sentences, paragraphs, and essays.

Introducing writing concepts: Once the students' writing skills have been evaluated, new writing concepts should be introduced gradually. This may include teaching the parts of a sentence, paragraph structure, and the writing process (prewriting, drafting, revising, editing, and publishing).

Providing models: Providing students with models of good writing can help them understand what is expected of them. Teachers can use published works, such as essays,

stories, and articles, or samples of students' work from previous years.

Guided practice: After introducing new writing concepts, students need guided practice to apply what they have learned. Teachers can provide writing prompts or exercises that focus on specific writing skills, such as using descriptive language, organizing ideas, or using transitional words.

Independent practice: Once students have demonstrated an understanding of the writing concepts, they should be given opportunities for independent practice. This can include writing assignments, such as journal entries, essays, or research papers, that allow students to apply what they have learned.

Feedback and evaluation: Providing feedback on students' writing is essential for their growth and development. Teachers can provide feedback through peer review, teacher conferences, or written comments. It is also important to evaluate students' writing formally through assessments, such as rubrics or standardized tests.

Integration with other skills: Writing skills should be integrated with other language skills, such as reading, listening, and speaking. Teachers can provide opportunities for students to practice writing in response to reading assignments or to summarize information they have heard in class [1, 3].

DISCUSSION

Developing writing competence is a crucial aspect of English as a foreign language (EFL) education. It requires a systematic and structured approach to teaching writing skills to fifth-grade EFL students [12, 13]. In the scientific discussion, we will explore some effective methods for developing writing competence in fifth-grade EFL students. Several methods have been used to develop writing competence among fifth-grade EFL students, including process-oriented approaches, product-oriented approaches, and genre-based approaches. Process-oriented approaches focus on the writing process, emphasizing pre-writing activities, drafting, revising, and editing. Product-oriented approaches, on the other hand, focus on the final product, with emphasis on accuracy and fluency. Genre-based approaches emphasize the study of various text genres, including their structures, features, and purposes. Developing writing competence is an essential skill for 5th-grade EFL (English as a Foreign Language) students, as it enables them to express their thoughts, ideas, and experiences in written form. Various methods can be used to enhance writing competence, including process-oriented approaches, genre-based approaches, and collaborative writing.

Process-oriented approaches emphasize the writing process rather than the final product. Students are encouraged to brainstorm, outline, draft, revise, and edit their writing, with feedback provided at each stage. This approach helps students to develop critical thinking, creativity, and self-reflection skills, as they learn to evaluate their writing and make necessary changes to improve it.

Genre-based approaches focus on different genres of writing, such as narratives, descriptive writing, and persuasive writing. Students learn the characteristics of each genre, such as structure, language use, and tone, and are then asked to produce their own writing in that genre. This approach helps students to understand the purpose and audience of different



types of writing, enabling them to write more effectively and confidently.

Collaborative writing involves working in pairs or small groups to produce a piece of writing. This approach helps students to develop interpersonal skills, such as communication, cooperation, and negotiation, as they learn to work together to produce a cohesive and effective piece of writing. It also provides opportunities for peer feedback and evaluation, which can enhance students' critical thinking and self-reflection skills.

CONCLUSION

Thus, developing writing competence among fifth-grade EFL students requires various approaches and methods. Process-oriented approaches are effective in developing critical thinking and problem-solving skills, while product-oriented approaches can enhance grammatical accuracy and sentence structure. Genre-based approaches can help students to produce authentic texts and understand text genres. Therefore, teachers need to choose the appropriate method based on their students' needs, abilities, and learning context. To sum up, developing writing competence in 5th-grade EFL students requires the use of various methods, such as process-oriented approaches, genre-based approaches, and collaborative writing. These methods help students to develop essential skills such as critical thinking, creativity, self-reflection, and interpersonal skills. By providing a supportive learning environment and engaging students in meaningful writing tasks, teachers can help students to become confident and effective writers in English.

In conclusion, developing writing competence in fifth-grade EFL students requires a structured and systematic approach that includes teaching the writing process, incorporating writing into other subjects, using authentic materials, and providing peer feedback. By using these methods, teachers can help their students become proficient writers, which is a valuable skill for their academic and professional success.

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A STUDY ON RESIDENT RURAL AWARENESS ON ILLAM THEDI KALVI SCHEME IN TIRUPUR DISTRICT

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ABSTRACT

This study aimed to assess the level of awareness of the Illam Thedi Kalvi (ITK) scheme among rural residents in Tiruppur district. The ITK scheme was launched by the Tamil Nadu government to provide education to children of migrant workers who often miss out on schooling due to frequent relocation.

The study was conducted in six villages of Tiruppur district using a survey questionnaire.

A total of 300 respondents were selected through a random sampling technique. The results showed that the awareness level of the ITK scheme was relatively low, with only 43% of respondents having heard about the scheme. Among those who were aware of the scheme, only 22% knew the details of the scheme, such as the eligibility criteria and the benefits provided.

The study also found that there was a significant association between the level of education and awareness of the ITK scheme. Those with higher education were more likely to have heard about the scheme and understood its benefits. The study recommends that the government should conduct more awareness campaigns to reach out to rural communities, especially those with lower levels of education, and ensure that all eligible children are enrolled in the ITK scheme.

KEYWORDS: Education

INTRODUCTION AND DESIGN OF THE STUDY INTRODUCTION

The scheme was started to bridge the learning gap that had arisen among students due to the closure of schools during the pandemic-induced lockdown and to make the students to learn joyfully and help the students to come out of the stressful family situation due to pandemic. The benefits of in-person classes could be more than online classes, and the objective of the scheme was to impart education to children at home freely.

The present study focuses on the effectiveness of Illam thedi kalvi scheme and level of participation of volunteers in rural area of Tiruppur District. Government has initiated various programmes to recover the people from pandemic. This scheme is one of them for the holistic development of the child. The major findings are scheme is implemented effectively and High level of participation was found among volunteers. Hence, awareness about using technology to update their bank details and online attendance is required. Volunteers have to take steps to increase the number of students in the centre and work effectively to achieve the objective of our government.

OBJECTIVES OF THE FINDINGS

- To ascertain the socioeconomic status of the populace.
- To determine whether or not the "ILLAM THEDI KALVI" scheme is used and known to the public.
- To assess which factors, influence the population's utilisation of the scheme.
- To identify the overall satisfaction of the people.



SCOPE OF THE STUDY

The survey could help the government figure out how well-known its programmes are to the general public. The results of the survey can therefore be used by the government to create wise policies and initiatives for educating the populace. The purpose of this study is to ascertain how widely used and known the Illam thedi kalvi scheme system is by the general public. With a focus on rural area of Tiruppur district, the study's goal is to ascertain how well-known and utilised the Illam thedi kalvi programme is among the general public.

RESEARCH METHODOLOGY RESEARCH DESIGN

A research methodology is a way to describe how a researcher plans to conduct their investigation. It is a logical, methodical approach to a research issue. A methodology outlines a researcher's approach to the study in order to guarantee trustworthy, valid findings that meet their goals and objectives.

SAMPLE DESIGN

The convenient sampling method was adopted in this research.

METHODS OF DATA COLLECTION PRIMARY DATA

The primary data have been collected through structured questionnaires. The questionnaire was filled by 120 students benefited by Illam Thedi Kalvi.

SECONDARY DATA

The secondary data was collected from various sources like Articles, Journals, Wikipedia, Related Websites.

SAMPLING TECHNIQUE

For the investigation, convenient sampling was applied.

SAMPLE SIZE

120 respondents made up the sample size for the study, and a structured questionnaire was used to gather the data.

AREA OF STUDY

The area of the research will be confined to the scheme launched and on-going process in the rural area of Tiruppur district

TOOLS FOR ANALYSIS

- Simple percentage analysis.
- Ranking Analysis.

SIMPLE PERCENTAGE ANALYSIS

Percentage analysis is used in making comparisons between two or more series of data. Percentage is used to describe relationships. Percentage can also be used to compare the relative terms, the distribution of two or more series of data.

$$\text{Simple percentage method} = \frac{\text{Number of respondents replied}}{\text{Total number of respondents}} * 100$$

The information given by the proprietor will be influenced by their personal profile likeage, educational qualification, nature of business and so on. So, to have an idea on their personal profile a percentage analysis was carried out.

RANK ANALYSIS

A rank analysis is any of several statistics that measure an ordinal association, the relationship between ranking of different ordinal variables or different ranking of the same variables, where a "ranking" is the assignment of the labels "first", "second", "third", etc., To different of a particular variable. A rank analysis measures of similarity between two rankings, and can be used to assess the significance of the relation between them. It is not necessarily a total order of object because two different objects can have the same ranking.

The ranking themselves are totally ordered.



LIMITATIONS OF THE STUDY

- The research study is based on Questionnaire collected from the Respondents.
- This study is focused with special reference rural area of Tiruppur district.

REVIEW OF LITERATURE

M. Uma and arthi arulmoorthy (2019) “a study on entrepreneurs' perceptions of government schemes”. the study only had 100 participants. the above study discovered that there was a lack of awareness among the people about various entrepreneurship schemes during the initial stage of implementation; however, the level of awareness among the entrepreneurs has increased rapidly since then, and it was also discovered that there are a number of entrepreneurs who have benefited and are still benefiting from various schemes provided by the government. the study focused mainly to find out level of the awareness and entrepreneurs perception towards the government schemes as most of the entrepreneurs are unaware of the government schemes. through the study finally concluded that awareness increased rapidly through and number of employees are benefited through the schemes.

Anu Devi (2019) “a study on the awareness of bpmp street vendors towards government schemes in bengaluru”. this article highlights that the street vendors play an immense role in building the urban culture. the study reveals that majority of the respondents are not aware of the changes in monetary policy and benefits that the government of karnataka provide to the street vendors. this study investigated the level of awareness and the utilization of the government schemes available to the street vendors. this study investigated the level of awareness towards government schemes among street vendors. as most of the vendors are unaware of the government schemes, this study suggested an awareness level among street vendors towards government schemes.

TABLE 4.1
THE TABLE SHOWING GENDER WISE SIMPLE PERCENTAGE OF THE RESPONDENTS

GENDER	NO.OF. RESPONDENTS	PERCENTAGE (%)
MALE	50	42
FEMALE	70	58
TOTAL	120	100

(Source: Primary data) INTERPRETATION

From the above table 42% of the respondents are male and the 58% of the respondents are female.

INFERENCE

The majority (58%) of the respondents are Female.

1. Uma .M, Arthi arulmoorthy (2019) , A study on awareness towards central government schemes , International journal of research and analytical reviews , vol: 6 , page : 109 – 115

2. Devi Anu. “A Study on the Awareness of BPMP Street Vendors Towards Government Schemes in Bengaluru”. International Journal of Research in Engineering, Science and Management Volume-2, Issue-2, February-2019. www.ijresm.com. | ISSN (Online): 2581-579.



TABLE 4.2
AWARNESS MODE WISE SIMPLE PERCENTAGE ANALYSIS OF THE RESPONDENTS

AWARENESS MODE	NO.OF. RESPONDENTS	PERCENTAGE (%)
Newspaper	12	10
Word of mouth	67	56
Radio	7	6
Social media	10	8
TV Ads	24	20
TOTAL	120	100

INTERPRETATION

From the above 10% of the respondent's awareness mode of the scheme is Newspaper, 56% of the respondent's awareness mode of the scheme is by Word of mouth, 6% of the respondent's awareness mode is by Radio, 8% of the respondent's awareness mode is by social media and 20% of the respondent's awareness mode is by the TV ads.

INFERENCE

Majority (56%) of the respondent's awareness mode towards the scheme is by Word of mouth.

TABLE 4.3
OPINION WISE SIMPLE PERCENTAGE ANALYSIS OF THE RESPONDENTS

OPINION ON UTILIZATION OF SCHEME	NO.OF. RESPONDENTS	PERCENTAGE (%)
Availability of Illam Thedi Kalvi	98	82
Quality of Illam Thedi Kalvi	12	10
Convince in accessing Illam Thedi Kalvi	10	8
TOTAL	120	100

(Source: Primary data)

INTERPRETATION

The above table shows 82% is the availability of Illam Thedi Kalvi, reason for using the programmed, while quality cited by 10%, access to 8% of respondents as their reason.

INFERENCE

Majority (82%) of the respondent's opinion towards the availability of Illam Thedi Kalvi, reason for using the programmed.

TABLE 4.4
OPINION WISE SIMPLE PERCENTAGE ANALYSIS OF THE RESPONDENTS

OPINION ON UTILIZATION OF SCHEME	NO.OF. RESPONDENTS	PERCENTAGE (%)
Availability of Illam Thedi Kalvi	98	82
Quality of Illam Thedi Kalvi	12	10
Convince in accessing Illam Thedi Kalvi	10	8
TOTAL	120	100

(Source: Primary data)

INTERPRETATION

The above table shows 82% is the availability of Illam Thedi Kalvi, reason for using the programmed, while quality cited by 10%, access to 8% of respondents as their reason.

INFERENCE



Majority (82%) of the respondent's opinion towards the availability of Illam Thedi Kalvi, reason for using the programmed.

FINDINGS

1. The majority (58%) of the respondents are Female.
2. Majority (56%) of the respondent's awareness mode towards the scheme is by Word of mouth.
3. Majority (82%) of the respondent's opinion towards the availability of Illam Thedi Kalvi, reason for using the programmed.
4. Majority of I rank indicates that the scheme fulfils the individual expectations is Free of cost of the scheme.

SUGGESTIONS

- To enchasing and supporting to more teaching community.
- For the safety of children in schools, the government has set up a special committee in each school.
- Members of the committee create awareness among the children and also will try to gain the confidence of the parents.

CONCLUSION

The scheme Illam thedi Kalvi scheme, All the respondents understand the scheme's objective and works accordingly. If the scheme is extended even after the project period of six months, it would be more useful for the poor children those who cannot afford tuition fee privately. The scheme would give the way for a holistic development of children. Association of teachers, parents, volunteers in implementing the scheme is necessary to achieve the objective of making children fully developed citizens.

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E-SOLUTION FOR MINDANAO RESOURCES: AN ONLINE ANNOTATED BIBLIOGRAPHY

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ABSTRACT

Mindanao is rich in culture and its natural resources, but little is known about it. Providing available resources online is one way of learning about this beautiful island. This study was undertaken to identify the available Mindanao resources and to make an annotation of the collected local resources through the use of Librarika. Furthermore, the bibliographic information of the Mindanao resources becomes accessible and retrievable, thus, making the list of an online annotated bibliography available in the different libraries in Mindanao. This project study aimed to design an E-Solution for Mindanao resources online annotated bibliography. Using quantitative and qualitative descriptive design, test and evaluation of the functionality and aesthetic design of the "E-Solution for Mindanao Resources: An Online Annotated Bibliography" was developed. E-Solution for Mindanao resources project helps the users to easily access the availability of online annotated bibliography of Mindanao resources because of its eight functional tabs namely; home, catalog, search catalog, database A-Z, top collections, new collections, my account and ask a librarian. Results showed that E-Solution for Mindanao Resources: An Online Annotated Bibliography is functional and competitive in its aesthetic design. It is recommended that this E-Solution for Mindanao resources project be visible and accessible online and be continually updated by the researcher regarding developments in Mindanao resources and annotated bibliography.

KEYWORDS: *Mindanao Resources, Online Annotated Bibliography, Librarika, E-Solution for Mindanao resources*

INTRODUCTION

Every society makes provisions for the transmission of its cultural heritage to incoming generations. In fact, history is a very significant topic that could help transmit our cultural heritage including our local history and this must be given attention to by the people in general. History is not only for the historians, historiographers, researchers, people in the academe teaching history subject and for all people in the community.

Mindanao, with a number of cities to its name, is the second largest island in the Philippines. It is a place rich in traditions, cultures and beliefs. There are a lot of resources both print and non-print about the local history in Mindanao. Additionally, Mindanao is known as the land of promise because of its rich biodiversity and natural resources. The land holds an incredible wealth from nature, but also has dark moments of truth (Muslim & Cagoco-Guiam, 1999).

There has been a vast number of people lacking interests and understanding on local history, especially in Mindanao (Funtecha, 2008, Mignolo, 2012). This may have been brought about by inadequate background in history; less conscious of the value of the past to their present life and such ignorance or apathy may have resulted from the dearth of local materials, especially on local history which is closer to the hearts and minds of the Mindanaoans.

Mindanao is a safe place to stay and to visit. There is that kind perception Mindanao is associated with violence, but one who stays here longer will realize that it's not true, there are many areas that are quite safe and safer than Manila. In United States, with a positive note, the island's chief city and country's second largest, Davao, ranked the world's fifth safest city last year on crowd-sourcing survey site (Jennings, 2016). Relatively, the Philippines remain safe amid security concerns and travel warnings issued by other countries (Hicken, 2009, Mendez, 2019).

Yet it is the misrepresentation of history by not taking into full account the unique character of the historical and cultural experiences of the various ethnic groups in scattered geographical units of the country especially in Mindanao that gives it a bleak and misunderstood image; thus, affecting the promotional efforts for and of Mindanao. It is in this aspect that an E-Solution for Mindanao Resources which is an online annotated bibliography is seen necessary. To fully understand and have a good representation of the rich collections of the history of Mindanao, the researcher identified, gathered and made the local resources available online with the help of E-Solution for Mindanao Resources project.

It also drove the interest of the researcher to make an annotation of all the local resources in Mindanao since there is no available



annotated bibliography in this locality for easy access by any researcher and no related study conducted in this locality. Gathering of online annotated bibliography of local resources is very essential in Mindanao because it serves as a backbone of the national history and basis of the people living in the locality to understand and to appreciate their past which is essential in the future development. Through the E-Solution for Mindanao Resources project, the bibliographic information of the Mindanao resources becomes accessible and retrievable thus making the online annotated bibliography available in the different libraries in Mindanao and other libraries of the country.

This study drove the interest of the researcher to identify the available Mindanao resources and to make an annotation of the collected local resources. Gathering and making annotated bibliography of Mindanao resources available online provides a concrete source of significant information about its history thereby enabling its promotion.

THEORETICAL FRAMEWORK

This project study was anchored on McLuhan's Technological Determinism model which seeks to explain social and historical phenomena in terms of one principal or determining factor (Chandler, 1995; de La Cruz Paragas & Lin, 2016). An author noted that this model is indicating that technology doesn't always work out the way it was planned. Therefore, we have a professional responsibility to ensure its long term and downstream effects towards our society, culture and environment (Merkel, 2000).

Technological determinism is used to describe a set of claims made about the relationship between what we generally call technology and society. Two meanings have come into use: (1) an internal, technical logic determines the design of technological artifacts and systems; and (2) the development of technological artifacts and systems determines broad social changes (Kline, 2001).

Moreover, it understood more productively as referring to claims that place a greater emphasis on the autonomous and social-shaping tendencies of technology, technological determinism is a valuable and prominent perspective (Dafoe, 2015 & Dotson, 2015). In addition, technological determinism assumes that a society's technology determines the development of its social structure and cultural values (Chandler, 1995) in which it clearly reinforce as a theory for this study on the use of E-Solution for Mindanao Resources. This is a more realistic propagation of Mindanao Island as a land of promise which can further change the stereotyping mindset and values of misinformed people through utilizing technology in one of the functions in the society.

CONCEPTUAL AND TECHNICAL DESCRIPTION OF THE PROJECT

This project base study adapted the open-source integrated library system called Librarika. Librarika is a cooperatively developed, web-based, and open-source program. It is a system that provides access to the source code, meaning that users are free to see how the system is made. This integrated library system is free for all up to 2,000 titles/records of any local resources. Librarika is an open-source integrated library system that provides easy access and retrieval of bibliographic information and online annotated bibliography of local resources in Mindanao. In this study, the researcher gathered all printed local books about Mindanao, prepared the bibliographic information, the annotations of all the Mindanao resources gathered and encoded them in an integrated library system.

E-Solution for Mindanao Resources: An Online Annotated Bibliography project would be useful to the potential users such as students, historians, librarians, teachers, researchers and others. Librarika helps the users to easily access it to be aware of the availability of online annotated bibliography of Mindanao resources (See Figure 1).

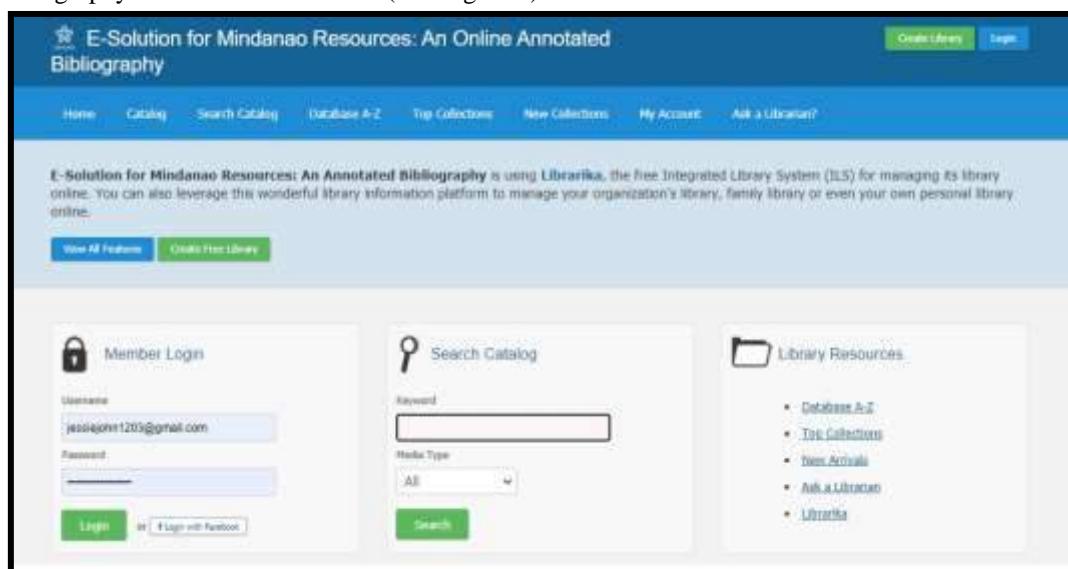


Figure 1: Platform of E-Solution for Mindanao Resources



Librarika consists of eight different tabs and these are: home, catalog, search catalog, database A-Z, top collections, new collections, my account and ask a librarian. The following are the tabs of the Librarika with the technical descriptions of the project:

1. **Home Page of E-Solution for Mindanao Resources.** This is the home page of the E-Solution for Mindanao Resources project. It consists of different tabs like home, catalog, search catalog, database A-Z, top collections, new collections, my account and ask a librarian. In the lower part of the home page, you can access the member login area, the search catalog and the library resources. (See Figure 2)

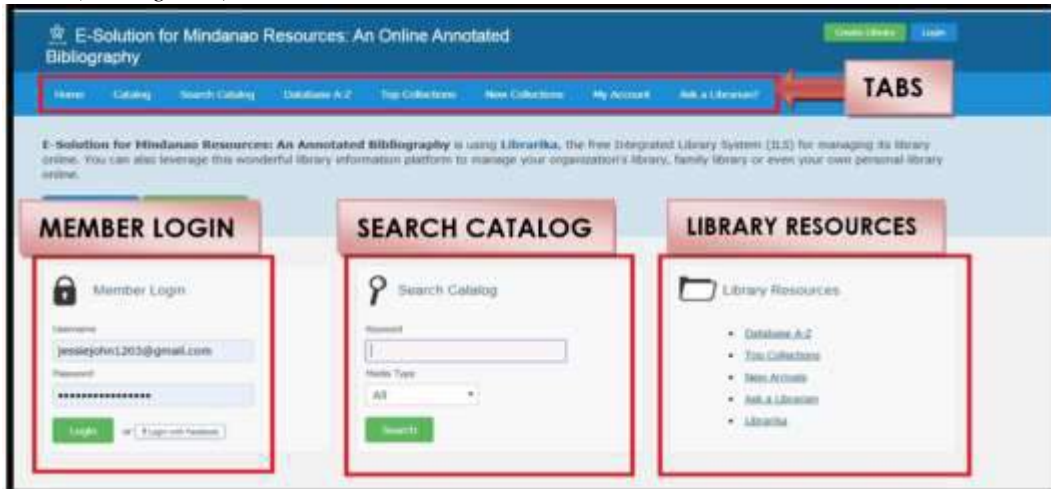


Figure 2: Home Page of E-Solution for Mindanao Resources

2. **Catalog Tab.** This is the appearance of the catalog tab. Catalog tab provides you with the newly cataloged Mindanao resources. It gives you the bibliographic information such as the title of the book, authors/editors, publisher, type and copies. It also consists of sub tabs such as search catalog, categories, authors, publishers and tags. (See Figure 3)

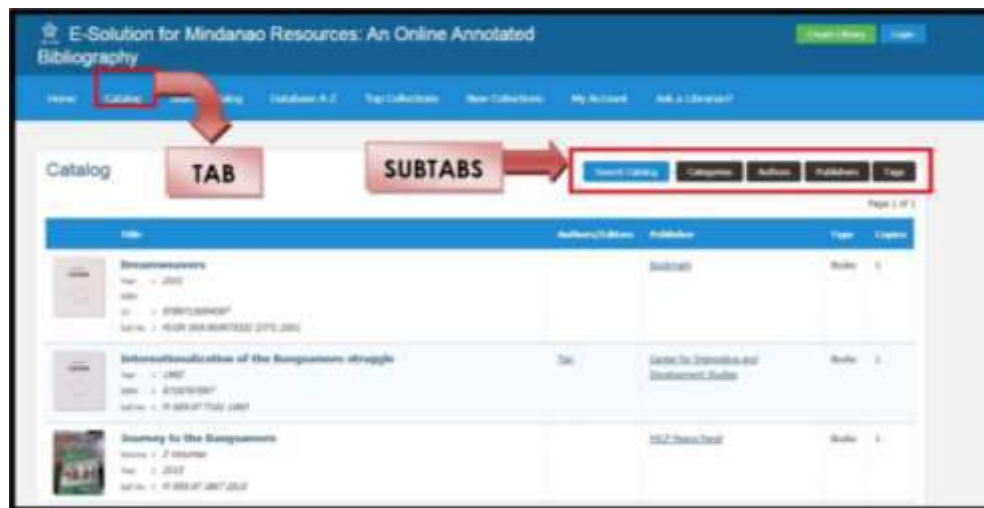


Figure 3: Catalog Tab

3. **Search Catalog Tab.** This is the appearance of the search catalog tab. This tab helps you in searching exact Mindanao resources. All you need to do is to type the correct title of the book; the author, the publisher, etc. You can also choose to extract your search in the search options such as media ID, title, ISBN, ISSN, authors, call number, publisher, tags, category, subject, abstract, and description. (See Figure 4)



Figure 4: Search Catalog Tab

4. **Database A-Z Tab.** This is the appearance of the database A-Z tab. This tab helps in searching for the exact title of the local resources. It is arranged according to the first letter of the book title. All you need to do is to click the letter from A-Z or click the number from 0-9 that represents the title of the Mindanao resources. If you like letter “M”, it gives you all the titles that start with letter M. (See Figure 5 & 6)



Figure 5: Database A-Z Tab

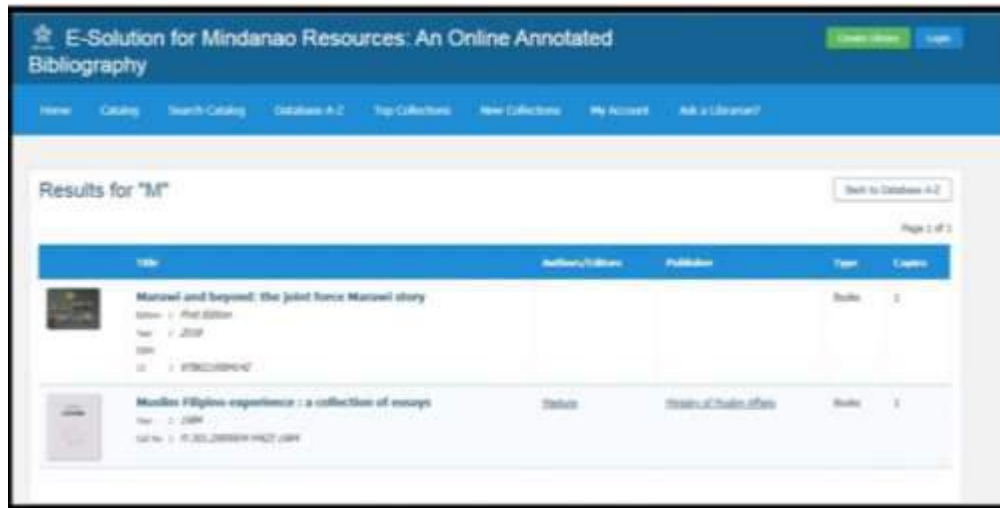


Figure 6: Clicking Letter “M”

5. **Top Collections Tab.** This tab gives you the most searchable Mindanao resources. The system automatically arranges the top collections of your library. It gives you the bibliographic information of the resources such as the title of the book, authors/editors, publisher, types and copies. (See Figure 7)

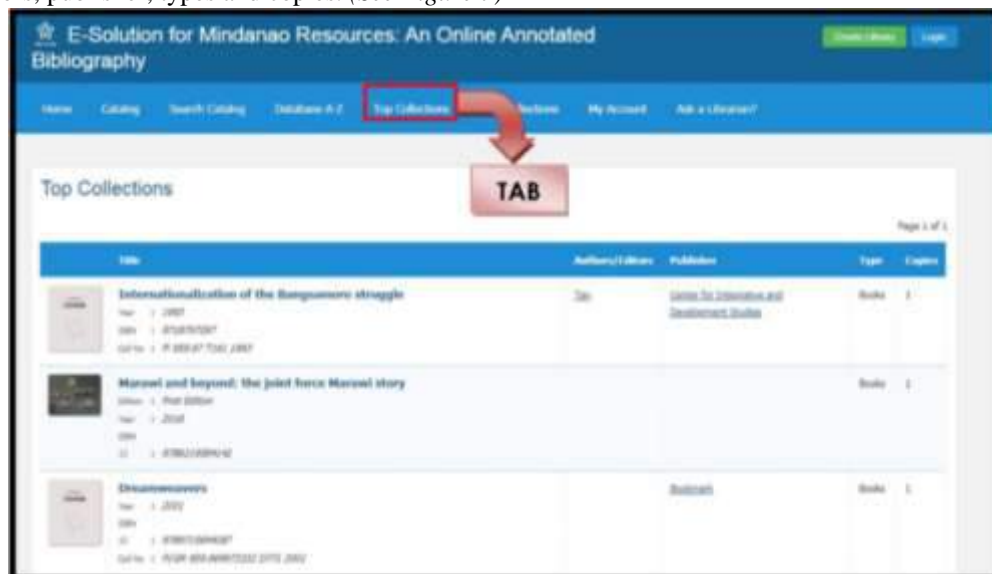


Figure 7: Top Collection Tab

6. **New Collections Tab.** This tab gives you the newly cataloged resources or new collections of your library. The system automatically arranges the newly cataloged resources or new local resources encoded in the library system. It also gives you the bibliographic information of the resources such as the title of the book, authors/editors, publisher, types and copies. (See Figure 8)



Figure 7: Top Collections Tab

7. **My Account Tab.** This tab gives you the details of your Librarika account. You need to type your username, password and then login. (See Figure 9)

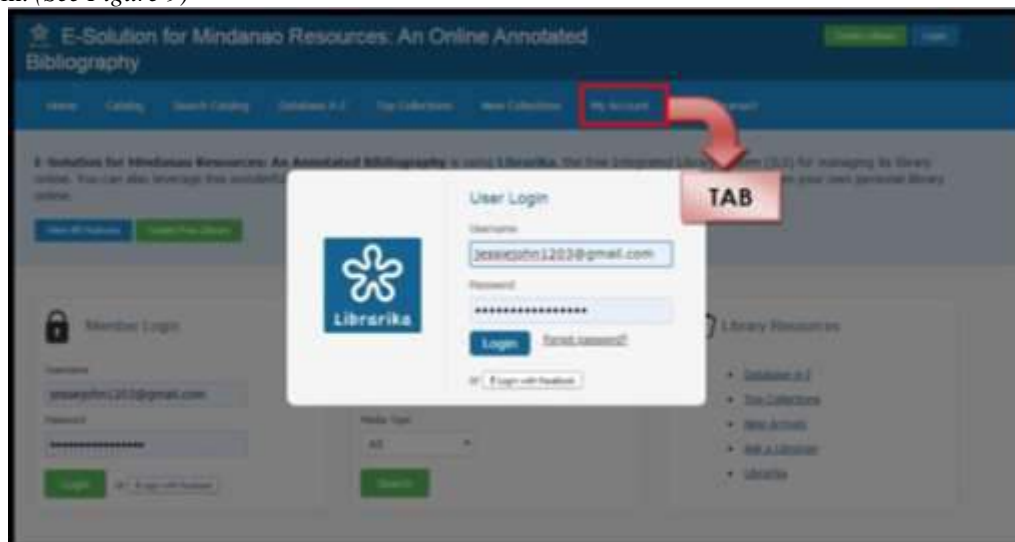


Figure 8: New Collections Tab

8. **Ask a Librarian Tab.** This tab gives the information about the librarian who created the library. It provides you with the e-mail address, the phone number and the website. (See Figure 10)

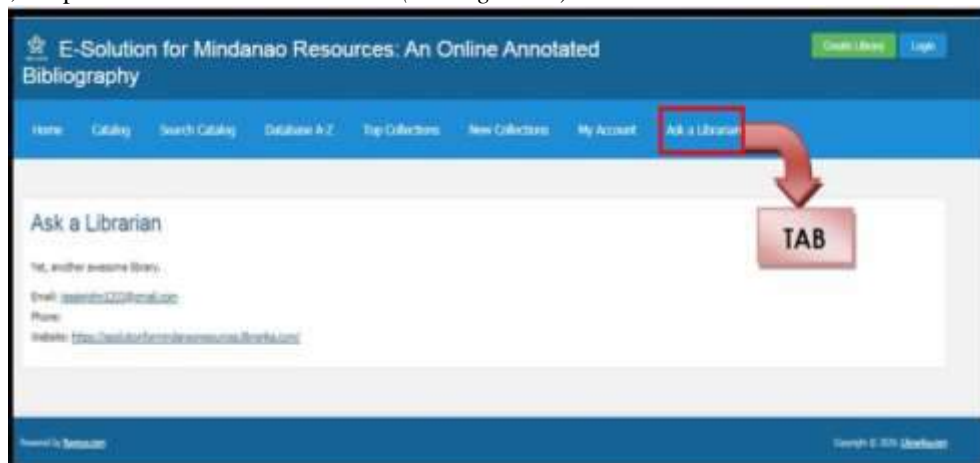


Figure 10: Ask a Librarian Tab



Objectives of the Project

The purpose of the project study was to design an E-Solution for Mindanao Resources: An Online Annotated Bibliography. Specifically, it sought to address the following: (1) create an Annotated Bibliography of Mindanao Local Resources and (2) make the annotated bibliography accessible online to promote the local resources in Mindanao.

TEST AND EVALUATION OF THE PROJECT

This section presents the purpose of test and evaluation of the project, the method of test and evaluation, respondents/participants, research instruments, data gathering procedure, and the results of the tested and evaluated E-Solution for Mindanao Resources: An Online Annotated Bibliography.

Purpose of the Test and Evaluation of the Project (Functionality and Aesthetic Design)

The purpose of the test and evaluation was to determine the desired functionality and aesthetic design of the E-Solution for Mindanao Resources project. Specifically, it sought answers to the following questions: (1) Does it make annotated bibliography of Mindanao resources available? and (2) Does it make the annotated bibliography accessible online to promote Mindanao?

The Method of Test and Evaluation

As a project study, E-Solution for Mindanao Resources: An Online Annotated Bibliography employed development research design where its product-development process is analyzed and described, and where the final output is evaluated. For the purpose of testing and evaluating the functionality of the present project, this development research employed descriptive research design which can be both quantitative and qualitative.

Respondents/Participants of the Development Study

The respondents/participants of the study were the selected librarians, library staff, faculty and library science students of Mindanao regions through the use of Google form. There were 60 respondents from different regions in Mindanao (three from Region IX; three from Region X; nine from Region XI; forty-one from Region XII; two from Region XIII and two from BARMM).

They were chosen as respondents/participants of the study through purposive and convenient sampling technique. Purposive sampling technique was used to get the participants who can appropriately give information on the observable facts of the E-Solution for Mindanao Resources project. In the same manner, convenient sampling technique was also employed since the participants are easily gathered through the use of social media like Facebook, for quantitative and qualitative evaluations for the E-Solution for Mindanao Resources project.

Research Instruments

A quantitative survey questionnaire validated by experts in the field of librarianship was used to test and evaluate the functionality and the aesthetic design of E-Solution for Mindanao Resources project. The questionnaire also provided a space for the participants' qualitative data of evaluation. The rating scale below was used to interpret the quantitative data in testing and evaluating the functionality of the E-Solution for Mindanao Resources project.

Range	Description	Descriptive Interpretation
4.20 – 5.00	Strongly Agree	Highly Functional
3.40 – 4.19	Agree	Functional
2.60 – 3.39	Undecided	Moderately Functional
1.80 – 2.59	Disagree	Slightly Functional
1.00 – 1.79	Strongly Disagree	Not Functional

In the same manner, the following rating scale was used for the quantitative interpretation of the data in testing and evaluating the aesthetic design of the E-Solution for Mindanao Resources project.

Range	Description	Descriptive Interpretation
4.20 – 5.00	Strongly Agree	Highly Competitive
3.40 – 4.19	Agree	Competitive
2.60 – 3.39	Undecided	Moderately Competitive
1.80 – 2.59	Disagree	Slightly Competitive
1.00 – 1.79	Strongly Disagree	Not Competitive



Meanwhile, the qualitative data gathered in testing and evaluating the functionality and the aesthetic design of the E-Solution for Mindanao Resources project, the following method of the suggested by Tudy and Gauran-Tudy (2020), which was patterned from the method by Colaizzi (1978).

Significant Statements of the Participants	Participant's Code	Formulated Meanings	Recurring Themes
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Data Analysis and Interpretation

This section deals with the analysis and interpretation of the data gathered for the project developmental study. Analysis and interpretation are presented according to the test and evaluation of functionality and aesthetic design of the project. This project developmental study employed survey questionnaires to gather quantitative and qualitative data for analysis and interpretations. The researcher analyzed the quantitative data by using the mean score whereas thematic analysis was employed to interpret the qualitative data.

On one hand, the presentation on the functionality of the E-Solution for Mindanao Resources project covers the following questions: Is the platform of E-Solution for Mindanao Resources project user friendly?; Is the information displayed in the E-Solution for Mindanao Resources project useful and adequate?; Is the Annotated Bibliography of the Mindanao resources accessible online?; Is the location of the Mindanao Resources indicated in the E-Solution for Mindanao Resources project?; and Is the E-Solution for Mindanao Resources project useful in promoting Mindanao?

On the other hand, the presentation on the aesthetic Design of the E-Solution for Mindanao Resources project covers the following aspects: the font size of E-Solution for Mindanao Resources project is easy to read, the colour and design used of E-Solution for Mindanao Resources project are appealing, the platform of E-Solution for Mindanao Resources project is aesthetically designed, the arrangement of E-Solution for Mindanao Resources project is logical and neatly grouped in the home page, the harmony among the colours, text, links and background catch attention and encourage users to continue library activity using the project.

The Quantitative Presentation of Functionality and Aesthetic Design of the Project

Displayed in Table 3 and 4 are the quantitative data pertaining to the functionality and aesthetic design of the E-Solution for Mindanao Resources project based on the test and evaluation of the respondents.

Table 3 shows the ratings of the sixty (60) respondents on the functionality of the E-Solution for Mindanao Resources project. Respondents' rating revealed that the E-Solution for Mindanao Resources project is highly functional with the mean score of 4.55.

Table 3. Level of the Functionality of the Project

	N	Mean	Std. Dev	Descriptive Rating
FPQ1. The platform of E-Solution for Mindanao Resources project is user friendly.	60	4.50	.597	Highly Functional
FPQ2. The information displayed in the E-Solution for Mindanao Resources project is useful and adequate.	60	4.53	.536	Highly Functional
FPQ3. The Annotated Bibliography of the Mindanao resources is accessible online.	60	4.48	.596	Highly Functional
FPQ4. The location of the Mindanao Resources is indicated in the E-Solution for Mindanao Resources project.	60	4.57	.532	Highly Functional
FPQ5. The E-Solution for Mindanao Resources project is a useful project in promoting Mindanao.	60	4.68	.537	Highly Functional
Total	60	4.55	.559	Highly Functional

Meanwhile, Table 4 shows the ratings of the sixty (60) respondents on the aesthetic design of the E-Solution for Mindanao Resources project. As shown, the E-Solution for Mindanao Resources project got a mean score of 4.35 which means a high level of competitiveness in aesthetic design.

**Table 4. Level of the Aesthetic Design of the Project**

	N	Mean	Std. Dev	Descriptive Rating
APQ1 The font size of E-Solution for Mindanao Resources project is easy to read.	60	4.45	.565	Highly Competitive
APQ2 The color and design used of E-Solution for Mindanao Resources project are appealing.	60	4.33	.681	Highly Competitive
APQ3 The platform of E-Solution for Mindanao Resources project is aesthetically designed.	60	4.32	.624	Highly Competitive
APQ4 The arrangement of E-Solution for Mindanao Resources project is nice and neatly grouped.	60	4.37	.551	Highly Competitive
APQ5 In the home page, the harmony among the colors, text, links and background catch your attention and encourage you to continue searching in the project.	60	4.28	.666	Highly Competitive
Total	60	4.35	.618	Highly Competitive

Based on the survey result, respondents consider the E-Solution for Mindanao Resources: An Online Annotated Bibliography project as highly functional and aesthetically highly competitive.

The Qualitative Presentation of Functionality and Aesthetic Design of the Project

Displayed in Table 5 are the thematically analyzed qualitative data pertaining to the functionality and aesthetic design of the E-Solution for Mindanao Resources: An Online Annotated Bibliography the comments of the respondents from the survey questionnaire. Results of the thematic analysis revealed two (2) main themes, namely: the functionality of the E-Solution for Mindanao Resources: An Online Annotated Bibliography and the aesthetic design of the E-Solution for Mindanao Resources: An Online Annotated Bibliography.

Table 5. The Qualitative Data on the Functionality and Aesthetic Design of the E-Solution for Mindanao Resources: An Online Annotated Bibliography According to the Respondents

Significant Statements of the Participants	Participant's Code	Formulated Meanings	Recurring Themes
<ul style="list-style-type: none"> • It is useful for those researchers if the research pertains to the people and places in Mindanao. • Very useful • I will try to use this ILS for our city Library. • Very effective by using it. It directs the user to the most particular information • The E-Solution for Mindanao Resources is also good mapping of local knowledge available in Mindanao Libraries • First of its kind in Mindanao. This is a very good project. Hope it will be beneficial for researchers in not only in Mindanao but also Nationwide. • Useful and nice platform to access Mindanao related collections. 	R12, R14,R19, R20, R23, R26, R31, R32, R35	Most of the respondents said that this E-Solution for Mindanao Resources project is very useful and helpful to the library most especially to those library users and researchers who want to know the Mindanao resources.	Functionality of the Project



<ul style="list-style-type: none"> • Very useful project • It is helpful to give information in an easy way. • I suggest that the design must have a touch of Mindanao Symbol or brand. 	R23	Since this E-Solution for Mindanao Resources project is a free open source integrated library system, the researcher cannot change and place a Mindanao symbol or brand in the system.	Aesthetic Design of the Project
<ul style="list-style-type: none"> • It is highly recommended. • Simple is better. • It is nice project. 	R7, R12, R20	This E-Solution for Mindanao Resources project is simple, better and aesthetically well designed.	Aesthetic Design of the Project

The Functionality of the E-Solution for Mindanao Resources: An Online Annotated Bibliography

One of the common responses of the respondents was on the functionality of the project. First, they said that this project is very useful and helpful to the library most especially to those library users and researchers who want to know the Mindanao resources. Aside from that, they also said that this project is a good tool in promoting Mindanao. It is also helpful for other researcher who wants to be updated with the local resources in Mindanao. In fact, one of the respondents said:

“The E-Solution for Mindanao Resources is also a good mapping tool for local knowledge available in Mindanao Libraries (Librarian from Region XIII)”

(Since this project gathers the Mindanao resources and encodes them in the system with prepared annotated bibliography, it is also a good instrument of mapping local knowledge that is available in different libraries in Mindanao.)

These participants’ evaluations imply that the E-Solution for Mindanao Resources: An Online Annotated Bibliography can really serve the purpose for which it is being made, that is to design an E-Solution for Mindanao Resources: An Online Annotated Bibliography that will create an annotated bibliography of Mindanao local resources and would make the annotated bibliography accessible online to promote Mindanao.

The Aesthetic Design of the E-Solution for Mindanao Resources: An Online Annotated Bibliography

The project needs improvement, especially in the visually appealing design of the system the participants suggested. However, other participants said that this project is simple, better and aesthetically well designed. Specifically, respondents said:

“It needs to improve the aesthetic design of the project to make it more appealing (Librarian from Region XII)”

“I suggest that the design must have a touch of Mindanao Symbol or brand (Librarian from Region XIII)”

(Since this system is a free open source integrated library system, the researcher cannot change the aesthetic design of the project to make it more appealing and cannot place a Mindanao symbol or brand in the system.)

From these evaluations of the participants, it can be deduced that the project needs improvement in its aesthetic design to become more competitive. This finding relates to Barata & Nevado, (2014); Brondoni, (2015); Whaley’s, (2009) statement that considering the improvement of project’s aesthetic design for competitiveness is very important since design is linked to performance of the project and design is connected to highly promising and sustainable innovation.

From these two themes mentioned it can also be gleaned that the E-Solution for Mindanao Resources: An Online Annotated Bibliography is useful, helpful and can really serve the purpose for which it is being made. However, its aesthetic design needs improvement to become more competitive.

CONCLUSIONS AND RECOMMENDATIONS

The conclusions were formulated from the findings of the developmental study and the recommendations were made to help improve the E-Solution for Mindanao Resources: An Online Annotated Bibliography project.

Conclusion

Results of the test and evaluation made by the respondents confirmed that E-Solution for Mindanao Resources: An Online Annotated Bibliography is functional and competitive in its aesthetic design that can address: (1) making annotated bibliography of Mindanao resources available and (2) making the annotated bibliography accessible online to promote Mindanao.

Moreover, the results of the test and evaluation made by the respondents suggested enhancement of the E-Solution for Mindanao Resources: An Online Annotated Bibliography for public acceptability. Based on the qualitative responses, the respondents



observed that the project is less presentable to the public when it is displayed.

Lastly, as indicated in the test and evaluation of the E-Solution for Mindanao Resources: An Online Annotated Bibliography, it is recommended by the librarians in Mindanao that this project is a good tool in locating local resources and in promoting Mindanao. This project is also a good platform for the easy retrieval of the bibliographic records of the Mindanao resources and the list of an online annotated bibliography that is available in the different libraries in Mindanao.

Recommendations

Taking into account the results of the project developmental study, the following recommendations were made:

- 1) The E-Solution for Mindanao Resources project must be visible and accessible online by the librarians, library staff, faculty, library science students and others researchers ;
- 2) The E-Solution for Mindanao Resources project must be continually updated by the researcher regarding developments in Mindanao resources and annotated bibliography;
- 3) There is a need to conduct similar researches in the different localities in Mindanao to help increase the local resources and to continuously promote Mindanao and;
- 4) The E-Solution for Mindanao Resources project must be included in the collection of databases in different types of libraries in the local, national and international level.

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RADIAL HEAD FRACTURES, EPIDEMIOLOGY, ANATOMY, MECHANISM OF INJURY, CLASSIFICATION, IMAGING PRESENTATION, CLINICAL PRESENTATION, MANAGEMENT AND COMPLICATIONS

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SUMMARY

Introduction: In recent years the understanding and comprehension of the elbow has improved, clarifying some aspects of the complex diarthrodial joint. The relevance of the radial head in the biomechanics of the elbow is recognized which helps to improve the management and treatment of fractures at this site. Elbow trauma is the most common origin of proximal radius fractures, this trauma can be direct or indirect and can cause an isolated fracture, a fracture associated with other fractures and ligament injuries.

Objective: to detail the current information related to radial head fractures, epidemiology, anatomy, presentation, clinical evaluation, imaging evaluation, classification, treatment and complications.

Methodology: a total of 42 articles were analyzed in this review, including review and original articles, as well as clinical cases, of which 31 bibliographies were used because the other articles were not relevant to this study. The sources of information were PubMed, Google Scholar and Cochrane; the terms used to search for information in Spanish, Portuguese and English were: radial head fractures, radial head prosthesis, radial head arthroplasty.

Results: Radial head fractures have an incidence of 2.5 per 10,000 per year, which represents 1.7 to 5.4% of all fractures. Most radial head injuries are the result of a fall on the hand in extension. Usually the affected individuals show limitation of mobility of the forearm and elbow in addition to pain or discomfort when making passive rotational movement of the forearm; they also usually present pain on palpation over the radial head and joint effusion in the elbow. Sometimes there is a fracture-dislocation of the radial head related to a rupture of the interosseous membrane with lesion of the distal radioulnar joint called Essex-Lopresti lesion.

Conclusions: The radial head together with the interosseous membrane of the forearm provide longitudinal stability; when the interosseous membrane is damaged, a proximal migration of the radial head may occur after removal of the radial head. When presenting clinical suspicion of elbow fracture, standard anteroposterior and lateral projections of the elbow should be requested, as well as oblique projections such as the Greenspan projection.



The Manson, Mason-Johnston or Mason classification modified by Hotchkiss is usually used for classification. Among the indications for conservative treatment are solitary, undisplaced or minimally displaced fractures that do not present mechanical blockages in the range of motion or less than 3 mm of displacement. Studies report the effectiveness of open reduction and internal fixation of simple Mason type II fractures; Manson type III fractures are controversial.

Complications usually arise from contracture subsequent to prolonged immobilization or secondary to persistent pain, edema and swelling; which may be due to undiagnosed osteochondral injury of the capitellum.

KEY WORDS: fracture, radius, head, prosthesis, elbow.

INTRODUCTION

In recent years, the understanding and comprehension of the elbow has improved, clarifying some aspects of the complex diarthrodial joint. The relevance of the radial head in the biomechanics of the elbow is recognized which helps to improve the management and treatment of fractures at this site. Elbow trauma is the most common origin of proximal radius fractures, this trauma can be direct or indirect and can cause an isolated fracture, a fracture associated with other fractures and ligament injuries. Radial head fractures can be divided into several types, the most common being the Manson classification. Type I fractures are managed conservatively. Treatment of type II and III injuries is still controversial, so more evidence and testing is needed in these areas. Radial head injuries can range from solitary insignificantly displaced fractures caused by low energy impacts to impacted comminuted fractures caused by high energy mechanisms accompanied by ligament and bone injury. The most common complication of radial head fractures is stiffness. It is important to take into account some factors to decide the treatment of these fractures, such as: the stability of the elbow, the ability to achieve a successful reconstruction and the presence of associated injuries(1-7).

METHODOLOGY

A total of 42 articles were analyzed in this review, including review and original articles, as well as cases and clinical trials, of which 31 bibliographies were used because the information collected was not important enough to be included in this study. The sources of information were Cochrane, PubMed and Google Scholar; the terms used to search for information in Spanish, Portuguese and English were: radial head fractures, radial head prosthesis, radial head arthroplasty.

The choice of bibliography exposes elements related to radial head fractures, epidemiology, anatomy, presentation, clinical evaluation, imaging evaluation, classification, treatment and complications.

DEVELOPMENT

Epidemiology.

Fractures of the radial head have an incidence of 2.5 per 10,000 per year, which represents 1.7 to 5.4% of all fractures, being approximately one third of elbow fractures. The injury occurs mostly in women and in middle-aged patients, the average age being 45 years. Fractures of the head and neck of the radius in children have an incidence of up to 14% of all elbow fractures,

becoming a complicated challenge in the pediatric patient. One third of affected individuals show associated injuries, such as a fracture or ligament injury of the shoulder, arm, forearm, wrist or hand; these usually dictate the treatment. The origin of radial head fractures is frequently from a fall on the outstretched hand(1,8-13).

Anatomy

The radial head articulates with the capitellum and the proximal ulna; some anatomical studies of the radial head show that the head is not circular and maintains a relative displacement. The total rotation of the radial head will depend on it being in a physiological location within the lesser sigmoid notch. The radial head has a fundamental role in the valgus stability of the elbow, however the degree to which it generates this stability is still under debate. The radial part of the radiocapitellar joint is lined by articular cartilage, the 280 degrees of the rim of the head is lined by thick hyaline cartilage in addition to articulating with the sigmoid notch. The blood supply to the radial head is poor, with only a single extraosseous vessel penetrating most of the time. The physiological range of motion of the elbow is 75 degrees of supination, 0 to 150 degrees of flexion and extension and 85 degrees of pronation.

The radial head is a secondary restrictor of the valgus forces and probably its mechanism is displacing the varus-valgus rotation center, reducing the moment of force generated in the medial ligament. After a lesion of the medial collateral ligament, the radial head becomes the primary stabilizer against compressive and valgus forces, therefore, when there is an alteration in this ligament added to the removal of the radial head, valgus instability will increase even more. Radial head arthroplasty is optimal to reestablish stability in these cases. The integrity of the radial head has greater relevance in an injury of the ligaments and musculotendinous units near the elbow. The radial head together with the interosseous membrane of the forearm provide longitudinal stability; when the interosseous membrane is damaged, after removing the radial head, a proximal migration of the radius may occur(1,2,5,8,9,14-18).

Mechanism of Injury

Most radial head injuries are the result of a fall on the hand in extension. High-energy injuries are generated by a fall from a certain height or while playing sports. The radial head fractures upon impact with the condyle. This can happen with a posterolateral rotational force, with a net axial load or by generating a posterior dislocation of the radial head in addition to



a Monteggia fracture-dislocation or a fracture-dislocation of the olecranon. It is usually related to injuries of the elbow ligaments and less usual is its association with fractures of the condyle(8,9).

CLINICAL EVALUATION.

Affected individuals usually show limited mobility of the forearm and elbow as well as pain or discomfort on passive rotation of the forearm; they also usually have pain on palpation over the radial head and joint effusion at the elbow. It is essential to perform an exploration of the distal part of the forearm and wrist on the same side. Sometimes there is a fracture-luxation of the radial head related to a rupture of the interosseous membrane with lesion of the distal radioulnar joint called Essex-Lopresti lesion, this can be inferred by pain when performing movements that force the distal radioulnar joint, or pain on palpation. A valgus instability can be generated with the lesion of the medial collateral ligament, so it should be evaluated, mostly in cases of type IV fractures of the radial head of the radius. Drainage of the hemarthros by a direct lateral approach complemented with injection of a local anesthetic significantly reduces pain, in addition to allowing examination of the range of passive mobility, identifying if there is any degree of mechanical blockage. The severity of radial head fractures is directly related to the occurrence of associated injuries, these usually present various patterns, among which can be divided into the following:

- Radial head fracture and rupture of the interosseous ligament of the forearm.
- Fracture of the radial head and rupture of the medial collateral ligament or capitellar fracture.

- Radial head fracture and posterior dislocation of the elbow.
- Terrible triad: posterior elbow dislocation with fractures of the radial head and coronoid process.
- Fractures posterior dislocations of the olecranon.

Approximately 10% of individuals with a radial head fracture also present fractures of the hand, wrist and scaphoid(3,8,9,19-21).

Imaging Evaluation.

When presenting clinical suspicion of elbow fracture, standard anteroposterior and lateral projections of the elbow should be requested, in addition to complement the oblique projections such as the Greenspan projection, the latter will show more accurately the fracture in case of fracture doubt not evidenced in the first projections, since it allows to observe in a better way the condyle-radial joint; The Greenspan projection is made by placing the forearm in neutral rotation and the beam of rays angled 45° in cephalic direction; this projection. When there is wrist pain and comminuted fractures, it is recommended to order radiographs for comparison. Non-displaced fractures are often difficult to diagnose, however they can be suggested by the positive fat pad sign in the lateral projection. To better visualize the fracture and to plan surgical resolution, it is sometimes necessary to perform a CT scan of the elbow, primarily when there is comminution or displacement of the fragments. Magnetic resonance imaging (MRI) is usually not necessary, however, it assesses soft tissue injuries related to radial head fractures(2,3,8,9).

Figure 1. Anteroposterior and lateral radiographs of the right elbow, showing fracture of the proximal radius.



Source: the authors.

**Classification.**

Mason's classification.

Type I: non-displaced fractures, non-displaced marginal or intra-articular displacement <2 mm. No mechanical block of pronation.

Type II: Displaced marginal fractures or intra-articular displacement >2 mm whether impacted, depressed or angulated. May be accompanied by movement block or incongruence.

Type III: comminuted fractures, affecting the entire radial head. It is considered non-repairable due to its radiographic or intraoperative appearance.

Type IV: fractures related to a dislocation of the elbow "Johnston".

There are other types of classifications such as those of the AO, Condict Cutler, Manson's classification which divided into 3 types, Mason-Johnston's classification which adds type 4 and the Mason's classification modified by Hotchkiss which better defines the need for surgical treatment(1,8,10).

Treatment.

Some aspects present great relevance at the moment of choosing the best treatment strategy, among which we have:

- Joint involvement.
- Displacement.
- Fracture stability.
- Presence of associated injuries in the forearm or elbow.
- Some of the treatment objectives are:
- Achieve stability of the forearm and elbow.
- Correct any blockage of forearm rotation.
- Obtain early range of motion of the elbow and forearm.
- Decrease the likelihood of humero-ulnar osteoarthritis.
- Decrease the probability of radial condyle arthrosis.

The therapeutic decision based on the classification serves as a guide and not as a strict law. Some factors not taken into account in current classification systems are:

- Joint impaction.
- Osteopenia.
- Radiocapitellar malalignment.
- Metaphyseal bone loss(3,8).

Conservative Treatment.

Most solitary fractures of the radial head can be managed conservatively. Indications include solitary, undisplaced or minimally displaced fractures with no mechanical blockage in range of motion or less than 3 mm of displacement. Consideration should be given to fracture stability, maintenance of forearm rotation and radiocapitellar alignment. Generally, conservative treatment involves immobilization time, use of a sling and then an increase in range of motion, generally recommended at 24 to 48 hours after the injury or according to pain. There are studies that recommend the use of an arthrocentesis of the radial condyle joint, with or without application of local anesthesia to reduce pain. If the pain is maintained, it suggests complementary examinations such as a magnetic resonance that can evidence a

contracture and inflammation suggesting a fracture of the capitulum. Conservative management usually presents good evolution in up to 80% of the cases. Simple fractures with displacement between 2 and 5 mm can be treated conservatively or with internal fixation(3,8,9,22-25).

Surgical treatment.

The orthopedist should evaluate the aspects of the fracture, such as comminution, stability, joint depression and associated injuries for decision making.

Among the most viable alternatives for surgical resolution are:

- Excision.
- Internal fixation.
- Excision and arthroplasty.

Surgical treatment is only indicated in a displaced partial fracture of the Mason II radial head when there is blockage of mobility, which can be evaluated by placing local anesthesia with lidocaine in the elbow joint. A relative indication is a fragment larger than 2 mm that does not disrupt motion. A Kocher approach is usually performed to land just above the radial head; if possible, the uninjured lateral collateral ligament complex should be preserved. For surgical management, the lateral approach is mostly used, making an incision over the lateral epicondyle and running from the lateral aspect of the humerus to the proximal end of the radius. The Kocher interval between the extensor carpi ulnaris and anconeus is frequently used and can be extended if required. The pronated forearm protects the posterior interosseous nerve. In addition, care should be taken not to injure the lateral ulnar collateral ligament as this can destabilize the elbow. Another approach used is that of Kaplan, which uses the interval between the extensor digitorum communis and the extensor carpi radialis brevis, being more anterior it does not interrupt the lateral ulnar collateral ligament. Hotchkiss showed the division of the extensor digitorum communis being the anterior approach to the lateral ulnar collateral ligament complex. When posterior or medial exposure is needed, consideration should be given to using a posterior midline cut followed by full-thickness flap elevation medially and laterally. Another option is resection of the comminuted radial head to access a coronoid fracture. If necessary, separate accesses can be made(3,8,26-28).

When there is a complex injury, the pieces of the radial head may be displaced, with minimal or no soft tissue insertion and instability, for which an open reduction with internal fixation is usually performed with the intention of providing a stable and reliable fixation, generally in simple patterns, the ideal would be to provide a stable and rigid fixation of the articular surface, besides reestablishing the normal alignment of the radial head and neck, as well as reestablishing the articular congruences. An alternative for temporary reduction of simple partial joint fractures are K-wires or fracture reduction clamps. When an unstable elbow or forearm injury occurs, it is sometimes better to remove the remnants of the radial head and replace it with a metal prosthesis. For some comminuted fractures of complicated reduction, the "on table" reconstruction technique can be tried,



which consists of the removal of the comminuted fragments for reconstruction on a table, outside the individual undergoing surgery, for subsequent reinsertion and fixation to the neck(3,8,29).

When a fracture-dislocation of the forearm or elbow plus a total fracture of the radial head and/or neck occurs, the possibility of an open reduction with internal fixation is usually kept open when a stable and reliable fixation is achieved, otherwise it is better to opt for radial head arthroplasty. Removal of the radial head in these individuals often results in instability. There are several models of prostheses on the market with differences in their stems and heads.

- There are stems: cemented, loose and press-fitted,

- There are metal heads: anatomical, circular monopolar and circular bipolar. Bipolar prostheses are cemented in the radial neck.

Radial head replacement has been associated with a higher rate of patient satisfaction, lower complication rate and better outcome than open reduction with internal fixation(3,8,13,30).

The ideal fracture to perform an open reduction with internal fixation is one that has 3 or less articular fragments, with absence of impaction and deformity, with pieces of sufficient size and bone quality to place the screws, besides having no or minimal metaphyseal bone loss. After the reconstruction with screws, the head of the radius is fixed to the neck of the radius with a plate in the posterior region so as not to limit the rotation of the forearm(8,9).

Figure 2. Radial head prosthesis implant.



Source: The Authors.

The theoretical rationale for a prosthetic replacement is to use it as a spacer trying to eliminate the risk of proximal migration of the radius. Both titanium and vitalium metal radial head implants are frequently used and are the implant of choice in unstable elbows; silicone implants some research suggests poor function. A problem in radial head arthroplasty is the placement of the appropriate size of the cephalic implant, which is sometimes

larger than adequate. As for the removal of the radial head is rarely indicated, however it can be considered in isolated lesions in acute phase and is not recommended in the possibility of instability. It is recommended to use a direct lateral approach, being careful not to injure the posterior interosseous nerve, so sometimes it is suggested to perform a pronation of the forearm. The level of cut must be proximal to the annular ligament. When



there is proximal migration of the radius with symptoms, a radioulnar synostosis is sometimes necessary. In Manson type II and III fractures, late excision usually provides good results. Contemporary evidence advocates open reduction and internal fixation in simple Mason type II fractures. Controversy still exists regarding the management of Mason type III fractures. In recent years, studies demonstrate the effectiveness of radial head replacement in almost all individuals with Mason type III fractures with 3 or more fracture fragments(3,8).

As previously mentioned the Essex-Lopresti injury is a longitudinal break of the interosseous membrane of the forearm, usually related to a fracture of the radial head and/or to dislocation

related to injury of the distal radioulnar joint. The damage of the distal radioulnar joint is sometimes difficult to demonstrate, being pain its main characteristic, it is important to perform an assessment in lateral projection of the radioulnar joint, in addition to achieving the stability of the elements of the injury. When this lesion is present, at the moment of removing the head of the radius, a proximal migration of the radius may occur. Management is by repair or replacement of the radial head in addition to evaluation of the distal radioulnar joint.

In post-stable fixation care, it is essential to quickly begin active or active-assisted flexion-extension and pronation-supination exercises(8,9,21).

Figure 3. Fluoroscopic image, postoperative radial head arthroplasty.



Source: The Authors.

Complications

They are usually caused by contracture subsequent to prolonged immobilization or secondary to persistent pain, edema and inflammation; which may be due to an undiagnosed osteochondral lesion of the capitellum. After a short period of immobilization, pronation-supination and flexion-extension movements should be performed. With programmed and supervised physiotherapy there is evidence of a better response. Injury to the interosseous membrane, distal radioulnar joint or triangular fibrocartilage can trigger chronic pain. Post-traumatic radial condyle osteoarthritis may occasionally occur when there is joint incongruence or in case of free osteochondral fragments. Complex regional pain syndrome sometimes occurs after conservative or surgical management of radial head fractures and

is usually associated with radial head injury. Occasionally, a hidden elbow fracture-dislocation may occur, leading to late dislocation due to the absence of treatment of the damaged ligaments(8,9).

Among the complications of radial head arthroplasty are the following:

- Radiocapitellar arthritis.
- Loosening of the stem.
- Failed components.
- Too large prosthesis(1,31).

CONCLUSIONS

Fractures of the radial head have an incidence of 2.5 per 10,000 per year, which represents 1.7 to 5.4% of all fractures. Most radial



head injuries are the result of a fall on the hand in extension. Usually the affected individuals show limitation of mobility of the forearm and elbow in addition to pain or discomfort when making passive rotational movement of the forearm; they also usually present pain on palpation over the radial head and joint effusion in the elbow. Sometimes there is a fracture-luxation of the radial head related to a rupture of the interosseous membrane with lesion of the distal radioulnar joint called Essex-Lopresti lesion. The radial head together with the interosseous membrane of the forearm provide longitudinal stability; when the interosseous membrane is damaged, a proximal migration of the radial head may occur after removal of the radial head. When presenting clinical suspicion of elbow fracture, standard anteroposterior and lateral projections of the elbow should be requested, as well as oblique projections such as the Greenspan projection. The Manson, Mason-Johnston or Mason classification modified by Hotchkiss is usually used for classification. Among the indications for conservative treatment are solitary, undisplaced or minimally displaced fractures that do not present mechanical blockages in the range of motion or less than 3 mm of displacement. Studies report the effectiveness of open reduction and internal fixation of simple Mason type II fractures; Manson type III fractures are controversial.

Complications usually arise from contracture subsequent to prolonged immobilization or secondary to persistent pain, edema and swelling; which may be due to an undiagnosed osteochondral lesion of the capitellum.

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THE COMPETENCY OF SECURITY GUARDS IN THE PERFORMANCE OF THEIR RESPONSIBILITIES

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ABSTRACT

This study determined the level of competency of security guards in the performance of their responsibilities. Communication letters were sent to different security agencies based in Baguio City, Philippines; upon approval, survey questionnaires were administered to the respondents. A total of 180 respondents participated in the study. The researcher utilized the descriptive method and survey-questionnaires to gather data.

Findings revealed that as to the profiles majority of the security guards are males, high school graduates, finished preliminary licensing training and in-service training, working as security guard for one to five years, and Security Services NCII holders. The level of competency of security guards in the performance of their responsibilities is less competent as perceived by the respondents.

Based on the findings of the study, the following conclusions were drawn: Security guards do not perform according to standards. As to the profile gathered, security protective work is primarily for males as well as no professional growth as shown by no other enhancement trainings. This work is temporary and unsecured as indicated by their short years of service. The security guard's performance needs improvement.

KEY WORDS: *Competency, Competency Model, Security Services, National Certification*

I. INTRODUCTION

Securus is a Latin word defined in English as without care (se-without and cura-care)- free from care, safe, secure (Webster, 1993). Security is the state or condition of being safe or free from fear, harm, danger, loss, destruction or damages (Manwong & Delizo, 2005).

During the Paleolithic Era, the cavemen originally used rocks, fruit branches and other natural resources to ward off predators and keep themselves out of harm's way. Eventually, the cave people fine-tuned these rudimentary tools and created spears, bows and arrows, and slingshot contraptions to hunt for food and increase their odds of survival (Perspeccys, Blue Coat Company, n.d.).

Manwong and Delizo (2005) emphasize that at first, security needs were simple, but as civilization became complex, so did man's security requirements. Throughout the ages, men started practicing the utilization of workers and equipment in order to protect his well-being and property. Thus, civilized man adopts security measures to have adequate protection against unsecured and unsafe conditions.

Threats and challenges allow people to provide further protection for their family and themselves. Thus, the formation of the words, security personnel, watchmen, or popularly known as security guards.

A security guard sometimes called private security guard or watchman shall include any person who offers or renders personal service to watch or secure either a residence or business establishment or both for hire or compensation, and with a license to exercise profession (RA 5487, 1969).

Near the middle of the 17th century, King Charles passed an act which provided London one-thousand-night watchmen or bellmen to be on duty from sunset to sunrise and they were called Charlies. Some were not honest and sometimes work for criminals as lookouts. Because of this ineffectiveness, merchants hired their own watchman who was known as the "Merchant Police" (Manwong & Delizo, 2005).

Thus, man in the course of history has always showed that he values property next to his life and loved ones. Centuries before the modern concept of security and crime prevention came into practice, cave dwellers fought among themselves to protect life and property. Eventually, families and clans blended together as tribes and later on formed communities for mutual protection, recognizing that there is strength in numbers (Fulgencio, 2011).

There is an incredible growth of security nowadays. Most companies used guard forces, protective barriers, communication and electronic hardware and other state-of-the-art protection methods and techniques in their asset protection.

Meanwhile a security guard force is a group of selected men, trained or grouped into functional unit for the purpose of protecting operational processes from those disruption which would impede efficiency or halt operation at a particular plant, facility, installation or special activity (RA 5487, 1969).

In the Philippines during 1950's, private security agencies/guard was under the supervision and control of the municipal mayors. Any civilian could be employed as a security guard without undergoing training at all, especially in the



handling of firearms. The only requirement then was a permit secured from the mayor where he was posted. In those days, majority of the security guards got involved in criminal activities (Saipen, 2005).

Thus, the Philippine Association of Detective and Protective Agency Operators (PADPAO) was established in 1958, with the aim of making itself a freely self-governing, self-regulating and self-policing agency. This paved way for the endorsement to congress of a bill to regulate the organization and operation of private detectives, watchmen, security guards and agencies. June 13, 1969, Republic Act 5487 was born. This event started the professionalization of security works in the country. RA 5487 underwent numerous revisions so that the industrial security business will suit the economic advancement of the country (Corpuz, 2007).

Today, the role of the industrial security business is indispensable as far as the economic progress of the country is concerned.

With the increasing important role and growth in number of security guards in our society, training in the security industry has been considered as an area of critical importance.

Hence, the law Republic Act No. 7796 otherwise known as the "Technical Education and Skills Development Act of 1994" (TESDA act of 1994), the completion of National Competency I and II (NC I and II) clearly states that Training Regulations serves as basis for the: Competency assessment and certification; Registration and delivery of training programs; and Development of curriculum and assessment instruments (TESDA, n.d.).

The Technical Education Skill and Development Authority Cordillera Administrative Region (TESDA CAR)

strongly adhere to its objectives in developing globally competitive graduates. To ensure the competency of graduates, TESDA devised the certification process to certify the competency of graduates. The certification process is where graduates must undergo an assessment as the final and mandatory requirement for them to be issued certification of National Certificate. One of the TESDA Vocational Course is the Security Services NCI and NCII.

Nowadays, the security industry is trying to cope with the technology for the protection of life and property but the researcher believes that human security is the most important aspect for the attainment of its (security) objectives.

The study sets its sight to serve as a guide for security guards in determining their strength and weaknesses in the performance of their official function. In this way, they will be able to assess their own performance.

II. METHODOLOGY

The descriptive method of research was used in the study. The study determined the level of competency of security guards in the performance of their responsibilities based on the TESDA standards. Particularly on the core competencies of monitoring activities within area of responsibility, enforcing access control and identification system, securing territorial jurisdiction of the company, and preparing security reports. The study made use of the structured survey questionnaire as a primary data gathering tool.

The respondents are composed of the following parties:

Table I
Population of the study

Respondent	frequency (f)	Percentage (%)
Security Guards	150	83.12
Security Agency Employer or Manager	10	05.5
Security Heads of Clients	10	05.5
Detachment Commanders	10	05.5
Total	180	100.00

Evidently, purposive sampling was used as the researcher needs specific people who could provide the information needed in its utmost accuracy.

The study catered to the trainings attended by the security guards, their educational attainment, and years of service, competency and their gender for their profile.

The study focused on the Baguio-based security agencies as well as the company clients they are serving. The chosen area, Baguio City is the lone city of Benguet which is

surrounded by its 13 Municipalities. Geographically, it is surrounded with mountains which now hold thousands of business and residential establishments. It is also the home to many tourist spots as it is dubbed as the Summer Capital of the Philippines.

Percentages, charts, frequency counts and computation of mean scores were used in the study. Likert-type or frequency scales were used to report the statistics collected from the survey questionnaire.



Table 2
Likert's Scale

Weight	Scale	Descriptive Equivalent
4	3.26 – 4.00	Very Competent
3	2.51 – 3.25	Moderately Competent
2	1.76 – 2.50	Fairly Competent
1	1.00 – 1.75	Less Competent

To determine the significant difference on the level of perception of the respondents on the level of competency of security guards in the performance of their responsibilities in Baguio City, the F-test or analysis of variance (ANOVA) was utilized.

III. RESULTS AND DISCUSSIONS

This area presents the findings of the study on the profile of the respondents and the level of competency of security guards.

Profile of Respondents

As to the sex of the respondent's majority or 82% of the 150 respondents are males and only 18% belong to their counterpart. This is attributed to the fact that this kind of career involves primarily the men.

The result of the study implies that this profession is dominated by males because this kind of job is too risky and dangerous for females. It reflects that the nature of this work is more appropriate to males because of their superior strength emotionally and physically as compared to females.

As to the educational attainment, the study revealed that most of the respondents were high school graduates, followed by college level, college graduates and lastly, the vocational graduates. This means that the security profession is serves as fall back of college and vocational graduates and an opportunity for high school graduates.

As to the trainings related to security, the bulk of the respondents have undergone pre-licensing and in-service trainings prior to their employment, there were some who had undergone pre-licensing, in-service and supervisory training. It can be noted that a very small population had both in-service and supervisory trainings. This means that security guards are stagnant as to their learnings. This can also mean that security guards do not have a continuous development.

As to the years of experience, the mainstream of the respondents has been employed in the security industry for 1 - 5 years. Followed by those in service for 6 – 10 years and those that have been installed for less than a year. Very few have been in service for more than 11 years. This means that security guards do not stay long in this profession because some just use this job as their stepping stone to a greener pasture or to the fields of their first choice.

As to the national certification, the 60.67% of the respondents were NCII holder while 39.33% were non NCII holder. It is interesting to note that majority of the respondents are nationally certified by the governing authority. This means that the TESDA has achieved its goal in certifying the middle level of workforce especially in security services.

The Level of Competency of Security Guards as Perceived by the Security Guards themselves, the Detachment Commanders, the Security Agency, and the Security Clients

The study presents the competency level of the security guards in the performance of their responsibilities in Baguio City that is tested in the four major areas; 1) monitor activities within area of responsibility; 2) enforce access control and identification system; 3) secure territorial jurisdiction of the company and 4) prepare security reports.

The respondents rated the competency of security guards in the performance of their responsibilities as less competent in all areas. It means that security guards were not equipped with enough knowledge, skills and competency in the performance of their responsibilities.



Table 3

Level of Competency of Security Guards as Perceived by the Security Guards, The Detachment Commanders, The security Agency, and the Security Clients

A. Monitoring Activities Within Area of Responsibility		Weighted Mean				
Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client/ Security Manager (n = 10)	Grand Mean (n = 180)
1.	Monitor access of visitors, clients, employees, vehicles and telephone calls	1.19	1.10	1.30	1.30	1.22
	Access of visitors, clients, employees, vehicles and telephone calls are recorded/ reported in accordance with company policies.					
2.	Conduct roving inspection	1.17	1.20	1.10	1.30	1.19
	Area of assignment of post duties and responsibilities is properly turned-over in accordance to company policies.					
	Equipment is checked for serviceability according to standard operating procedures.	1.30	1.10	1.30	1.50	1.30
A. Monitoring Activities Within Area of Responsibility		Weighted Mean				
Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client Security Manager (n = 10)	Grand Mean (n = 180)
	Monitoring procedures are implemented in accordance with company policies and guidelines.	1.31	1.10	1.40	1.20	1.26



3.	Report untoward incidents and observations	Fire hazards are reported accurately based on causes, location and condition.	1.25	1.20	1.30	1.30	1.26
		Suspicious elements are reported in accordance with the 5Ws and 1H.	1.28	1.10	1.40	1.40	1.30
		Property damages and losses are reported accurately based on causes, location and condition.	1.21	1.10	1.30	1.30	1.25
		Violations of companies/agency's rules, regulations and policies are reported using the approved format.	1.42	1.40	1.30	1.30	1.36
		Communication flow is followed at all times.	1.37	1.30	1.60	1.40	1.41
4.	Control access entry/exit	Entry/exit of all entrants are recorded as per company SOPs.	1.24	1.30	1.10	1.70	1.33

A. Monitoring Activities Within Area of Responsibility			Weighted Mean				
Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client Security Manager (n = 10)	Grand Mean (n = 180)	
	Regular inspection within the restricted area is conducted as per company SOPs.	1.27	1.30	1.10	1.40	1.27	
5.	Check activated security alarm system	Security alarm system is checked following manufacturer's SOP.	1.51	1.40	1.40	2.00	1.57



6.	Check emergency alarm system	Fire alarm system and firefighting equipment defects are reported as per company policies.	1.38	1.10	1.20	1.50	1.30
7.	Check garbage disposal	Garbage disposal is checked in accordance with company SOP.	1.38	1.20	1.30	1.30	1.30
		Any pilfered items or company property are reported to proper authority.	1.34	1.20	1.10	1.50	1.29
Area Weighted Mean			1.30	1.20	1.30	1.43	1.31

B. Enforcing Access Control and Identification System

Weighted Mean

Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client Security Manager (n = 10)	Grand Mean (n = 180)
1.	Regulate access and identification system for pedestrians, visitors and clients	1.26	1.50	1.40	1.30	1.36
	Bonafide persons entering premises or restricted areas are verified by checking relevant details on identification documents.					
	SOPs in checking entry of incoming/outgoing pedestrians, visitors and clients are implemented in accordance with company policies and regulations.	1.32	1.20	1.60	1.20	1.33



2.	Regulate access and identification system for vehicles, deliveries, bodily search, luggage, baggage, bags and parcels	Incoming/outgoing vehicles, deliveries, luggage, baggage, bags and parcels are checked in accordance with company policies and procedures.	1.32	1.40	1.20	1.30	1.31
B. Enforcing Access Control and Identification System			Weighted Mean				
Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client Security Manager (n = 10)	Grand Mean (n = 180)	
3.	Regulate access and identification system for any company properties	Incoming and outgoing company properties are checked in accordance with company SOP.	1.26	1.00	1.20	1.50	1.24
4.	Check incoming deliveries	Requirements for entry/exit are properly counter checked and recorded as to its validity.	1.33	1.10	1.60	1.40	1.36
		SOPs of checking incoming/outgoing deliveries were strictly followed and observed as per company policy.	1.24	1.00	1.00	1.20	1.12
5.	Check pull out of properties	Requirements for exit were properly counterchecked and recorded as to its validity.	1.29	1.10	1.70	1.30	1.34
		SOPs of checking pull-out of properties were strictly followed/ observed as per company policy.	1.27	1.10	1.10	1.20	1.15
Area Weighted Mean			1.29	1.16	1.35	1.30	1.28



C. Securing Territorial Jurisdiction of the Company		Weighted Mean				
Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client Security Manager (n = 10)	Grand Mean (n = 180)
1. Patrol perimeter area	SOPs in patrolling are followed as per company/agency policy.	1.27	1.30	1.30	1.30	1.29
2. Check security barriers	Damaged/non-existence/defective security barriers reported/recorded as per company guidelines.	1.32	1.10	1.40	1.40	1.31
3. Conduct ocular inspection of facilities/installation	Actual physical observation of facilities and installation including damages/charges/improvement required/condition are reported/recorded in the required format.	1.37	1.60	1.20	1.80	1.49
4. Check persons/vehicles entering the company perimeter	All non-organic persons entering the perimeter are interviewed and screened in accordance with company policies and guidelines.	1.43	1.50	1.30	1.50	1.43
C. Securing Territorial Jurisdiction of the Company		Weighted Mean				
Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client Security Manager (n = 10)	Grand Mean (n = 180)
5. Prevent access of intruder	System ID for access within the territorial jurisdiction of the company is adopted.	1.39	1.60	1.50	1.50	1.49



	Intruders within company premises are prevented from entering in accordance with company policy.	1.26	1.20	1.20	1.50	1.29
6. Monitor scrap area	Company SOPs in checking monitoring scrap area is followed.	1.37	1.20	1.30	1.80	1.42
7. Gather security related information	All security related information/incidents gathered are complete, accurate and timely.	1.23	1.10	1.40	1.40	1.28
8. Enforce bomb threat preventive measures	Inspection conducted within area of responsibility and as identified in work assignment.	1.25	1.22	1.20	1.30	1.24

C. Securing Territorial Jurisdiction of the Company		Weighted Mean				
Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client Security Manager (n = 10)	Grand Mean (n = 180)
9. Enforce civil disturbance plan	Communication net link with agency and police authority is established as per company requirements.	1.35	1.10	1.70	1.40	1.39
10. Render assistance to injured victims	First aid procedures are applied following safety guidelines.	1.33	1.40	1.30	1.40	1.36
	Hospital/ambulance services are contacted if needed.	1.28	1.10	1.00	1.40	1.20
11. Implement evacuation procedures during emergencies	Direction and control of escape route are provided based on company requirements.	1.37	1.30	1.50	1.30	1.37



	Emergency areas are secured and properly protected.	1.24	1.10	1.00	1.30	1.17
	Coordination is made with NDCC and DSWD if necessary.	1.50	1.10	1.70	1.60	1.48
Area Weighted Mean		1.32	1.26	1.33	1.46	1.35
D. Preparation of Security Reports				Weighted Mean		
Elements	Performance Criteria	Security Guards (n = 150)	Detachment Commander (n = 10)	Security Agency (n = 10)	Client Security Manager (n = 10)	Grand Mean (n = 180)
1.Determine style and form of report	Security correspondence is prepared using approved format.	1.35	1.30	1.00	1.40	1.27
	Communication flow followed at all times.	1.36	1.40	1.80	1.40	1.48
2.Prepare report	Attachments and justification prepared if needed.	1.37	1.30	1.10	1.30	1.27
3.Submit report to proper authorities	Receipt of reports by appropriate personnel is ensured.	1.37	1.20	1.50	1.30	1.35
	Actions on reports submitted are constantly checked.	1.26	1.30	1.10	1.20	1.22
Area Weighted Mean		1.34	1.30	1.30	1.32	
Over all Weighted Mean		1.31	1.23	1.32	1.32	



The result of the study reflects that among the respondents, the client and the security agency have the highest overall weighted mean with 1.32. Although still interpreted as less competent on all the areas of competency, still, clients garnered the highest overall weighted mean. It is very unusual that the client's perception is a little bit higher than that of the other respondents, which means that clients still appreciate the effort of the security guards.

In contrast, detachment commanders have the lowest overall mean on all areas. This is because Detachment Commanders as direct supervisors and officers-in-charge have seen all the flaws and observed all the weaknesses of security guards. Thus, they are very much aware of the behavior and incompetency of their subordinates.

The study revealed that securing territorial jurisdiction of the company garnered the highest mean although it still falls under less competent.

Preparation of Security Reports is perceived as less competent by the respondents. This means that respondents know that security guards do not possess the knowledge and skill in the preparation, making and submission of their security reports. Study reveals that security guards are not efficient in security correspondence. The result also is an indication of the non-follow up of written reports which is attributed to the fact that once the security guards submit their complete report, their task is done.

Monitoring Activities within Area of Responsibility is still interpreted as less competent by the respondents. This implies that security guards do not give much attention to the customers/visitors once they had entered the establishment.

Lastly, Enforcing Access Control and Identification System was also interpreted as less competent. This means that security guards merely check their bags for prohibited items such as deadly weapons, sharp objects and others. It is also noted on the result that incoming and outgoing deliveries garnered the lowest mean, this is because some retail industries have their own checker whenever there are deliveries or pull-out products.

The result of the study also means that the pre-licensing training and other trainings is not enough to develop the required competencies of the aspiring security guards.

The great variance from the weighted mean of this study is interpreted as less competent as compared to that of very much implemented on the study of Milo (2006) and very much aware of Guinayen (2011) due to the fact that security guards in retail industries usually differ in standards than that of other establishments. Moreover, all retail industries differ in standards from each other.

Security Guards

The result indicates that they, the security guards themselves, are less competent in doing their assigned task. The study revealed that security guards themselves are aware that they lack knowledge, skills and attitude in the performance of their responsibilities.

On the other hand, security guards as perceived by them are not competent due to the fact that they are being labelled as such. Corpuz (2007) states that many business establishments regard guards as mere compliance and

sometimes as lowly as props in the company. He added that many fail to recognize the significance of a blue clad individual often called *sikyu*. Also, this is contradicted by the result of the study of Guinayen (2011), which reflects that provincial security guards perceived that they are very much aware of their duties and functions.

Detachment Commanders

Security guards are perceived by the detachment commanders as less competent. This implies that detachment commanders as the direct supervisors of the security guards are much aware of their (security guards) condition that they lack knowledge and skill in the performance of their responsibilities. This indicates that detachment commanders are also ineffective and inefficient in supervising and monitoring the activities of their subordinates.

Security Agency Managers

Security guards are less competent as perceived by the security agency managers. This implies that some security agencies were also aware of some of the incompetency of their security guards.

Client Security Managers

Clients perceived their posted security guards as less competent. The study revealed that clients were also aware of the incompetency of their security guards. This implies that clients were not satisfied with the performance of their hired security guards.

The result of the study is contradicted by the study of Fontanos (2007), that the clients of the University of Baguio are moderately satisfied with the UB security programs. The result of the study was again contradicted by the study of Guinayen (2011), which states that clients in Mountain Province are moderately aware and moderately satisfied with the performance of provincial guards on their duties and functions.

Another contradiction on the result of the study is the study of Nalla and Steden (2014) that Dutch citizens in Netherlands have mixed opinions about security guards. Their findings also suggest that respondents tend not to view the nature of security guards work and their professionalism in purely negative terms. They added that contact with security guards was a key for the satisfaction with guard services.

IV.CONCLUSION

Based on the findings of the study, the following conclusions were drawn; As to the profile gathered, security protective work is primarily for males. There is no professional growth as shown by the lack enhancement trainings. This work is temporary and unsecured as indicated by their short years of service. security guards do not perform according to standards; this is indicated by the low overall weighted mean on all areas of competency. Lastly, the security guards' performance needs improvement.

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RISK FACTORS FOR DYSPEPSIA IN MEDICAL STUDENTS OF INDIAN ORIGIN

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ABSTRACT

Dyspepsia is a condition of the digestive system, with a fairly high frequency globally, originating from both organic and functional pathologies. Many studies have been conducted on dyspepsia, but very little is known about the risk factors, evolution and management for dyspepsia among medical students. The objective of the study consisted in the assessment of the epidemiological features and the clinical manifestations of dietary and lifestyle factors associated with dyspepsia among medical students of Indian origin. The study involved 52 medical students originating from India, who completed a questionnaire developed by us, between January 2022 and February 2023. According to the study's findings, food and habits are linked to a high frequency of dyspepsia among Indian medical students. To lower the prevalence of dyspepsia among medical students, strategies that encourage good eating practices, regular physical exercise, stress management, and regular meal schedules should be implemented in practice.

KEY WORDS: *dyspepsia, medical student*

INTRODUCTION

Dyspepsia is a condition of the digestive system, with a fairly high frequency globally, ranging from 7 – 40% [1], originating from both organic and functional pathologies. Functional gastrointestinal disorders are digestive tract-related symptoms that are chronic and recurrent but cannot be associated with anatomical or biochemical problems.

The Rome IV criteria define functional dyspepsia in gastroduodenal disorders as any combination of 4 symptoms:

postprandial fullness, early satiety, epigastric pain, and epigastric burning that are severe enough to interfere with the usual activities and occur at least 3 days per week over the last 3 months with an onset of at least 6 months in advance. They are associated with a poor quality of life, psychological stress and decreased school attendance, physical activity and social life [2].

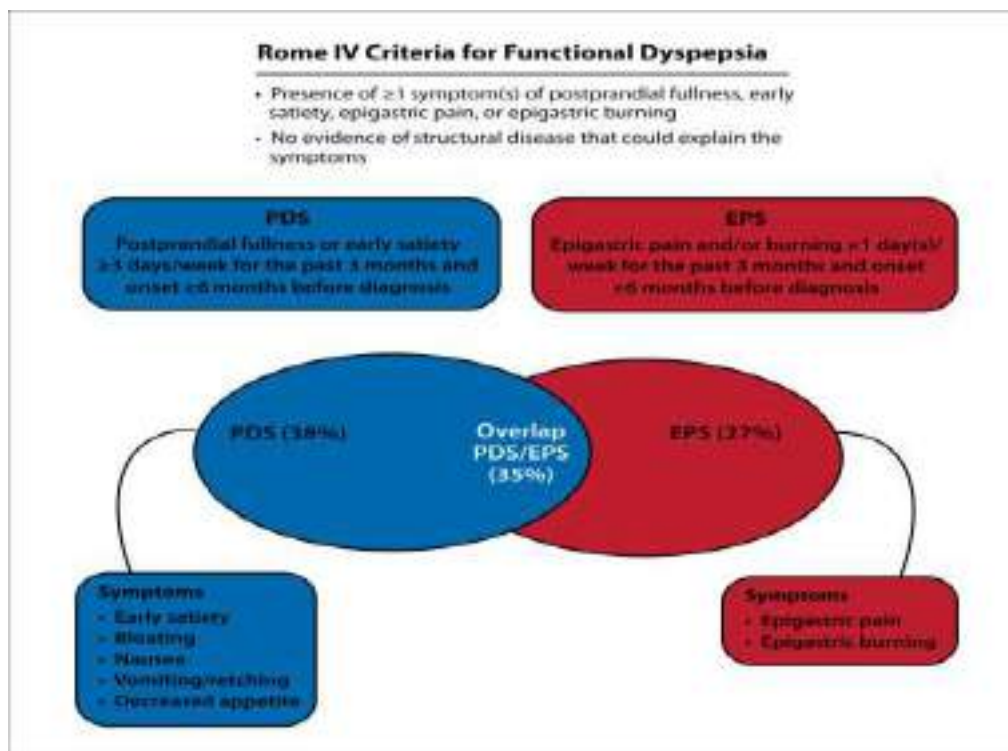


Figure 1. Rome IV categories and criteria for functional dyspepsia [3]



Dyspepsia can be brought on by a variety of illnesses, including GERD, peptic ulcers, lactose intolerance, cholecystitis, melancholy or anxiety, stomach cancer, and commonly as a result of alcohol or medication. Possible causes of dyspepsia include NSAID use, which is particularly relevant to ulcer dyspepsia and lifestyle choices like smoking and increasing caffeine intake [1].

There aren't many differences between those with sickness and healthy people in terms of nutrition and way of life, even among patients who are aware of the foods that regularly make them feel worse. Mixed sensory-motor issues, such as decreased stomach adaptation to a meal and gastric hypersensitivity, are seen in people with functional dyspepsia [4].

The altered stomach mechanic sensitivity and stomach neuromuscular dysfunction, including extended gastric emptying, decreased gastric fundus relaxing with blunted postprandial adaptation, and decreased protracted gastric emptying, have been found in the patients with dyspepsia. Around 40% of people with functional dyspepsia have poor stomach accommodation, and up to 70% exhibit aberrant antroduodenal manometry findings [5].

Additionally, research has demonstrated that individuals with functional dyspepsia experience delayed stomach emptying [6].

There are several factors that might influence the pathophysiology of functional dyspepsia. Poor gastric adaptation, delayed stomach emptying, visceral hypersensitivity, stomach acid, hereditary factors, early experiences in life, lifestyle choices, microinflammation in the duodenum, and previous infections are a few of them. A randomized, double-blind, placebo-controlled study found a significant relationship between symptoms and lower stomach accommodation in those with functional dyspepsia. Numerous publications claim that some people with functional dyspepsia may experience difficulties with stomach emptying, and a meta-analysis determined that about 35% of functional dyspepsia patients may experience significantly delayed emptying [7].

Spicy foods commonly cause heartburn after eating. The justification is twofold. The first is that capsaicin, a compound found in many spicy foods, slows digestion and increases the amount of time food spends in the stomach. The longer food stays in the stomach, the more probable heartburn is to develop. Second, consuming spicy food can make

esophageal irritation worse, which might make heartburn worse. People who have heartburn, esophageal issues, or ulcers frequently experience heartburn more quickly and intensely than healthy individuals do when eating spicy foods [8].

Dyspepsia has been linked to psychological discomfort, and studies have shown that both distress and anxiety can precede symptoms and that symptoms can also cause distress and worry. As a result, a proposed bidirectional gut-brain pathway mechanism [9].

Treatment of functional dyspepsia can be both non pharmacological and pharmacological. Modifications in diet and lifestyle are needed first. Acid neutralization and acid production inhibition are the two basic drug therapies for functional dyspepsia. [10]

Many studies have been conducted on dyspepsia, but very little is known about the risk factors, evolution and management for dyspepsia among medical students, fact, which determined the initiation of this study.

PURPOSE

Assessment of the peculiarities of dyspeptic syndrome in Indian medical students that are studying at the "Nicolae Testemițanu" University of Medicine and Pharmacy in the Republic of Moldova.

OBJECTIVE

To study the epidemiological features and the clinical manifestations of dietary and lifestyle factors associated with dyspepsia among medical students.

METHODOLOGY

We developed a Questionnaire, which was applied to medical students from India, studying at the "Nicolae Testemițanu" University of Medicine and Pharmacy in the Republic of Moldova. The study included 52 students and ran from January 2022 to February 2023.

RESULTS

Considering 52 medical students' responses, 92,3% of them are in the age group of 18 to 28 years, 27 female and 25 male. The results shows that 15.4% students are having Gastritis, 9.6 % - GERD, 1.9 % - IBD and most of them - 73% do not have a confirmed diagnosis (Figure 2).

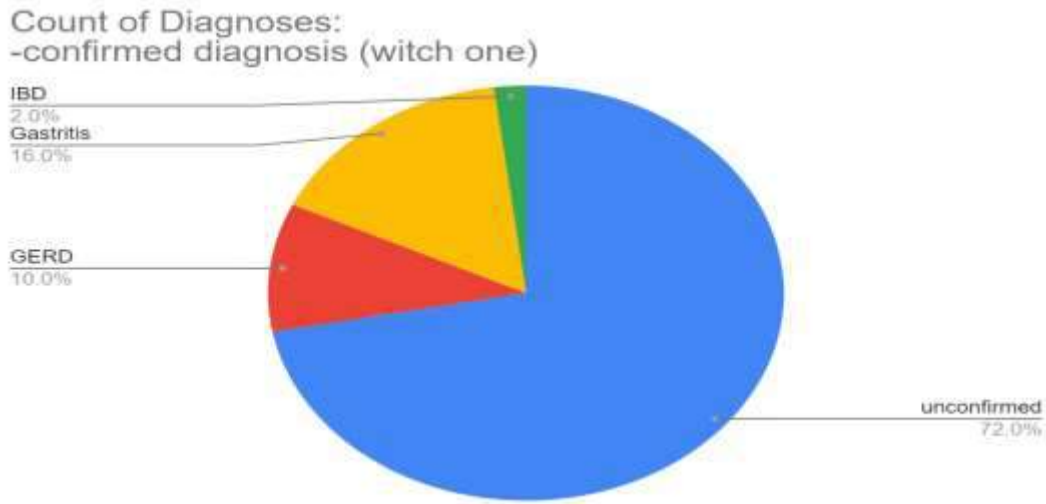


Figure 2. The diagnoses established in students with dyspeptic syndrome

It was established that 48,1 % had nausea, vomiting, dull pain in the abdomen, 42.3 % - heartburn, 34.6 % - loss of appetite, 32.7 % - diarrhea, 28.8 % - flatulence, 26.9 % - constipation, 21,2 % - body weight lost (Figure 3).

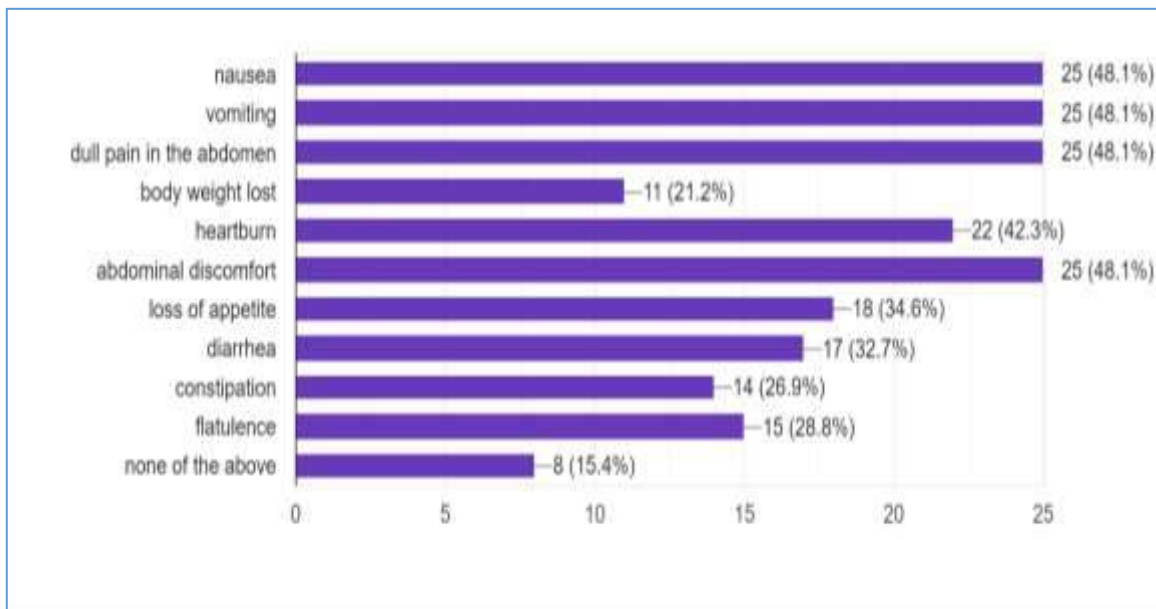


Figure 3. Characteristic of dyspeptic syndrome in examined students

Dyspeptic symptoms appeared mostly in stressful personal situations - 76.9% and during exams - 50%; against the background of skipping meals and the use of spicy food - 88.5%, fast food - 67.3%, insufficient and poor quality sleep - 48.1% (Figure 4).

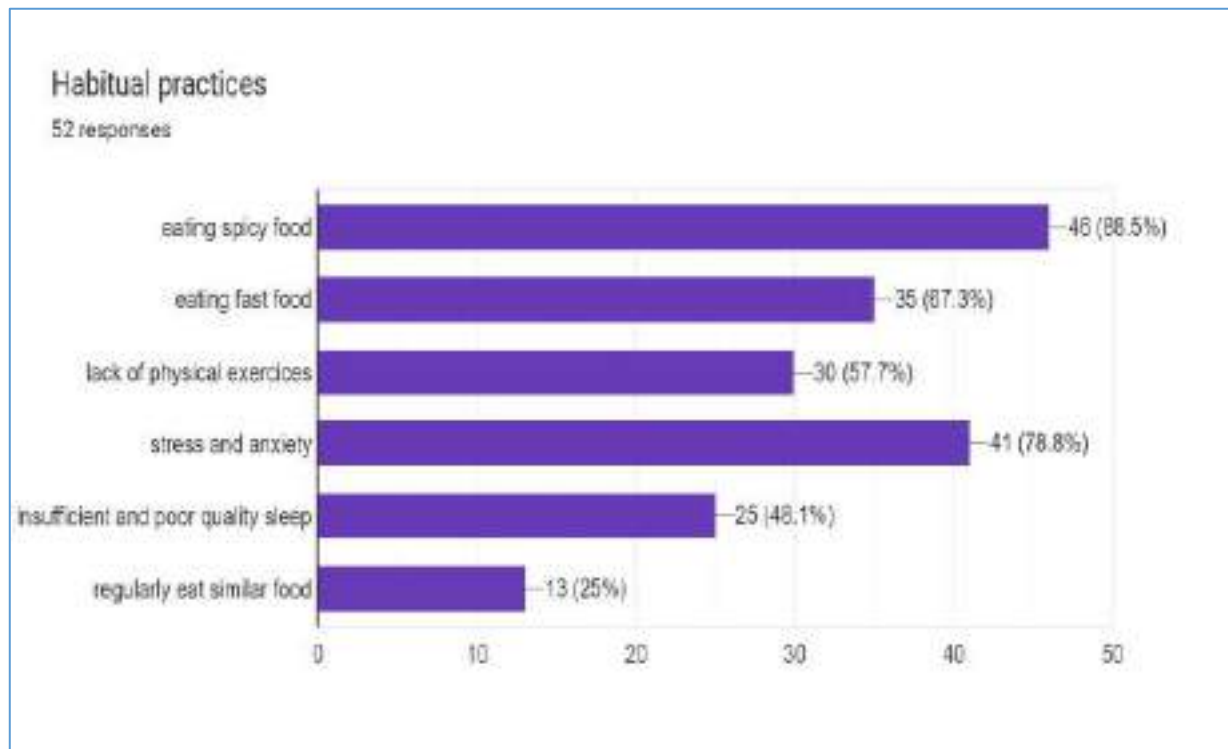


Figure 4. Characterization of the conditions favoring the occurrence of dyspeptic syndrome in the examined students

CONCLUSIONS

According to the study's findings, food and habits are linked to a high frequency of dyspepsia among Indian medical students. Medical investigation of those with dyspeptic syndrome would be necessary, and in the case of detection of organic pathologies, adequate drug treatment is necessary. To lower the prevalence of dyspepsia among medical students, strategies that encourage good eating practices, regular physical exercise, stress management, and regular meal schedules should be implemented in practice.

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STUDY OF OIKOYMS IN SOCIO-ECONOMIC GEOGRAPHY

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ABSTRACT

In this article, the history of the study of the names of the settlement in the field of socio-economic geography of the oikonym, the socio-economic geographical significance of the oikonym, as well as the scientific views of foreign and local scientists belonging to this area were studied. The fact that the oikonym do not have the same stagnant style as other types of geographical names, the need to research them over time is reflected in this article.

KEYWORDS. *place name, geographical name, settlement name, oikonym, toponymic heritage, socio-economic geography.*

INTRODUCTION

The main names, including geographical names, especially their meanings, have long attracted the attention of scientists. Toponymic issues are found in literature on history, geography, linguistics from ancient times. Any science arises and develops under the influence of the requirements of practice. Toponymy arose in the first gal on the basis of the practical needs of geography. Early tourists named the lands they discovered, making the names of distant lands and cities known to everyone. Those who collected and studied geographical names were also geographers. Even today, special attention is paid to standardizing the spelling and translation of place names on a global scale, substantiating the principles of naming and renaming geographical objects, drawing up official registers of geographical names, creating reference literature on toponymy, comprehensively studying the historical-cultural significance of place names and protecting historical names.

METHOD AND METHODOLOGY

The research of geographical names, precisely the settlements, that is, the scientific research of oikonyms, has been carried out over the past century. In the socio-economic geographical research of the oikonym, V.P.Semenov-Tyan-Shansky, E.M.Murzaev, V.A.Juchkevich, V.N.Kaluskov, L.S.Tsidipova, S.Q.Karaev, K.M.Hakimov and O.O.Baltabaev's contribution is significant. Many research methods are used in oikonym research, mainly cartographic, statistical, etymological, etc. This article analyzed the research work of geographer scientists who studied the oikonym in socio-economic geography.

MAIN PART

The scientific study of geographical names, in particular the oikonyms, on the basis of their origin and history, their classification began in recent times. Great geographer

scientist V.P.Semenov-Tyan-Shansky published his book "How the geographical landscape is reflected in the folk names of populated places", laid the groundwork for classification issues in toponymy.. V.P.Semenov-Tyan-Shansky divided the settlements into the following seven groups. These are: 1) derived from human names and nicknames (surnames); 2) derived from church holidays; 3) derived from historical names; 4) names associated with ancient beliefs; 5) derived from ancient tribes, Aborigines, or colonists of a particular area; 6) derived from modern names in honor of various phenomena and individuals; 7) derived from the objects that make up or participate in the typical geographical landscape of a given area.

One of the great toponymists is the famous geographer E.M.Murzaev. For more than half a century, the scientist created many valuable works, scientific articles, monographs and dictionaries about the origin, transcription of geographical names, research methods, local geographical terms. E.M.Murzaev the oikonym were classified and studied by as follows: 1. Oikonyms denoting natural geographical objects; 2. Oikonyms denoting the original names of the settlements; 3. Horological oikonyms; 4. Hronological oikonyms; 5. Associated with the increasing size of settlements oikonyms; 6. Depending on the functions of the settlements oikonyms; 7. The oikonyms associated with religious names; 8. Migrate oikonyms.

He comprehensively studied the toponyms of the Republic of Belarus, wrote important works on the scientific and theoretical foundations of toponymy, V.A.Juchkevich is considered a well-known toponymist, geographer scientist. He toponymically studied and described River, Lake, relief forms, settlement names on the territory of the Republic of Belarus. Scientist identified toponymic landscapes, conducted zoning work, and created toponymic dictionaries. The scientist used and scientifically substantiated various methods in the study of toponymy. In 1970 he defended his doctoral dissertation work in Geographical Sciences on



“General and regional geographical patterns of toponymy”. In his dissertation, he studied the scientific-theoretical aspects of toponymy, toponymic laws and gave a description of toponyms of World States, local geographical terms. About the names of the settlement, V.A.Juchkevich writes: “The names of ancient settlements also cover social phenomena that do not occur in hydronymy. Unlike river names, settlement names are closely related to anthroponyms, whose vocabulary is distinguished from that of hydronyms by being much more diverse”.

V.A.Juchkevich writes about the names of settlements in Belarus: “The study of settlement names is the basis for the study of the toponymic landscape of all of Belarus”. Also, the work “General toponymy”, published in 1968, made a huge contribution to the development of the science of toponymy. In his work “A short toponymic dictionary of Belarus”, published in 1974, toponyms of Belarus are studied, and in the end of the work we can see toponymic cards of the cities and villages of the Republic.

A toponymist, geographer scientist, who has been conducting scientific research on cultural geography and toponymic landscape from many years V.N.Kalutskov. In the scientific work of the scientist, we see that the main scientific directions of ethno-cultural landscape studies, the history and toponymic landscape of the North Rus geomadany, zoned the Arkhangelsk Oblast on cultural-landscape features. V.N.Kalutskov cited three different toponymic landscape types for the Northern Rus territories:

- natural landscape: the toponym corresponds to the status in the landscape;
- farm landscape: the name of the object corresponds to the current activities of the farm service;
- (status) status: the toponym has a name denoting administrative management, holy place or status.

Russian toponymist, geographer L.S.Tsidipova in the study of historical-geographical features in the formation of ethno-cultural landscapes services are large. L.S.Tsidipova in his research work, studied the emergence of ethno-cultural landscapes and toponyms in the Barguzin area of Baikal, the linguistic and geographical aspects of ethno-cultural landscapes, the ethnic peculiarities of the inhabitants of the territory. He also compiled a linguogeographic card of the area, researching toponyms. L.S.Tsidipova noted about toponyms: “Toponymy contributes greatly to the knowledge of the natural, economic and ideological features of the ethno-cultural landscape”.

It is known that geographical names are the most variable type of toponyms, especially oikonyms. In the last 100 years of the Russian Geographical Society, that is, for each of the states of the former Union period in the XX-XXI centuries, a map was compiled showing the frequency of changes and stagnation of the names of the regional and districts. The Atlas also provides information on some of the variable oikonym in Uzbekistan in particular.

The toponymist scientist S.K.Karaev who made a special contribution to the research of the oikonyms of Uzbekistan on a systematic basis. In his dissertation work, the scientist conducted the first comprehensive study of the formation and development of oikonymia in Uzbekistan. In

particular, it contains an in-depth analysis of the historical and geographical roots of the formation of the oikonyms of Uzbekistan. Maps of oikonyms of Uzbekistan are created, consisting of natural-geographical and socio-economic geographical components, detailed information is presented about local geographical terms and their role in the making of oikonym. S.K.Karaev noted that toponymics can greatly help historical geography in determining the geography of ancient types of economic activity, professional names that existed in ancient times, the geography of old trade routes and deposits of underground resources used in the past. It should be recognized that S.K.Karaev was the first to create a map of production-related oikonym in the territory of Uzbekistan.

In the socio-economic geographical study of toponyms of Uzbekistan, K.M.Hakimov also has great services. He studied the importance of the economic and socio-geographical features of the area in the formation of place names on the example of the Jizzakh region oikonyms in his candidate dissertation, which he defended in 2010 year. In particular, it developed the features of nature and society reflection in place names, the laws of naming settlements, the semantic classification of region toponymy, of provincial oikonyms linguogeographic analysis and issues of their mapping, the place of geographical terms in regional place names, reflection of ethnonyms in the names of settlements, regional place names and problems of their arrangement, scientific recommendations for naming newly erected settlements in developed. The scientist writes about the names of the settlement as follows: “Considering that settlements are a socio-economic category, their names can be considered in a certain sense more important than the names of their natural-geographical objects, after all, in them the political, economic and social life of the country has found its reflection”.

O.O.Baltabaev studied the internal territorial differences of the oikonymy of the Republic of Karakalpakstan and the socio-geographical factors affecting them, the oikonymical zoning of the Republic, the chronological composition of the names of settlements in Karakalpakstan and their significance as elements of historical and cultural heritage. (Балтабаев, 2022). In his research work the directions (spectral-stratigraphic, lexical-semantic, word formation, chronological, integral (territorial)) of the composition (structure) of regional oikonymic systems and the complex of social-geographical factors affecting them is theoretically based; The spectral-stratigraphic (linguistic), lexical-semantic (meaningful) and word-formation (topoterminological) composition of the oikonyms of the Republic of Karakalpakstan and its administrative-territorial units (a total of 1151 place names) has been quantitatively analyzed, territorial differences in this regard and their social-geographical factors that influenced them are identified; For the first time, a two-level (2 regions and 7 sub-regions) oikonymic zoning scheme of the republic was developed based on a comprehensive analysis of the internal differences in the language, lexical-semantic and topoterminological structure of the oikonyms of Karakalpakstan; Based on the period of formation, the oikonyms of Karakalpakstan were divided into 3



chronological layers (before the Soviet period (including restored during the years of Independence), formed during the Soviet period and during the years of Independence), and on this basis, the historical stability of the oikonyms of the republic and its districts was evaluated; The essence of the concept of “toponymic heritage” and the criteria for determining its elements (a total of 9 criteria related to the historicity, symbolism and historical-cultural value of place names) have been developed, and on this basis, the registry of oikonyms recommended for recognition as objects of the toponymic heritage of the Republic of Karakalpakstan has been formed.

CONCLUSION

It is known that any place name appears in a certain historical period, in a certain natural environment, and accurately reflects the natural-geographical, socio-economic geographical features of the territory and reserves valuable information. From the results of the above analysis, we can see that the research work of mainly Russian, Belarusian and domestic scientists is noteworthy in the research of geographical names, namely oikonyms. We can see that the large part of scientists focuses on the lexical-semantic aspects of the oikonym. In place of the conclusion, it should be said that a more comprehensive study of the experiments of scientists of the world, the use of their research methods, methodology, can give great results for us.

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COVID-19 INFECTION AND ARTERIAL HYPERTENSION: LITERATURE REVIEW OF THE RELATIONSHIP BETWEEN THE TWO ENTITIES

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ABSTRACT

Background: To breakdown the relationship and its nature between the two pathological entities Arterial hypertension (AHT) and SARS-COV-2 infection. Literature analysis of existing literature on both the topics have been utilized. Sources include journals, books, existing publications and online platforms like Google Academic, PubMed, HINARI were used as search engines. Additionally, guidelines and circulars from European Society of Cardiology, American Heart Association and other respective bodies were also referred. Data from large meta-analyses and clinical studies were included to bring out the relationship study. Pathophysiological breakdown of the two entities, contradicting proposals regarding treatment, new treatment modalities and de novo onset of AHT in post-covid infection were included to delineate the relationship between the two pathological entities.

Conclusions: Findings emphasize that the role of arterial hypertension in SARS-COV-2 infection is mediated through its effect on the regulation of RAAS, inflammation and immune responses. In contrast to the effect of arterial hypertension on patients with SARS-COV-2 infection, de-novo arterial hypertension was also reported in post SARS-COV-2 infection patients on follow up. Though some initial studies hypothesized that RAAS inhibitors may add to clinical adversities, most studies afterward disproved the same and in fact revealed a protective role of the same. Angiotensin Converting Enzyme 2 (ACE2) is proposed as a treatment option in SARS-COV-2 infection.

KEYWORDS: SARS-COV-2 infection, Arterial hypertension (AHT), RAAS, RAAS inhibitors

INTRODUCTION

Arterial Hypertension (AHT) is one of the important and major established cardiovascular risk factors and has been an integral part of the cardiovascular risk stratification systems including the SCORE chart for quite long. The proportion of hypertension in the global burden of diseases has increased from about 4.5% (0.9 billion adults) in 2000, to 7% in 2010 and was projected to rise to 1.6 billion adults in 2025 [1,2]. With the emergence of the severe acute respiratory syndrome (SARS)- Coronavirus II infection, hypertension as an entity gained spotlight than ever before. The SARS-Covid 2 infection or simply referred to as 'COVID-19 infection' was first reported in Wuhan, Province of Hubei, China on 31 December 2019 which later evolved into a global pandemic affecting the entire healthcare system and raised an entire arsenal of questions including those directed to its spread, epidemiology, pathogenic mechanisms, prevention and above all treatment and prophylaxis [3]. AHT has been identified as the most prevalent cardiovascular comorbidity in patients with SARS-COV-2 infection that demonstrably increases the risk of hospital admissions and death. Worsen outcomes like profuse lung injury, higher severity and mortality was associated mostly with AHT (30%) followed by diabetes (19%), and coronary heart disease (8%) [4]. The importance of the relationship study was further catalyzed by the pathogenic linkage between the two entities. *The aim* of the study was to delineate the relationship between covid-19 infection and AHT and to shine light on other important and relevant areas within the relationship spectrum itself such as antihypertensive

therapy in SARS-COV 2 infection. *The purpose* is to study and refer the vast array of literature, and understand the intricacies of the relationship. The study has *the objective* of giving forth some clarity on the relationship between the two pathological entities and addressing some concerns linked to the same, such as antihypertensives. Analysis of this relationship is rendered complex by many factors. For instance, AHT is more common among the elderly. At the same time, the elderly was associated with a higher risk of protracting SARS-COV-2 infection and having a worsen outcome in comparison to the general population. In addition, many elderlies have other systemic comorbidities like Type 2 Diabetes Mellitus (T2DM) and dyslipidemia. They also receive polychemotherapy which along with the above-mentioned comorbidities hinders in clearly delineating the relationship.

MATERIALS AND METHODS

This research was conducted on the basis of vast literature on related topics and pathophysiological breakdown of both entities using journals, books, online platforms like 'Google Academic', 'PubMed', 'HINARI', respective guidelines and circulars from authorities like European Society of Cardiology (ESCAR) and American Heart Association (AHA). The literature also reviewed advancements over time and contrasting findings. An example of this would be the usage of antihypertensives. Contradicting hypotheses were put forth and an intense debate for discontinuation of certain medications were found to be present initially. The need for switching from



Renin Angiotensin Aldosterone System Inhibitors (RAAS inhibitors) was also put forward. For debunking the very idea of an elderly hypertensive patient acquiring SARS-COV-2 infection being a mere coincidence, accumulating evidence of not only their prevalence but also worsen outcome, severity and lethality can be pointed out by the study [5,6,7,8]. According to these, most elderly patients are at risk for both AHT and SARS-COV-2 infection. However, this does not mean that co-existence of both entities in an elderly patient is a mere coincidence. AHT as a pathological entity itself has implications in SARS-COV-2 infection affecting disease course, morbidity, outcome etc. Age-related changes have effects on individual organs and organ systems that collectively increase the susceptibility to many pathologies. There may also be other risk factors that may be prevalent in adult and elderly populations which complicate their relationships.

RESULTS

The findings from a large meta-analysis that included 76,993 patients with SARS-COV-2 infection found that the pooled prevalence of AHT, cardiovascular disease, smoking history, and diabetes was 16.37%, 12.11%, 7.63%, and 7.87%, respectively [9]. It was also demonstrated that patients with severe SARS-COV-2 infection who required ICU-admission, mechanical ventilation and death attributed to the same were found to have a significantly higher percentage of AHT, diabetes, coronary artery disease, cerebro-vascular disease, COPD, chronic renal disease, and cancer [10]. These reveal that AHT independently contributes in disease protraction risk, severity and outcome. For a better understanding of their relationship, it is necessary to review the pathogenesis. The root of this pathogenetic linkage lies in the Renin Angiotensin Aldosterone System (RAAS) and its two main regulatory axes. Recent findings demonstrated that AHT plays significant and important role in the regulation of RAAS, inflammation, immune responses, and the gastrointestinal tract [11]. SARS-COV-2 infection itself is considered to have systemic implications on inflammatory and immune areas as well. SARS-COV-2 pathogen enters human cells by binding its spike protein to the membrane receptor angiotensin converting enzyme 2 (ACE2) and interacting with the transmembrane serine protease 2 (TMPRSS2, widely expressed in epithelial cells at the respiratory, gastrointestinal and urogenital levels), leading to unrestrained ACE2 downregulation [12,13]. While SARS COV-2 infection uses ACE2 and its axes to interact with RAAS system; AHT pathophysiology and treatment pharmacology is mostly linked to the ACE/Angiotensin II/Angiotensin II receptor type 1 axis; the other axes involved in RAAS. This axis is associated with positive regulation of RAAS and hence an increase in systemic arterial blood pressure, ACE and its products (e.g. -Ang II), aldosterone etc. will be result of its activation which translates to systemic vascular and cardiac remodeling effects. This is consistent with effects seen in long term hypertensive patients. This axis contributes to cardio-renal remodeling by inducing prooxidative, proinflammatory, and profibrotic changes [14,15,16]. Conversely, the other axis ACE2/Angiotensin (1-7), Angiotensin (1-9)/Angiotensin receptor type 2 is associated with vasodilation and decreasing blood pressure. Additionally, by MAS receptor and it plays protective roles in a variety of human target organs by reducing cardiac hypertrophy and

pathological cardiac remodeling and preventing the occurrence of heart failure after myocardial infarction [17,18]. ACE axis activation or ACE2 axis downregulation hence results in target organ damage, as one works opposite to the effects of the other. Additionally, SARS-COV-2 infection was found to downregulate the ACE2 pathway [19]. This leads to an elevation or increase in angiotensin II through ACE pathway. This is brought upon by the decrease in ACE2 which implies a significant reduction in the conversion of angiotensin to angiotensin (1-7) [19,20,21]. The ACE 2 fall will also lead to decreased degradation of Ang I and Ang II leading to their increased levels in plasma, which brings along with it the prooxidative, pro-inflammatory and profibrotic changes associated with it [22,23,24,25,26]. This also means that there will be higher aldosterone production which will lead to K⁺ excretion via the urine, sodium (Na) retention and inflammation. Potassium (K⁺) excretion over time will lead to hypokalemia which was demonstrated to be biological marker or predictor of worsening outcome of the disease [27]. Hypokalemia a clinical marker of this complex interaction indicates sodium retention, raising ACE, both of which translates to prohypertensive, pro-inflammatory effect in SARS COV-2 infection and signifies its indulgence in AHT pathophysiology. In AHT the role of RAAS is mostly implicated, as it the major established regulator of blood pressure in the human body. Increased ACE and upregulated ACE/Ang-II/AT1R is mostly responsible for Hypertension. A genome wide association study of Korea and other countries inferred that ACE among the RAAS components has the strongest association with AHT after an adjustment for sex, age and weight [28]. Since the pathogenetic link between the two entities resides in RAAS, antihypertensive drugs became a hot topic. This was because a large proportion of patients used RAAS inhibitors for their treatment. Two of the most commonly employed groups of drugs are ACEIs which reduce the generation of Ang II by inhibiting ACE and ARBs which reduce blood pressure by blocking the binding of Ang II with AT1R. Both of them also increases the level of ACE2 and have been extensively used in patients with AHT and other cardiovascular diseases to maintain the stability of blood pressure and reduce the risk of adverse events in cardiocerebrovascular system and kidney [29,30]. The argument was that these drugs may contribute to higher disease protraction or worsen outcome and extensive lung injury as more ACE2 meant more susceptible to pathogenic entry. The question arose to whether discontinuation of these drugs was necessary in SARS-COV-2 infection patients. Many early studies hypothesized that in-fact these drugs may bring potential harm. Later extensive studies showed a protective effective of these group of medications against lung injury. ACE2 independently demonstrated to reduce lung tissue damage, associated inflammation and severe acute lung failure [31]. To correlate this information, experimental studies were conducted which also revealed protective role of these drugs against lung injury [32]. An Intensive Care Unit team demonstrated and shown that an increase in angiotensin 1 to 10 and a decrease in angiotensin 1 to 9 (its ACE2 processing product) was correlated with a poor prognosis in ARDS [33]. In response to the proposed adverse effects of ARBs or ACE inhibitors in risk and poorer outcome, many studies were done which found no adverse role and even protective role of the



same drugs. Other correlation studies also revealed no increase in risk or mortality [34,35,36]. The European Society of Cardiology (ESCAR) and other medical associations also advised it is advisable not to change the treatment regimen of ACEIs/ARBs for patients with hypertension during the COVID-19 pandemic, unless supported by definitive clinical evidence. For patients who are currently receiving RAAS antagonists for conditions for which they are known to be advantageous, such as hypertension, heart failure or ischemic heart disease, the ACC, HFSA and AHA advise continuing these medications. It was further stated that specific treatment decisions should be made based on each patient's hemodynamic situation and clinical presentation in the event that individuals with cardiovascular illness are identified with SARS-COV-2 infection. In fact, by preventing the pro-inflammatory effects of Ang II and by promoting the anti-inflammatory, anti-organ remodeling and tissue protective effects demonstrated in the lungs, these drugs can even have a protective role. Increased soluble ACE2 in the circulation could also serve as a binder of the SARS-CoV-2, thereby protecting other ACE2 bearing organs but most importantly the lungs itself. In this aspect recombinant ACE2 is also being extensively studied [37]. It was proposed that high-affinity variants of sACE2, can be engineered using mutagenesis, which may serve as decoy receptors for the pathogen. These variants by interacting with the spike proteins can serve as a competitor for native ACE2 in SARS-COV-2 infection. This can prevent the ACE2 downregulation as more native ACE2 will be available to convert angiotensin to Ang (1-7) and Ang (1-9) which can reduce inflammation potential [38,39,40]. In search of other treatment options in SARS-COV-2 infection, the medical research community focused on viral entry mechanism to find loop holes. In light of this direction, it was also demonstrated that pharmacological inhibition of proteases like TMPRSS2 or CatB/L reduced SARS-CoV-2 S-pseudo typed vesicular stomatitis virus or lentivirus entry [41,42,43]. Future treatment aspects also pose a need to further analyze host entry co-factors like Neuropilin-1, CD147, phosphatidylserine receptors, heparan sulfate proteoglycans, sialic acids, and C-type lectins. Another interesting but understudied area is the de novo onset of Hypertension after SARS-COV-2 infection. SARS-COV-2 infection can cause de-novo hypertension or worsen existing hypertension by its effect on RAAS or endothelium [44,45]. A retrospective study in a tertiary care center summarized that there is a real possibility that more than 10% of the general population is going to be affected by AHT post-SARS-COV-2 infection, many of them undetected, especially among patients with no prior conditions in their medical histories [46]. Among patients, 32 of them (16.08%) had either new onset arterial hypertension (15 patients) or a worsening of an existing hypertensive condition (17 patients) related to COVID-19. Another study found out new onset hypertension in 18 patients (12%), while diabetes mellitus, coronary artery disease, and COPD were not significantly different between admission and post-covid infection period [47].

DISCUSSION

Rodriguez et.al earlier pointed out that SARS-COV-2 is oftentimes underestimated as an infectious disease and gave insight to its effect on immune dysregulation caused by it [48]. The same inference can be obtained while analyzing the entity

for connecting the dots between AHT and SARS-COV-2 infection. Immune and inflammatory dysregulations are caused by both AHT and SARS-COV-2 infection. It is fascinating to observe that both these entities are interspersed within RAAS. AHT acts through ACE axis while SARS-COV-2 infection uses ACE2 to interact with RAAS. Both these axis function opposite to each other and ACE2 downregulation induced by SARS-COV-2 infection can work parallel with AHT to promote proinflammatory, pro-oxidative and organ damage inducing activities. The immune deregulatory activities and proinflammatory activities also bridge these entities. Due to the complex nature of interaction of SARS-COV-2 infection with the RAAS, patients who recover from the infection should be encouraged to do mandatory follow ups as de novo onset of AHT or worsening of existing AHT has been found in many patients. This can also be considered as a marker of damage induced on the vessel structures by SARS-COV-2 infection by ACE2 downregulation. The potential of ACE2 as a decoy receptor also signifies the importance of their common pathophysiological roots. However, this also signifies the need to study host- factors and role of other proteases so that the combined knowledge can be laid down as a foundation into practical treatment options.

CONCLUSION

In simple terms it can be said that SARS-COV-2 infection and AHT are 2 entities acting on two regulatory axes of RAAS. Broadly speaking these two axes act opposite to each other, with areas of cross interactions and intricacies with their end effects culminating in the RAAS. Regarding treatment RAAS inhibitors were not proved to have a detrimental effect on disease protraction or severity as of now. Additionally, by raising ACE2, inflammation and organ injury can be reduced as well. By realizing the effects of ACE2 in organ protection and inflammation and owing to it serving as a covid entry receptor, engineered ACE2 is studied as a potential therapeutic agent. However, other host factors and their interactions need to be further broken down. The pathogenic linkage between SARS-COV-2 infection and AHT is complex. In a susceptible hypertensive patient SARS-COV-2 infection can contribute to various immune dysregulations and can give rise to vicious cycles which once started can be difficult to break. The advantage of therapy focusing on pathogenic entry is that if properly intervened, added benefit of preventing appearances of such vicious cycles and immune-inflammatory cycles can be prevented. The de-novo onset of AHT in patients post SARS-COV-2 infection may reveal the existence of a bidirectional relationship as opposed to a simple cause- effect relationship between the two entities.

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SIDE EFFECTS TO ANTITHROMBOTIC THERAPY IN PATIENTS WITH COVID-19: POSSIBLE NEGATIVE IMPLICATIONS AND UNDERSTUDIED FACTORS

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ABSTRACT

Objective: To bring forth possible negative implications and side effects to antithrombotic therapy in patients with COVID-19 infection.

Materials and Methods: This review was done based on existing data and utilizing resources such as books, journals and online publications using search engines.

Results: The study took into account results from large studies. Inferences from ACTIV-4a, REMAP-CAP, ATTACC studies as well as ACTION, INPIRATION and RAPID were considered. Contrasting findings and understudied areas were also highlighted in the study.

Conclusions: There is a need for continuous and judicious monitoring of patients on DOACs. It was revealed that there can be changes in plasma drug concentrations owing to complex drug interactions with metabolic pathways and dysregulations induced by the disease itself. The bleeding risk was one of the main concerns. Routine thromboprophylaxis should be under question. Bleeding risk had relation to whether therapeutic, subtherapeutic or prophylactic therapy was used. There are some contrasting findings across studies which needs to be clarified by further studies.

KEYWORDS: Antithrombotic therapy, SARS-COV-2 infection, DOACs

INTRODUCTION

Severe Acute Respiratory Syndrome Corona Virus-19, shortened as SARS-COV-2, caused by a member of the Corona-viridae family led to an outbreak of respiratory infections which started off from Wuhan, China. It spread across countries and continents in a very rapid manner and was declared as a Pandemic by the World Health Organization on 11th of March, 2020. Ever since then, the treatment and vaccination for prophylaxis were some of the most sought-after medical answers for a long time. *The purpose* of this research is to study side effects to antithrombotic therapy in patients with SARS-COV-2 infection. *The aim* of this study is to shine light onto the possible negative side of therapy in patients with SARS-COV-2 infection using existing literature and clinical study findings. The main *objectives* are to clarify possible negative implications and understudied factors in treatment with antithrombotic therapy in patients with SARS-COV-2 infection.

MATERIALS AND METHODS

The given research was carried out on the basis of existing data, collected from journals, books and online publications. An example of this would be a Report published in Italy. This Report took into account Direct-acting Oral Anticoagulants (DOAC) in patients with SARS-COV-2 infection. The report analyzed 1039 patients hospitalized SARS-COV-2 pneumonia and candidates for antiviral therapy,

of whom 32 were on treatment with a DOAC [9]. 12 patients received concomitant therapy with DOAC during antiviral treatment. Each patient was subjected to a C-trough DOAC level comparison using the one measured at a thrombosis center preceding the hospitalization. In the patients who received concomitant therapy, a significant increase in DOAC plasma levels was seen after hospitalization. This can be explained by the following mechanism: DOACs interact with P-glycoprotein and/or cytochrome P450 (CYP)-based metabolic pathways. Antiviral drugs, such as Remdesivir are substrates of CYP 3A4, CYP 2D6, and CYP 2C8. Dexamethasone is also an inducer of CYP3A4. To further complicate the picture, SARS-COV-2 infection also has an effect on CYP regulation. The multiple drug-drug interactions (antiviral, antibiotics, antihypertensive, bronchodilators, and immunosuppressive drugs), in addition to metabolic alterations that are induced by the acute disease, can cause an unpredictable and unstable DOAC anticoagulant effect, exposing patients to the risk of uncontrolled bleeding or thrombotic complications [9]. DOAC was also the focus of interest in another nationwide cohort study using the Swedish Register [10]. In this study including more than 100 000 DOAC users, the ongoing use of these class of drugs was not associated with a decreased risk of hospital admission for laboratory-confirmed SARS-COV-2 infection nor for the composite of ICU admission or death due to laboratory-confirmed COVID-19. The findings were consistent in analyses with two different comparator groups, as well as across DOAC subtypes.



RESULTS

Therapeutic options, regimens and measures were revised and re-revised over time for the betterment of patients and clinical outcomes. SARS-COV-2 infection has been associated with inflammation and a prothrombotic state, with increases in levels of fibrin, fibrin degradation products, fibrinogen, and D-dimer. It has been found that SARS-COV-2 infection induces a complex inflammatory response that includes initiating the coagulation cascade related to von Willebrand factor, factor VII release, factor V upregulation, and platelet activation [1,2]. Circulating biomarkers reflecting systemic inflammation and coagulation activation (e.g., d-dimer and C-reactive protein) are independently associated with a greater risk of respiratory failure, thrombosis and death in patients with Covid-19[3]. Although, respiratory compromise is the cardinal feature of the disease, early studies have suggested that elevated circulating D-dimer levels are associated with mortality [4,5]. Due to the state of hypercoagulability associated with SARS-COV-2 infection, use of antithrombotic therapy for preventing many of the thrombotic complications came to practice. However, the relative risk versus benefit of antithrombotic therapy have not been addressed with clear distinction as of till now. New findings and reports add more insight to the applications of antithrombotic drugs in this scenario day by day. More anticoagulant bleeds have occurred during the pandemic, and more patients have delayed seeking medical attention for Vitamin K antagonists (VKA) - associated bleeding [6,7]. This however was due to the effect of the pandemic itself and the strict lockdown measures that came into practice which forced many of the outpatients who received anticoagulants for other reasons to lose control of their ideal coagulation profile. Even though this cannot be directly attributed to the side effects of antithrombotic therapy in patients with SARS-COV-2 infection, it was also a major factor that led to antithrombotic therapy being discussed and bleeding risk studied during the pandemic. The most important entities associated with a negative effect of anti-thrombotic therapy in patients with SARS-COV-2 infection that needed to be addressed were bleeding and possible drug interactions with other medications for SARS-COV-2 infection. Another important issue to mention is that even after adequate thromboprophylaxis; symptomatic venous thromboembolism (VTE) occurs in 4.4% of patients, ischemic stroke in 2.5%, and myocardial infarction in 1.1% [8]. Oftentimes the mechanisms underlying the effects of these entities are complex and they may be interspersed as well.

DISCUSSIONS

The major negative effect that is tailed along antithrombotic therapy is bleeding. The use of anticoagulants was associated with an increased risk of bleeding and bleeding related complications in patients with SARS-COV-2 infection. One of the studies to point out this was a single center retrospective analysis of 355 adult patients with confirmed diagnosis of SARS-COV-2 infection from March 1 to May 31, 2020 [11]. It analyzed the relationship between degree of anticoagulant dose and bleeding events by site. The bleeding rates were subjected to comparison among the therapeutic,

subtherapeutic and prophylactic dose categories of anticoagulants. The former two categories of dosing were given based on a background of elevated D-dimer levels. Hence the severity of the infection was respected in this manner. The findings from the study revealed a higher bleeding risk which was proved by the incidence of more major bleeding events in the therapeutic dose category. The subtherapeutic groups had lower incidence of bleeding events. The above findings establish the fact that anticoagulants and thereby the practice of antithrombotic therapy itself carries a risk for increased bleeding episodes. The additional fact that could be understood from the findings above is the relationship between the bleeding risk and the dosage of the formulations used. The dosage categories; that is whether prophylactic, subtherapeutic or therapeutic dosages had an impact on the bleeding events. Another study evaluated Association of Treatment Dose Anticoagulation with In-Hospital Survival [12]. The risk of bleeding was also compared in the same study. 786 (28%) of the 2,773 patients with SARS-COV-2 infection hospitalized in the study got systemic treatment-dose anticoagulants during their hospital stay. When anticoagulants were used to treat patients, the in-hospital mortality was 22.5% with a median survival of 21 days as opposed to 22.8% and 14 days for patients who did not get treatment-dose AC (anticoagulants). But when comparing those who received prophylactic dosage AC or did not receive AC to those who got treatment-dose AC, the latter had a higher probability of needing invasive mechanical ventilation. The study also probed into the connection between bleeding events and systemic treatment-dose AC delivery. A diagnosis code for major bleeding was kept which included events from intracranial hemorrhage, hematemesis and hematuria to anal hemorrhage. The code was reinforced by strict measurable variables like Hemoglobin values and presence of transfusions to signify the severity. In patients not receiving therapeutic AC, 1.9% had bleeding events compared with 3% in patients receiving therapeutic AC. Among this 3% patients on therapeutic AC who had bleeding, 63% had the bleeding event after AC initiation and only 37% had a bleeding event before AC initiation. This aids us to analyze the link of bleeding events and their attributability to ACs in general. Also, in the same study bleeding occurred more frequently in intubated patients (30 of 395; 7.5%) than in non-intubated patients (32 of 2378; 1.35%). However therapeutic dose categories having a higher incidence of organ support or mechanical ventilation was a fact that further needed attention. Throughout literature opposing findings were found on outcomes and requiring organ support or ventilation, but the differences mainly were skewed based on the severity; that is whether the patient was non critically or critically ill. Both critically ill and noncritically ill patients with SARS-COV-2 infection have been the target of finished randomized clinical studies of antithrombotic medications. When compared to regular prophylactic heparin, therapeutic-dose anticoagulation with heparin did not enhance clinical outcomes and was linked to an increased risk of severe bleeding events in critically ill patients. SARS-COV-2 infection trials in patients who are only moderately unwell have produced conflicting findings. When compared to usual-care thromboprophylaxis, therapeutic-dose heparin or low-molecular-weight heparin increased the



likelihood of survival until hospital discharge with a decreased need for organ support in the international, adaptive, multiplatform randomized clinical trial [13] that combined data from the ACTIV-4a, REMAP-CAP, and ATTACC studies. In contrast, there was no difference in the primary result between the therapeutic-dose and prophylactic-dose groups in the ACTION [14] INPIRATION [15] and RAPID [16] studies.

CONCLUSIONS

SARS-COV-2 infection itself is associated with proinflammatory and a prothrombotic state. Usage of DOACs in patients needs to be cautiously monitored as antiviral drugs such as Remdesivir, corticosteroids and SARS-COV-2 infection itself can interact with metabolic pathways and hepatic enzyme systems thereby altering the serum levels of DOACs. The altered drug pharmacokinetics may lead to an increase in bleeding risk predisposing the patient to bleeding events. In contrast to this drug interactions which activate hepatic enzyme systems may lead to faster clearance of DOACs from circulation thereby removing them from the spectrum of adequate antithrombotic protection leading to thrombosis. Another important factor that needed to be considered is the dosage regimen whether: therapeutic, subtherapeutic or prophylactic dosage used. The cohort study example described in the study pointed out that bleeding risk was higher when comparing treatment dose AC with non-treatment dose AC. Even though survivability on invasive mechanical ventilation was longer in patients using treatment dose AC, higher incidence of patients requiring mechanical ventilation was also in the same group. Organ support and invasive mechanical ventilation was being more associated to the treatment dose AC group is another factor that must be taken into consideration. In addition, prophylactic heparin and therapeutic-dose anticoagulation with heparin did not enhance clinical outcomes and was linked to an increased risk of severe bleeding events in critically ill patients. However conflicting findings have found regarding outcomes, requiring organ support or ventilation in other studies. This could be related to whether the patient is critical or non-critical. Conflicting findings mostly arose when the subjects of study were moderately unwell patients. Increased survival was inferred from ACTIV-4a, REMAP-CAP, and ATTACC studies, whereas therapeutic-dose and prophylactic-dose groups in the ACTION, INPIRATION and RAPID studies did not find significant differences. This also bring forward need for larger studies with methods to remove bias and better standardization. Along with this therapeutic drug monitoring, better analysis of drug interactions in patients with SARS-COV-2 infection and bleeding risk stratification systems need to be considered.

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THE POSSIBILITIES OF AUTOMATING THE ASSESSMENT OF COGNITIVE COMPETENCE OF FUTURE TEACHERS

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ANNOTATIONS

The modern development of society, the globalization and integralization of world systems in various cohas of Incon's life and activities, the transition to market economics in Uzbekistan, make increasingly high demands on the formation of professional people as mature specialists in their field. The resulting kach competition brought about a number of changes in society's demands for the shaxci qualities of teachers and its kach activities. In connection with this, there was a need for a competitive teacher in the labor market, a shaxc with a set of acocious competencies in intellectual, communication, information and other cohas.

KEYWORDS: education, cognitive component, modern creator.

БЎЛАЖАК ЎҚИТУВЧИЛАРНИНГ КОГНИТИВ КОМПЕТЕНТЛИГИНИ БАҲОЛАШНИ АВТОМАТЛАШТИРИШ ИМКОНИАТЛАРИ

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кафедраси ўқитувчиси**

Аннотация

Жамиятнинг замонавий тараққиёти, инсон ҳаёти ҳамда фаолиятининг турли соҳаларида жаҳон тизимларининг глобаллашуви ва интеграциялашуви, Ўзбекистонда бозор иқтисодиётига ўтилиши, касб эгаларининг ўз соҳасининг етук мутахассис сифатида шаклланганлигига тобора юқори талаблар қўймоқда. Юзага келган касб рақобати ўқитувчиларнинг шахсий фазилатлари ва унинг касб фаолиятига жамият талабларида бир қатор ўзгаришларни юзага келтирди. Шунга боғлиқ равишда меҳнат бозорида рақобатбардош ўқитувчига, интеллектуал, мулоқот, ахборот ва бошқа соҳаларда асосий компетенциялар тўпламига эга шахсга эҳтиёж юзага келди.

Калит сўзлар: таълим, когнитив компонент, замонавий ижодкор.



Таълим соҳасида олиб борилаётган ҳамда аниқ мақсадга йўналтирилган давлат сиёсати ижтимоий жамият тараққиётини таъминловчи устувор йўналишлардан бири сифатида эътироф этилди. Бу йўналишда амалга ошириладиган муҳим тадбирлар қаторида мутахассисларнинг янги авлодини шакллантириш, маънавий-ахлоқий жиҳатдан етук, мустақил дунёқарашга эга, ижодий фикрловчи, бой миллий мерос, шунингдек, умуминсоний ва миллий қадриятларга садоқатли баркамол шахсни тарбиялаб, вояга етказиш вазифалари белгиланди.

Олий таълим муассасаси талабаларининг шахсий ривожланиши улар ижтимоий-шахсий қизиқишларининг касбий йўналганлиги, мустақил фикрлашлари, ижодкорликлари, фаолликлари, муносабатларининг чуқурлашиб ҳамда бойиб бориши, дунёқарашларининг турғунлашуви ва ўз-ўзини тарбиялашга бўлган эҳтиёжларининг шаклланиши каби ҳолатлар билан тавсифланади. Бўлажак мутахассис учун олий таълим муассасасида таълим олиш жараёни – педагогик фаолиятни муваффақиятли амалга оширишда касбий жиҳатдан аҳамиятли саналган сифат, билим, кўникма ва малакаларни ривожлантириш, касбий кмпетентликни шакллантириш ҳамда ўз-ўзини такомиллаштиришнинг энг мақбул давридир. Талаба ушбу жараёнда билимларни жамлаш, сақлаш, узатиш, уларнинг мантикий тузилмасини яратиш ва келажакда касбий фаолиятини ташкил этишда уларни самарали қўллаш йўлларини ўрганиш каби ҳолатларни ўзида мужассам эттиради. Бўлажак мутахассиснинг бутун ҳаёти даврида давом этадиган ва таълимнинг барча босқичларидан иборат бўладиган узлуксиз таълим шахсининг бутун умри давомида интеллектуал ривожланишининг негизи сифатида унинг ҳаёт тарзини белгиловчи феномен ҳисобланади ва буни турлича талқин қилиш мумкин: умуммаданий ва касбий компетентликнинг барча шакллари ривожлантириб боришнинг узлуксизлиги, шахс фаолияти турларининг янги сифат босқичига кўтаришнинг узлуксизлиги, таълим турларининг узлуксизлиги ва бошқалар. Бу ҳолда, таълимнинг узлуксизлиги “узлуксиз таълимнинг барча босқичларида таълим жараёнининг тугалланганлиги”ни билдиради.

Компетенция когнитив муаммони ечиш қобилияти билан чамбарчас ҳолда қуйидаги каби уч белги кўринишида: ўрганиб (ўзлаштириб) ва ўрганса (ўзлаштира) бўладиган муаммо, иккинчидан, ўзлаштирилган билимга асосланиб муайян ҳаракат вазиятларда, учинчидан билим ва кўникманинг уйғунлашуви натижасида намоён бўлади. Когнитив компетенция эса компетентлик ва асосий компетенция тушунчалари билан бир қаторда олий таълим муассасаларининг фаолият тайёргарлиги, ўзини ўзи ташкил этиш ва ривожлантириш сифати қаралади. Унда таълим даражасини доимий равишда ошириш, маърузалар сифати, янги билимларни мустақил ўзлаштириш имкониятини фаоллаштириш, кўникмаларни шакллантиришга эришиш орқали мақсадга эришиш назарда тутилади.

Илмий терминологияда “Когнитив компетенция” тушунчаси ривожланиш хусусиятлари ва моделларни тизимлаштириш, методикасини ишлаб чиқиш, олий таълим тизимида уларнинг шаклланиши ва ривожланишнинг тизимлашган асосларини мактаблар ва профессионал таълим дастурларини лойиҳалашда талабаларнинг интеллектуал ривожланишига алоҳида эътибор қаратишдир. Когнитив компетенция касбий компетенциянинг ажраламас таркиби бўлиб, билимни бошқариш имкониятини тавсифлайди – идрок, фикрлаш жараёнлари, шунингдек, қайта ишлаш ва тушуниш жараёнлари – ахборот, муаммолар ва муаммоларни ҳал қилиш жараёнлари ва узатиш натижалари ва қабул қилинган ечимлардир.

Бизнингча, когнитив компетенция- талабаларнинг қобилияти, уларнинг ҳаракатидаги зарур хулқ-атвор стандартларидан иборат бўлиб, ахборот қабул қилиш, аниқ мақсадга эришиш йўлларини режалаштириш, пайдо бўлган муаммоларни ҳал қилиш ҳамда олган билимлари асосида тегишли



қарорларни қабул қилаолишлари назарда тутати.

Бўлажак ўқитувчини когнитив компетенцияларининг шаклланиши унинг жамиятдаги ўрни, педагогика олий таълим муассасасидаги мажбурияти ва вазифаларига ҳамда индивидуал қобилиятларига боғлиқ бўлади. Ўқитувчининг ижодий индивидуаллиги унинг индивидуал хусусиятлари (фикрлашнинг илмий таркиб топганлиги, ишга ижодий ёндашиши, ўз имкониятларини рўёбга чиқаришга интилиши ва бошқалар)нинг ривожланиш даражаси билан белгиланади. Бўлажак математика фани ўқитувчисининг ижодий индивидуаллигини ривожлантириш ва такомиллаштиришнинг психологик-педагогик шарт-шароитлари қарама-қаршилигини ҳис қилиш, уларнинг ечимини топиш учун эса ўзига хослик ва мақсадга мувофиқлик каби касбий ҳислатларнинг таркиб топишида намоён бўлади.

Замонавий ижодкор ўқитувчи педагогик фаолиятнинг репродуктив (эса қолган нарсани тасвирламоқ) усули ва ижодкорликдан бирини танлашда нафақат ўзлигини, балки ҳаётий мақсадларини ҳам рўёбга чиқаради. У ўзини сифат жиҳатидан ўзгартиради, психологик тўсиқларни енгади, касбий аҳамиятли сифатларини ривожлантириш имкониятларини қидиради, ўз педагогик концепциясини ишлаб чиқади. Умуман олганда, ўқитувчининг педагогик фаолияти учун, биринчидан, инновацион йўналтирилганлик, иккинчидан, ўз ишига ижодкорона ёндошув, индивидуаллик каби хусусиятлари жуда муҳимдир. Ижодкор ўқитувчи ўз-ўзини такомиллаштирмай туриб, индивидуалликни ривожлантирмай, касбий компетентлигини шакллантирмасдан касбий фаолиятда юқори мавқега эришиш мумкин эмаслигини тўғри англаб етади. Шу сабабли ҳам касбий зарурат бўлган сифатларни ҳаётий мақсад сифатида ривожлантирмай туриб, янги технологияларни эгаллаши мумкин эмас. Айнан ушбу икки йўналишни педагогнинг ижодий индивидуаллигининг кўрсаткичи сифатида қабул қилиш мумкин. Ўқитувчининг педагогик услуги - бу шахс томонидан ўз индивидуаллигини касбий фаолият шарт-шароитларини уйғунлаштириш тизими, шахс ижодкорлигининг манбаи ва ижодий фаолият натижаси кўринишида ўзлигини намоён қилиш воситасидир.

Ўқитувчининг индивидуаллигида психологик ҳамда шахсий жиҳатни ажратиб кўрсатиш мумкин. Уларнинг педагогик фаолияти умумий ва касбий қобилиятларнинг, шунингдек, касбий мотивациянинг намоён бўлиш даражаси билан белгиланади. Етарли даражада ривожланган қобилиятлар, мақсадлар, эҳтиёжлар доираси қанчалик кенг бўлса, ўқитувчининг касбий маҳорат даражаси шунчалик юқори бўлади.

Ўқитиш муҳитида таълим технологияларини мустақил, тадқиқотчилик ишларига йўналтириш, ижодий сифатларини ривожлантириш, таълим сифатини баҳолаш тизимини инновацион методологик модернизациялашни талаб этади.

Сўнги вақтларда кўпгина олимлар таълим сифатини интеграл тавсифига эътибор қаратиб, таълим натижаларининг меъёрий талабларга, ижтимоий ва шахсий кутиладиган эҳтиёжларга мувофиқлик даражасини акс эттиради [52].

Бўлажак ўқитувчилар касбий тайёргарлиги сифатини компетентли-методологик парадигма асосида компетенцияларини баҳолашнинг янги технологияларини, янги тизимини ишлаб чиқиш лозим. Айни вақтда ҳар бир таълим муассасаси ўқув ва касбий фаолият соҳалари бўйича касбий компетенцияларни баҳолаш муаммосини амалий ҳал этиш, баҳолаш фондини яратишга эътибор қаратмоқда.

Компетенциялар таълим мазмуни, таълим муассасасининг таълим муҳити ва асосан таълим технологиялари воситасида шакллантирилади ва ривожлантирилади. Ўқитиш технологияларини



мустақил, тадқиқотчилик ишларига йўналтириш, талабаларнинг ижодий сифатларини ривожлантириш, таълим сифатини баҳолаш тизимини инновацион методологик модернизациялашни талаб этади. Анъанавий баҳолаш воситаларини янги замонавий баҳолаш воситалари билан алмаштириш орқали мутахассислар тайёрлаш сифатини замонавий талабларга мослаштириш эҳтиёжини қондириш мумкин.

Компетентликни баҳолашда алоҳида олинган бирор бир лаёқатлилиқ даражасини эмас, балки инсон томонидан шахсий аҳамиятга эга бўлган мақсадларга эришиш учун сарф қилинадиган, узоқ вақт давомида, турли хилдаги ижтимоий, педагогик, психологик, техник-технологик ва бошқа вазиятларда намоён қилинадиган компетентликларнинг тўлиқ тўпламини назарда тутиш керак бўлади. Бунда педагог дуч келиб қолган муайян вазият унинг ривожланишига, қадриятларининг шаклланишига ва янги компетентликларни эгаллашига бевосита таъсир этади. Шахснинг ўзига хос, интегратив сифати ҳисобланадиган компетентликнинг тизимни ҳосил қилувчи марказий компоненти – билиш воситаларига оид компетентлик бўлиб, у иккита таркибий қисмдан иборат: моддий-мотивацион ва рефлексив-креативлик. Назарий билимларни амалий ҳаракатларнинг мослашувчан, ўзгарувчан ва тезкор шаклларига кўчиришнинг бу воситаларини эгаллаганлик тизимли компетентликни таъминлайди.

Тадқиқотимиз давомида талабаларнинг касбий фаолиятга тайёргарлигини бевосита касбий компетенцияларини баҳолаш мезонлари, жараёнлари, метод ва технологиялари йиғиндиси сифатида тадқиқ этилиб, баҳолаш воситалари фондини шакллантириш, компетенцияларни эгаллаш мониторинги дастурини ишлаб чиқишга қаратдик.

Ишлаб чиқилган компетенцияларни баҳолаш тизимининг ўзига хос хусусиятлари куйидагилардан иборат:

таълим натижаларини баҳолашга тизимли ёндашув (комплекс ҳолда умумий ва касбий компетенцияларни шаклланганлик даражасини баҳолаш);

асосий таълим дастурларини ўзлаштиришнинг режалаштирилган натижаларидан (компетенцияларидан) баҳолаш учун мазмунли ва мезоний асос сифатида фойдаланиш;

касбий вазифаларни бажариш қобилияти билан тавсифланган компетенцияли ёндашув асосида умумкасбий фанлар таълим ютуқларини баҳолаш;

касбий компетенцияларни эгаллаш даражаси мониторинги;

режалаштирилган натижалар, воситалар ва улар тақдимотини ишлаб чиқишда даражали ёндашув;

компетенцияларнинг ривожланиш динамикасини тавсифловчи йиғма баҳолаш тизимидан (портфолио) фойдаланиш;

таълимнинг фаол, интерфаол шаклларида фойдаланиш;

илғор таълим технологияларидан, лойиҳалаш технологияларидан фойдаланиш.

Касбий компетенцияларни баҳолаш тизимининг моделини яратишда ушбу тизимнинг асосий таркибий қисмлари аниқланди, уларнинг ўзаро алоқалари кўриб чиқилди, моделнинг амал қилиш чегаралари ва чекланишлари аниқланди.

✓ мақсадли компонент, ДТС малака талаблари, таълим хизматлари истеъмолчилари, мутахассислар тайёрлашга ҳудудий талабларни ўзида мужассамлаштиради;

✓ ресурс компоненти касбий компетенцияларни эгаллаш даражасини баҳолашнинг автоматлаштирилган моделини таъминлашни бошқариш;

✓ касбий компетенциялар кластери рўйхати – касбий компетенцияларни эгаллаш даражасини баҳолашнинг асоси бўлиб, ҳар бир компетенция учун технологик харита ва кластерда гуруҳланган



ёндош компетенцияларни ёритади;

✓ диагностик комплекс, баҳолаш методлари, воситалар, услуб ва воситаларини, шунингдек, баҳолаш воситалари фондини қамраб олади;

✓ автоматлаштирилган дастурли-технологик комплекс ўзида баҳолаш натижаларини ишончилигини назорат қилишни амалга оширади. Маълумотларни йиғиш, хулосаларни коррекциялашни амалга ошириш, таълим жараёни кўрсаткичлари натижаларини назорат қилиш математик методларни қўллаш воситасида амалга оширилади.

Тавсия этилган моделда баҳолаш предмети математика мутахассиси касбий компетенциялари ҳисобланади.

Ресурс компоненти ўзида методик, ҳуқуқий-меъёрий, ахборот, кадр ва ташкилий таъминотни ёритади. Касбий компетенцияларни эгаллаш даражасини баҳолашнинг автоматлаштирилган моделининг ресурс компоненти қуйидагиларга хизмат қилади:

- касбий компетенцияларни эгаллаш даражасини баҳолаш жараёнининг методик таъминоти, касбий компетенцияларини эгаллаганлик даражасини баҳолашни амалга ошириш учун зарур ўқув-меъёрий ҳужжатлар мажмуасини тақдим этади;

- меъёрий-ҳуқуқий таъминот касбий компетенцияларни эгаллаш даражасини баҳолаш жараёнини мувофиқлаштириш, локал меъёрий актлар ва ҳолатлар комплектидан таркиб топиб касбий компетенцияларни эгаллаганлик даражасини баҳолашни амалга ошириш учун зарур;

- ахборот, кадр ва ташкилий таъминот –ДТС малака талабларига мувофиқлаштириш ва таълим ташкилоти мажбурий талаблари ҳисобланади.

Мазкур модел универсал ҳисобланиб, талабаларнинг умумий ва касбий компетенцияларини баҳолаш учун қўлланилиши мумкин.

Касбий компетенцияларни эгаллаш даражасини баҳолашнинг тақдим этилган автоматлаштирилган модели нафақат касбий компетенцияларни баҳолаш мониторингини амалга ошириш, балки баҳолашнинг универсал иккиламчи ўлчовидан фойдаланиб миқдорий баҳолашнинг вербал аналогига мувофиқлигини таъминлайди. Дастурий компонентдан фойдаланиб олинган маълумотлар асосида битирувчилар касбий тайёргарлиги сифатини орттиришни таъминлаш ҳамда таълим жараёнини тузатиш (коррекциялаш) амалга оширилади.

Моделдаги баҳолаш воситалари вазифаси предметли-фаолиятли ва модулли ёндашув нуқтаи назаридан ва шакллантирилган касбий компетенцияларни ҳамда битирувчилар тайёргарлигини баҳолашнинг қуйидаги функцияларини ҳал қилади:

- зарур билим, кўникма ва малакаларни назорат қилишни баҳолаш воситалари фонди ёрдамида ва ўқув соҳаси, модулларини эгаллашни бошқариш ва қайтар алоқа элементлари ёрдамида амалий таъминлаш;

- битирувчилар касбий компетенцияларини баҳолаш воситалари фонди ёрдамида дастурлаштирилган назоратини амалга ошириш;

- таълим сифатини бошқариш ва назорат қилиш даражасига эришишни битирувчилар малакасини тан олиш нуқтаи назаридан жаҳон таълим тизими ва хорижий иш берувчиларнинг талабларига мослаштиришни таъминлаш.

Шунингдек, талабалар касбий компетентлигини баҳолашнинг автоматлаштирилган моделини амалиётга жорий этиш касбий компетенцияларни эгаллаш даражасини баҳолашнинг маълум технологияларидан фойдаланишни тақозо этади [51, 18-б.].

Олинган натижалар компетенция шаклида таълим натижаларини баҳолаш учун воситаларни



ишлаб чиқишни талаб этади. Шундай қилиб, ўрта ва юқори даражадаги касбий компетенцияларни эгаллаш даражаси сифатини баҳолаш асосида – касбий компетенцияларни эгаллаш даражасининг микдорий баҳолаш шакллантирилади.

Касбий компетенцияларни ўзлаштириш даражасини баҳолашнинг тавсия этилган модели асосида ишлаб чиқилган автоматлаштирилган дастурий таъминот ва технологик мажмуаси, касбий компетенцияларни ўзлаштириш даражасини ишончли ва объектив баҳолашни таъминлайди. Мазкур мажмуа ўқитишнинг электрон воситалари (электрон дарслик, электрон ўқув-методик мажмуа ва х.к.), баҳолаш воситаларининг электрон фонди ва автоматлаштирилган ахборот тизимларидан иборат. Мажмуадан фойдаланиш ҳар бир талабанинг касбий компетенцияларни ўзлаштириш даражаси мониторингини таъминлайди, баҳолаш ҳужжатларини шакллантириш талабаларнинг ўқув мотивациясини орттиради, ўқитувчи иш вақтини тежайди.

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THROMBOEMBOLIC COMPLICATIONS IN PREGNANCY INCIDENCE, DIAGNOSIS AND MANAGEMENT

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ABSTRACT

The development of thromboembolic complications, including deep vein thrombosis (DVT) and pulmonary embolism (PE), in pregnancy is an major issue of obstetrical interest because of its potential developmental complication increases maternal mortality. The management of thromboembolic complication in pregnancy till now a days is an unsolved problems and requires a multidisciplinary approach involving obstetricians, hematologists, and other specialists. The management of thromboembolic complications in pregnancy typically involves a combination of anticoagulant therapy, close monitoring, and preventative measures. The objective of the study is To evaluate the most type of thromboembolic complications in pregnancy, To determine the clinical manifestation of thromboembolic complications in pregnancy, To evaluate the diagnosis of thromboembolic complications in pregnancy and To evaluate the management of thromboembolic complication in pregnancy.

KEYWORDS: 'Thromboembolic complications', 'pregnant women', 'DVT', 'PE' and 'management of thromboembolism in pregnancy'.

INTRODUCTION

A rare but significant cause of sickness and mortality during pregnancy and the puerperium is venous thromboembolism. It has been estimated that it affects 1 in 1000 to 1 in 2000 pregnancies despite the fact that few research have made use of unbiased diagnostic methods. The treatment of venous thromboembolism in individuals who are not pregnant has changed significantly during the past 20 years. Furthermore, we now have a better grasp of how the coagulation system changes throughout pregnancy. Nonetheless, due to the absence of prospective clinical trials, the therapy of venous thromboembolism during pregnancy continues to be a contentious issue. We will provide a summary of our current understanding and a logical management strategy in this essay [1]

For a number of reasons, managing venous thromboembolism (VTE) during pregnancy is difficult. When compared to non-pregnant people, several diagnostic tests are less reliable in pregnant patients, and some radiologic treatments can be harmful to the fetus. The choices are not ideal when anticoagulants are necessary. Coumarins can harm the developing baby in several ways, including embryopathy. UFH and LMWHs are two types of heparins. can induce maternal thrombocytopenia and osteoporosis and need parenteral delivery, making long-term administration difficult. Although LMWHs are presumably less likely than UFH to result in thrombocytopenia and osteoporosis in pregnant women, it is yet unknown what dosages are best for these purposes [2]

The diagnosis of venous thromboembolism (VTE), as well as the management of individuals with a high risk of or existing VTE, can be complicated during pregnancy due to physiologic and anatomical changes. Similar to in non-pregnant patients, a precise objective test is necessary to confirm a clinical

diagnosis of VTE. The procedures are mostly extrapolated from those used in non-pregnant people with adjustments to reduce the radiation dose and get around the limits of diagnostic testing in pregnancy because there haven't been many diagnostic investigations of VTE in pregnant women. UFH or LMWH is a low-molecular-weight heparin, administered typically throughout pregnancy subcutaneously and for 4 to 6 weeks following childbirth, are the main treatments for established VTE during pregnancy [3]

In both the short and long term, venous thromboembolism (VTE) in pregnancy is a significant source of morbidity. To lower maternal mortality and morbidity, effective primary prevention and acute therapy of VTE in pregnancy are crucial. Use of coumarins during pregnancy is linked to severe fetal and maternal hazards, notably those related to teratogenesis and bleeding. Coumarins cross the placenta. Unfractionated heparin (UFH) was the common anticoagulant used in pregnancy for a long time. Low-molecular-weight heparins (LMWHs) have taken the role of UFH in the treatment and prevention of acute VTE in women who are not pregnant [4]

The benefits of LMWHs over UFH include improved anti-Xa (antithrombotic) to anti-IIa (anticoagulant) ratios that lower the risk of bleeding; stable and predictable pharmacokinetics with increased bioavailability and half-life that enables less frequent fixed or weight-based dosing without the need for monitoring; subcutaneous administration; and less activation of platelets with less binding to platelet factor 4 that significantly lowers the risk of heparin (HIT).The 2% incidence of symptomatic heparin-induced osteoporotic fracture in pregnancy has been a serious issue with the widespread usage of UFH in pregnancies. A decreased risk of this fatal consequence is linked to LMWHs [5]



PURPOSE

To Evaluate the clinic- paraclinical expression of thromboembolic complications in pregnancy and their management

OBJECTIVE

To evaluate the most type, to determine the clinical manifestation, to evaluate the algorithm of the diagnosis and to evaluate the management of thromboembolic complications in pregnancy.

METHODOLOGY

This study is a literature review that synthesizes and evaluates existing research on the topic thromboembolic complication in pregnancy: incidence, diagnosis and management

The aim is to review the thromboembolic complications in pregnancy, the most common thromboembolic complication in pregnancy, clinic- paraclinical and their management. The data extracted from the studies were analyzed and synthesized thematically, with a focus on the most common type, clinical manifestation, diagnosis and management of thromboembolic complications in pregnancy. In this article we included 10 studies from different countries.

STUDY	AUTHOR	No Of Patients	DVT and Percentage	PE and Percentage	Scoring Method	DIAGNOSIS Method	TREATMENT Method
Study 1	Lian Y, 2023 CHINA	302	282 (93.4%)	20 (6.6%)	RCOG model- 73% CAPRINI model- 22% WELLS score- 5%	CUS- 199 (70.5%) Contrast venography- 83(29.5%) CTPA- 13(65%) v/p scan- 7(35%)	LMWH – 282(93.4%) UFH- 20 (6.6%) Supportive care is recommended Follow up is also recommended
Study 2	Mohsen Ayyash, 2022 RIYADH	180	143 (79.5%)	37 (20.5%)	RCOG model	Doppler ultrasound- 87(60.9%) V/P scan- 9(24.4%) CTPA- 28 (75.6%)	-
Study 3	Naser Al-Husban, 2021 JORDAN	112	85 (75.9%)	27 (24.1%)	RCOG model	CUS- 68(80%) CTPA- 15(55.6%) V/P scan- 12(44.4%)	LMWH- 92(82.2%) UFH- 20(17.8%) Supportive care is recommended Follow up is also recommended
Study 4	De Gruyter, 2020 SINGAPORE	89	71 (79.8%)	18 (20.2%)	RCOG model	CUS- 54(76.1%) CTPA- 12(66.7%) V/P scan- 6(33.3%)	-
Study 5	Wei Zhang, 2020 CHINA	158	116 (73.5%)	42 (26.5%)	RCOG model	venous color Doppler-101 ultrasound (of the lower extremities 42 d after delivery.) (87.1%) CTPA- 33(78.6%)	LMWH- 95(60.2%) UFH- 63(39.8%) Supportive care is recommended



Study 6	Mohammed A. Alsheef, 2020 SUADI ARABIA	180	150 (83.4%)	30 (16.6%)	RCOG model	Doppler ultrasound- 52(34.6%) CUS- 98(65.4%) CTPA- 19(63.4%) V/P scan- 11(36.6%)	LMWH- 176(97.8%) UFH-4(2.2%) Supportive care is recommended Follow up is also recommended
Study 7	Awadalla Mohammed, 2019 AFRICA	78	62 (79.5%)	16 (20.5%)	-	CUS- 51(82.3%) CTPA- 11(68.7%)	LMWH- 54(69.3%) UFH- 24(30.7%) Supportive care is recommended
Study 8	Ryuji Kawaguchi, 2016 JAPAN	25	20 (80%)	5 (20%)	-	CUS- 13(65%) V/P scan- 3(60%)	LMWH- 21(84%) Follow up is recommended
Study 9	Zahra Fardiazar, 2014 IRAN	81	45 (55.6%)	36 (44.4%)	-	CUS- 36 (80%) CTPA- 28(77.8%)	
Study 10	Y. Dargaud, 2005 FRANCE	85	60 (70.5%)	25 (29.5%)	-	CUS at 13 weeks gestation- 48(80%) CTPA- 14(56%)	LMWH- 61(71.8%) UFH- 24(28.2%) Follow up is recommended

RESULTS

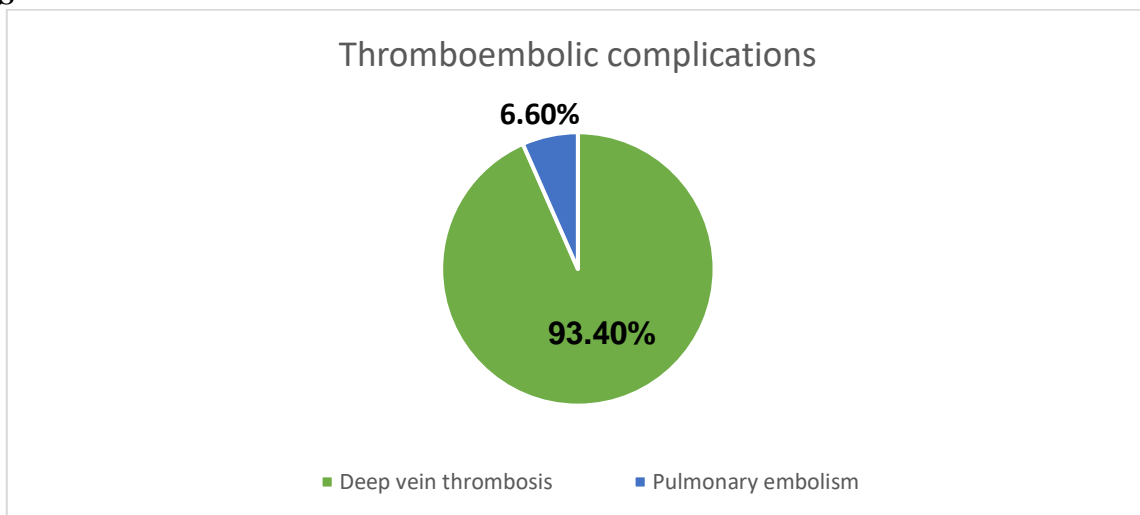


FIGURE 1: Incidence of Thromboembolic Complications

Thromboembolic complication developed in pregnancy were deep vein thrombosis from (93.4% to 55.6%) [OR=33.2] and

2nd most is Pulmonary embolism from (44.4% to 6.6%) [OR=16.4]

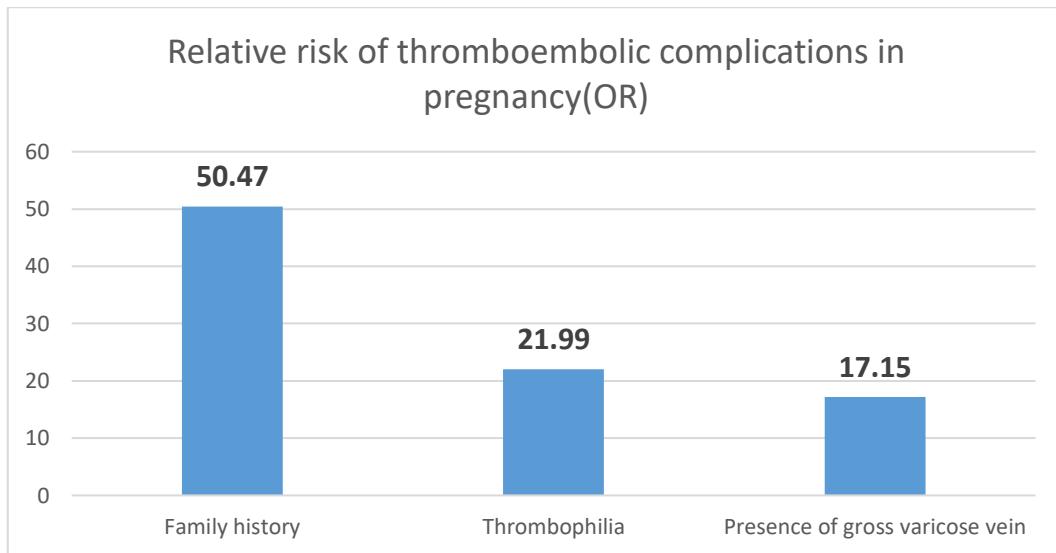


FIGURE 2: Relative Risk

The relative risk of thromboembolic complication in pregnancy increased if patient presented underlying conditions: family history (Odds ratio (OR) = 50.47), thrombophilia (OR = 21.99), presence of gross varicose veins (OR = 17.15)

Advanced maternal age: the relative risk of VTE in pregnant women over 35 years old has increased approximately 2-fold.

A large cohort study in the United States found that maternal women aged 35-44 were twice as likely to develop VTE as non-pregnant women aged 25-34

obesity (BMI > 25 kg/m²) (OR=30.43) and Obesity (BMI > 30 kg/m²) (OR=42)

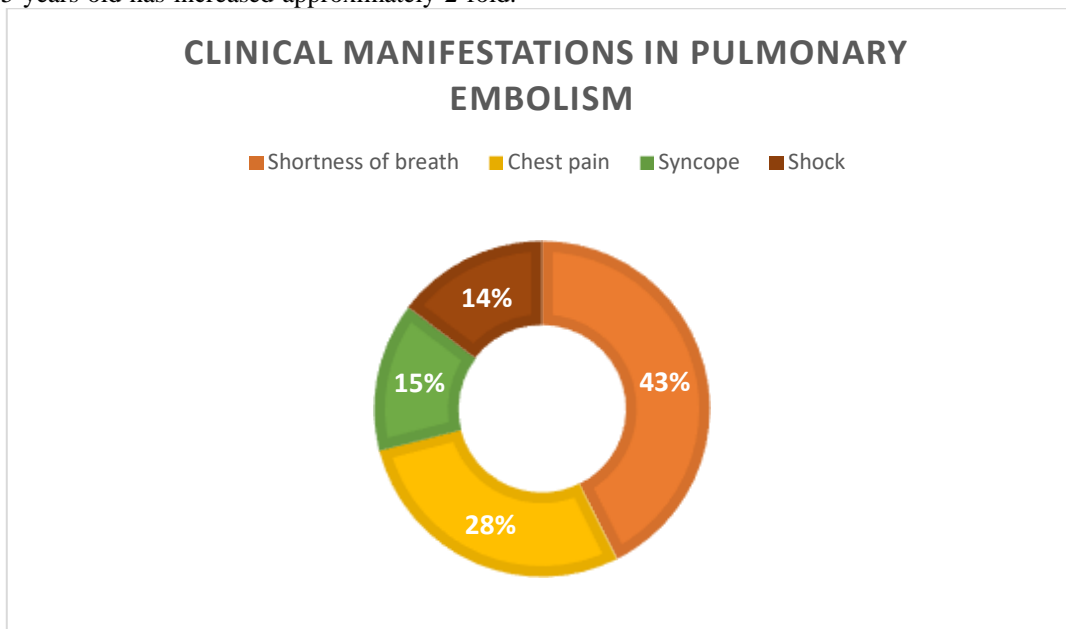


FIGURE 3: Clinical manifestation of PE

Symptoms of pulmonary embolism include: shortness of breath 43% (60% to 20.6%) OR=74.4, chest pain 28% (46% to 20.2%)

OR=69.4, syncope 15% (39% to 20.6%) OR=65.4, shock 14% (34% to 20.2%) OR=62.7

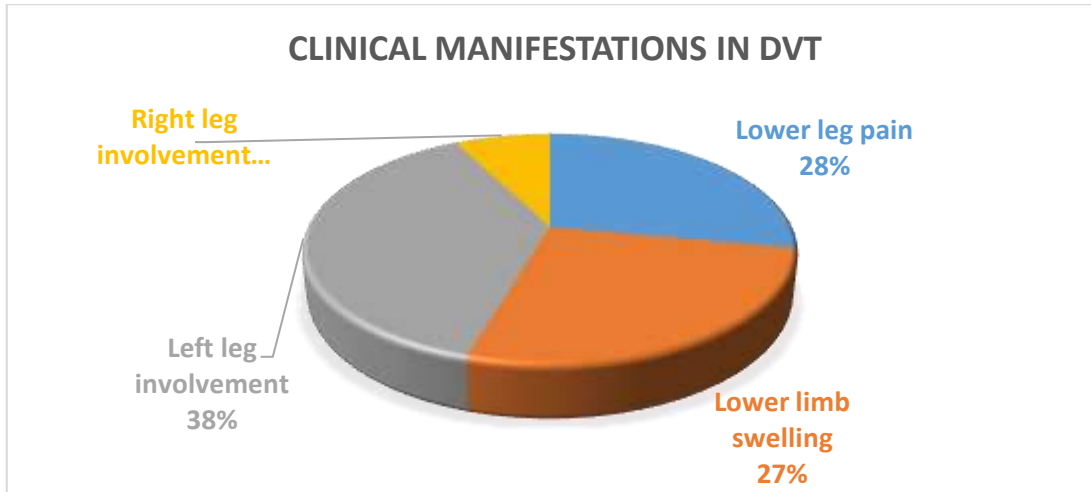


FIGURE 4: Clinical manifestations of DVT

The common clinical presentations in DVT include: lower leg pain 28% (OR=57.2), lower limb swelling 27% (OR=54.4), The left leg was involved in 38% (OR=77.4) of patients in

whom the proximal site was the dominant site of involvement and right leg DVT was observed in 7% (OR=15.5) of patients.

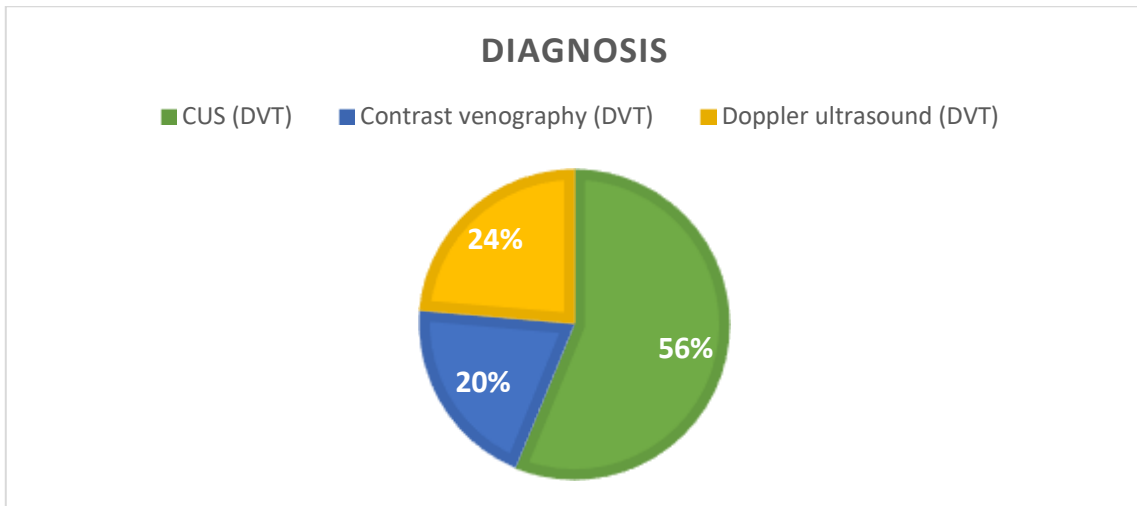


FIGURE 5: Diagnosis of DVT

The imaging studies required. The presence of clinical system diagnosis of DVT: compression ultrasound (82.3% to 56%)

OR= 43.8, Contrast venography (29.5% to 22%) OR= 30, Doppler ultrasound (87.1% to 34.6%) OR= 36.7

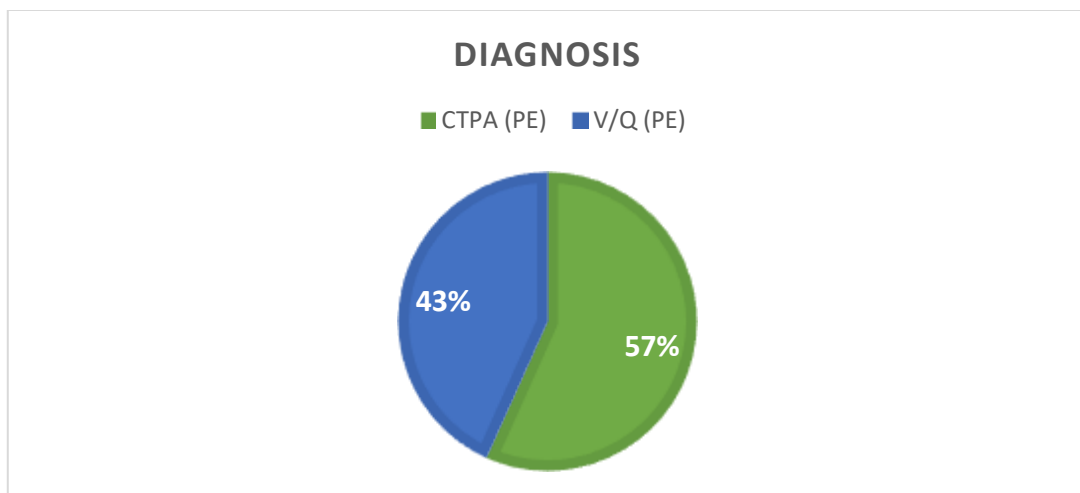


FIGURE 6: Diagnosis of PE

Imaging studies of PE include: computed tomography pulmonary angiography (CTPA) (78.6% to 55.6%) OR= 58.6,

ventilation-perfusion (V/Q) scanning (60% to 24.4%) OR= 44.6

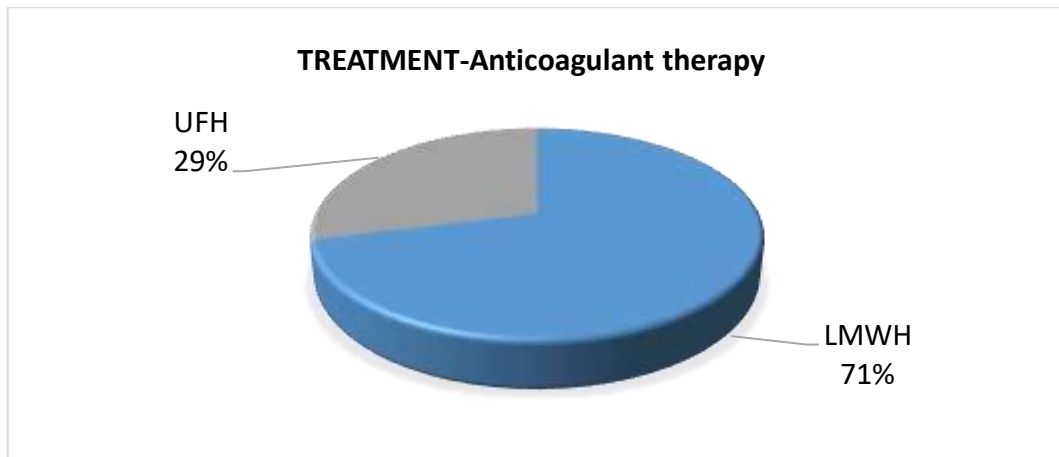


FIGURE 7: Treatment

The management of thromboembolic complications in pregnancy included: Anticoagulant Therapy like Low molecular weight heparin (LMWH) (97.8% to 60.2%) OR= 62.4 and Un fractionated heparin (UFH) (39.8% to 2.2%) OR= 43.6

Low molecular weight heparin (LMWH) 2,000-U injections daily as it was the drug of choice and According to RCOG guideline the recommended dose of LMWH for pregnant women with DVT is usually based on body weight and is adjusted as pregnancy progresses. The usual starting dose is 1 mg/kg of body weight given twice a day, and the dose may be adjusted based on regular monitoring of the patients' blood clotting levels.

Enoxaparin 40mg SC q24 h was administered to most of the patients as initial treatment for 6 to 8 weeks postpartum and compression stockings were given to all patients during the entire pregnancy. Follow-up lasted until 3months after delivery.

CONCLUSIONS

According to the study and analysis, managing thromboembolic problems in pregnancy is a complicated problem that demands for a multidisciplinary approach.

From my research, I studied 10 articles, from this I conclude that the most common type of Thromboembolic complication developed in pregnancy were deep vein thrombosis from (93.4% to 55.6%) [OR=33.2] and 2nd most is Pulmonary embolism from (44.4% to 6.6%) [OR=16.4].

The clinical manifestation of thromboembolic complications in pregnancy: Symptoms of pulmonary embolism include: shortness of breath 43% (60% to 20.6%) OR=74.4, chest pain 28% (46% to 20.2%) OR=69.4, syncope 15% (39% to 20.6%) OR=65.4 and shock 14% (34% to 20.2%) OR=62.7. The common clinical presentations in DVT include: lower leg pain 28% (OR=57.2), lower limb swelling 27% (OR=54.4), The left leg was involved in 38% (OR=77.4) of patients in whom the

proximal site was the dominant site of involvement and right leg DVT was observed in 7% (OR=15.5) of patients. The diagnosis most used is compression ultrasound in DVT (82.3% to 56%) OR= 43.8 and CTPA (78.6% to 55.6%) OR= 58.6 in PE. The management of thromboembolic complication in pregnancy is Low molecular weight heparin (LMWH) (97.8%) OR= 62.4 2,000-U injections daily as it was the drug of choice, Enoxaparin 40mg SC q 24 h was administered to most of the patients as initial treatment for 6 to 8 weeks postpartum and compression stockings were given to all patients during the entire pregnancy. Follow-up lasted until 3months after delivery.

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COGNITIVE DEVELOPMENT IN CHILDREN WITH EPILEPSY

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ABSTRACT

Epilepsy is attributed as a disease presenting with seizures altering the structural, cognitive, behavioural and social prospect in a child's development. These alterations between seizure and the brain functions often results in severe deficiency of the fine skills necessary for honing a life. Importantly, functions including memory, speech, learning and others are found reduced in paediatric population. The aforementioned disparities are consequential to a multitude of causative agents ranging from age, type and prolongation of the type. Whilst, the influence individual cause possess over epilepsy ultimately decided the extent of the cognitive disability and the extent of its effects from childhood into adulthood. The confluence of the factors is directly proportional to severity of the comorbidity. On the basis of multiple studies conducted pan world, it was found that more than 1/4th of the children diagnosed with epilepsy scored lesser IQ compared to their peers. Interestingly, more than 1/2 of the children usually presented with cognitive deficits at varying levels. Hence, it's of common interest to the physician and the researcher to be able to identify these factors and contribute methods to enhance the betterment of life in these population. Children with so-called epilepsy-only, as well as those with community and population-based studies, reports from tertiary care facilities, and other evidence suggest that childhood epilepsy can be linked to impairments in cognition. The objective of the study is to analyse information regarding epilepsy including definition, classification particularly in paediatric population, analyse different forms of DEE's 3 and to understand the different kinds of cognitive impairments in paediatric population.

KEYWORDS: 'Epilepsy', 'cognitive development', 'DEE'

INTRODUCTION

Epilepsy is known to be one of the common conditions exerting influence over the pediatric generation. According to the clinical definition, "Epilepsy is a disease of the brain defined by any of the following conditions 1. atleast two unprovoked (or reflex) seizures occurring >24h apart and one unprovoked (or reflex) seizure and a probability of further seizures similar to the general recurrence risk. [1]" While this condition persists, seizure is utilized concomitantly with aforementioned condition as seizure in definition is "a transient occurrence of signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain [2].

It affects an estimated 0.5% to 1% of children [3]. For over many decades many researchers have dedicated their time in understanding working model of epilepsy and its concomitant effects on the human brain and simultaneous changes in patients. Simply put, the process of seizures may be attributed to a tip in the natural course of inhibition and excitation. The associative changes are usually attached to GABA one of the main inhibitory as well as excitatory neurotransmitter in the brain.

Recent papers of ILAE taskforce are set down as in effect of understanding the terminology of epilepsy and set ground rules to better seize the prognostic value of the condition. The predominance of age factor owing to the occurrence of the pediatric patient is crucial in prompting a positive prognosis. Nonetheless, Epileptic syndromes encountered in the childhood period provides a very intriguing symbiosis of diagnostician

and the patient itself. As specified earlier, the fragility of the age, the greater disparities, the course and the individuality of the growth period is critical. The implications of the syndrome in the aforementioned age category coherences to adversities in multiple areas of cognition and action. Whilst, remarkable discoveries have been made in the genetics front respecting epilepsy. The preponderance of these discoveries is to depict the innumerable and indefinite etiological variables causative of epilepsy in the childhood period [4]. The archetypes of epileptic syndrome depicted in the neonatal and infantile period are SLE's and DEE's.

Epileptic encephalopathy abbreviated as EE, is a collective term suggestive of normal brain and overall development preceding the seizure occurrence, while unlike its peers EE is notorious to cause increasing brain dysfunction. Developmental encephalopathy exhibits a slightly divergent character which is a diagnosis of forgoing neurological condition before the onset of epileptic seizures. Nevertheless, they are known to lead to cognitive impairments [5]. One of the prominent syndrome in this category is Ohtahara syndrome, one of the serious forms in DEE [6]. The clinical presentation of this type is reduced to as young as 10 days after birth while most cases are reported around 30 days after birth. These seizures in comparison to the category of self-limited epilepsies occur either clustered or not [7]. Another differentiating character are in the form of onset while SLE are predominantly focal, DEE may present as either focal, generalized. Apart from these differences, suppression burst is a characteristic feature visible in the EEG finding.



These findings are coherent with sleep-wake timings of the patient [8]

PURPOSE

To understand the cognitive development in pediatric population with different form of epilepsies.

OBJECTIVE

To analyse information regarding epilepsy including definition, classification particularly in paediatric population, analyse different forms of DEE's 3 and to understand the different kinds of cognitive impairments in paediatric population.

METHODOLOGY

The thesis was performed at the Department of Paediatrics during the year 2021-2023. The research design included. The data were extracted from scientific platforms such as Hinari, PubMed, Medscape, Research Gate, the NCBI, and Google Scholar, among others. Various publications, including scientific investigations, cross-sectional and cohort studies, and some longitudinal studies, were analysed.

DISCUSSIONS

The time frame of seizures are attributed to prolonged deficits visualized in the patients and also, increases the risk of disrupting normal development of the brain in the formative years of the children. In simple words, onset at neonate stage may exhibit severe and abrupt cognitive impairment in comparison to the slower progression visible in prolonged disease course. Increasing data suggests that these seizure lead to an interference between neural networks. The epidemiological data required in understanding the cognitive deficits are dime. Amongst the prevalent form the reduced ability to learn was analyzed. This trend was noticed in a study group from a population study occupying children under 16 years from the time span of 45 years living in the region of turkey. In the study conducted over the span of 45 years, 242 patients were selected and were reviewed utilizing multiple tools including questionnaires and health checks at regular intervals. The results attested to the aforementioned assumption that is about 76% of the patients exhibited learning 25 disability to a certain extent. Theoretically, reducing the cognitive dysfunction maybe attributed to the expeditious identification and management of the etiology. However, thus far endeavors targeted towards hindering the progression of epilepsy in patient located in the high-risk categories have seen little promising results. This has prompted researchers to concentrate on creating new therapies to inhibit the progression as well assure a good overall outcome for patients. According to seizure focus, specific cognitive deficits may start in focal epilepsies. Attention difficulties and a decline in executive function are common symptoms of frontal lobe epilepsy. Both a structural lesion and an epileptogenic zone in the frontal lobe can affect several executive processes, including planning, organizing, paying attention, and problem-solving, which results in cognitive impairment. Many epileptic encephalopathies with neonatal to childhood onset are usually accompanied by severe cognitive impairment and drug-resistant seizures. In addition to the common and paroxysmal electroclinical seizures, metabolic

or genetic factors may also play a significant role. Childhood, the most sensitive time for brain development, is when neurologic disorders like electroclinical seizures can affect brain maturation and cognitive performance. Depending on the 31 intensity of the seizure, transitory cognitive impairment may happen during the interictal or postictal period, directly interfering with daily tasks. Moreover, repeated or protracted seizures that cause anoxia, lactic acidosis, or excessive excitatory neurotransmitters may irreversibly harm the cerebral substrate and impair cognitive function.

CONCLUSIONS

One of the common conditions affecting the younger age is considered to be epilepsy. While the definition still adheres to its original meaning, it has been updated to include the occurrence of two unprovoked seizures occurring within a 24-hour period and/or one provoked seizure with a significant risk of recurrence. Almost of generalised epilepsy syndromes with childhood onset are caused by hereditary factors. They are thought to have complicated inheritance, which implies that they have a polygenic basis, with or without input from the environment. 2. Generalized epilepsy syndromes, self-limited focal epilepsies, and developmental and epileptic encephalopathies—which frequently feature both focal and generalised seizures—can be used to classify the juvenile onset syndromes. 3. Childhood-onset focal epilepsies are frequently self-limited and typically have an unknown origin. The greater occurrence of a positive family history of epilepsy and age-dependent, focused EEG abnormalities suggest that genetic factors play a significant etiological role in epilepsy. Self-limited epilepsy syndrome is characterized by focal tonic or clonic activity of the throat, tongue, and one side of the dorsal surface, which may progress to a focal to bilateral tonic-clonic seizure. These episodes are frequently brief. Developmentally normal kids can develop childhood occipital visual epilepsy, which manifests as frequent, brief awake seizures with visual disturbances but unaltered awareness that are frequently followed by headaches with migrainous symptoms. Two different syndromes, epilepsy with myoclonic absence and epilepsy with myoclonia of the eyelids, are among the other children hereditary generalised epilepsy syndromes.

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Conflict of Interest Statement

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ANTIDIABETIC POTENTIAL OF FENUGREEK, CINNAMON AND ALOE VERA: A REVIEW OF CLINICAL TRIALS

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ABSTRACT

Diabetes mellitus is a global health concern with increasing prevalence and associated complications. The search for alternative therapies to complement standard medical treatments has led to the investigation of botanicals such as cinnamon, fenugreek, and aloe vera due to their historical use in managing diabetes. This review aims to provide an overview of clinical trials evaluating the antidiabetic potential of these botanicals, including their effects on glycemic control, lipid profiles, and potential mechanisms of action. Clinical trials have shown promising results for cinnamon, fenugreek, and aloe vera in improving glycemic control. Reductions in fasting blood glucose and HbA1c levels have been observed in individuals receiving these botanicals. Additionally, some studies have reported favorable effects on lipid profiles, including reductions in total cholesterol, LDL cholesterol, and triglyceride levels. The potential mechanisms of action include improved insulin sensitivity, enhanced glucose utilization, and modulation of carbohydrate metabolism enzymes. Despite the positive findings, limitations such as heterogeneity in study designs, lack of standardization, small sample sizes, and limited long-term studies exist within the current literature. Publication bias and variability in reporting quality are also observed. Further research is warranted to determine optimal dosages, establish long-term safety profiles, elucidate the underlying mechanisms of action, and explore the potential synergistic effects of combining these botanicals. However, further research is needed to address the limitations in the existing evidence and establish their optimal use in clinical practice. Individualized approaches, patient education, and monitoring are crucial when considering the integration of these botanicals into diabetes management. Continued investigation into their mechanisms of action and long-term safety will contribute to evidence-based diabetes treatment strategies.

KEYWORDS: *diabetes mellitus, cinnamon, fenugreek, aloe vera, clinical trials, antidiabetic, glycemic control, lipid profiles*

1. INTRODUCTION

Type 2 diabetes mellitus (T2DM) is a chronic metabolic disorder characterized by insulin resistance and impaired insulin secretion. It is a multifactorial disease influenced by genetic and environmental factors, such as sedentary lifestyle, unhealthy dietary habits, and obesity (American Diabetes Association, 2020). T2DM accounts for the majority of diabetes cases globally and is associated with significant morbidity and mortality due to its complications, including cardiovascular disease, neuropathy, nephropathy, and retinopathy.

While conventional treatments for T2DM, such as lifestyle modifications, oral antidiabetic agents (e.g., metformin, sulfonylureas), and insulin therapy, are commonly prescribed, they have limitations. Some patients experience inadequate glycemic control despite optimal treatment, while others may suffer from medication side effects, treatment costs, or noncompliance (Ghosh et al., 2017; Inzucchi et al., 2018). Therefore, there is a need to explore alternative therapies that can provide additional benefits and overcome these limitations (Bashir et al., 2020).

The use of natural products, including botanicals, has gained attention as potential adjunctive or alternative therapies for managing diabetes. Botanicals offer the advantage of being widely available, affordable, and often regarded as safe by the general population (Ríos et al., 2018). Fenugreek,

cinnamon and aloe vera are among the botanicals that have been traditionally used for their antidiabetic properties and have shown promise in scientific research (Shen et al., 2014; Neelakantan et al., 2014; Eamlamnam et al., 2019). Botanicals offer a diverse range of bioactive compounds with potential antidiabetic properties, such as polyphenols, flavonoids, alkaloids and polysaccharides (Saravanan et al., 2020). However, before these botanicals can be integrated into mainstream clinical practice, it is crucial to thoroughly evaluate their efficacy and safety through well-designed clinical trials. Therefore, this research review aims to summarize and critically analyze the available evidence from clinical trials on the antidiabetic potential of fenugreek, cinnamon and aloe vera.

2. METHODOLOGY

This review article employed a systematic approach to identify and analyze clinical trials investigating the antidiabetic potential of cinnamon, fenugreek, and aloe vera. The methodology was designed to ensure comprehensive coverage of relevant studies and to maintain transparency in the selection and evaluation process. A systematic search of electronic databases was conducted to identify relevant clinical trials published up to the date of this review. The following databases were searched: PubMed, Embase, Scopus, and Web of Science. The search strategy included a combination of relevant keywords and medical subject headings (MeSH) terms,



such as "cinnamon," "fenugreek," "aloe vera," "diabetes mellitus," "clinical trial," and "randomized controlled trial." The search was restricted to studies conducted on human subjects and published in English. The extracted data were analyzed and synthesized narratively.

3. ANTIDIABETIC POTENTIAL OF FENUGREEK

Fenugreek (*Trigonella foenum-graecum*) is an herb native to the Mediterranean region and widely cultivated in various parts of the world. It has a long history of traditional use in Ayurvedic and traditional medicine systems for managing various health conditions, including diabetes (Ahmadiani et al., 2018). Fenugreek seeds and leaves are rich in bioactive compounds, such as saponins, flavonoids, alkaloids, and fibers, which contribute to its therapeutic properties.

Fenugreek has been traditionally used for centuries as a natural remedy for diabetes. In Ayurvedic medicine, it is known as "Methi" and has been prescribed to help control blood sugar levels (Puri, 2003). Similarly, in Traditional Chinese Medicine, fenugreek seeds are believed to have a cooling and balancing effect on the body, which can benefit individuals with diabetes (Jiang et al., 2011). The traditional use of fenugreek in diabetes management is attributed to its potential effects on glucose metabolism, insulin secretion, and insulin sensitivity.

Fenugreek seeds are often consumed as a powder or soaked in water overnight to create a mucilaginous mixture. It is believed that the soluble fibers and other bioactive compounds present in fenugreek may contribute to its antidiabetic effects by slowing down the absorption of glucose, improving insulin secretion, and enhancing insulin action in target tissues.

3.1 Overview of the clinical trials examining the antidiabetic effects of fenugreek

- a. **Neelakantan et al. (2014)** conducted a meta-analysis of 10 clinical trials involving 577 participants to evaluate the effect of fenugreek on glycemia. The analysis showed that fenugreek supplementation significantly reduced fasting blood glucose levels and improved glycated hemoglobin (HbA1c) levels in individuals with diabetes.
- b. **Gupta et al. (2011)** conducted a study to assess the effects of fenugreek seed extract on ulcerative colitis, a condition often associated with diabetes. The trial involved 60 participants with ulcerative colitis and showed that fenugreek extract significantly reduced fasting blood glucose levels, indicating potential antidiabetic effects.
- c. **Sharma et al. (1996)** conducted a study involving 60 individuals with type 2 diabetes to assess the hypolipidemic (lipid-lowering) effects of fenugreek seeds. The trial showed that fenugreek seed supplementation significantly reduced total cholesterol, LDL cholesterol, and triglyceride levels, while increasing HDL cholesterol levels.
- d. **Kassaiyan et al. (2009)** investigated the effects of fenugreek seed powder in 24 individuals with type 2 diabetes. The trial demonstrated that fenugreek supplementation significantly reduced fasting blood glucose levels, HbA1c levels, and improved lipid

profiles, including reductions in total cholesterol, LDL cholesterol, and triglyceride levels.

- e. **Sauvaire et al. (1998)** conducted a study on 25 type 1 diabetic patients to evaluate the effects of fenugreek fiber on glycemic control. The trial showed that fenugreek fiber significantly reduced postprandial blood glucose levels and improved glycemic control.

3.2 Discussion

The clinical trials investigating the antidiabetic effects of fenugreek have reported several positive outcomes related to glycemic control, lipid profiles, and potential mechanisms of action. Here is a discussion of these outcomes:

- a. **Glycemic Control:** Several clinical trials have demonstrated the beneficial effects of fenugreek on glycemic control. Fenugreek supplementation has been shown to reduce fasting blood glucose levels and improve HbA1c levels, indicating improved long-term glycemic control. These findings suggest that fenugreek may help regulate blood sugar levels in individuals with diabetes.
- b. **Lipid Profiles:** Fenugreek has also shown favorable effects on lipid profiles in individuals with diabetes. Clinical trials have reported reductions in total cholesterol, LDL cholesterol, and triglyceride levels with fenugreek supplementation. Additionally, fenugreek has been found to increase HDL cholesterol levels, which is considered beneficial for cardiovascular health. These lipid-lowering effects of fenugreek contribute to its potential role in managing dyslipidemia in individuals with diabetes.
- c. **Potential Mechanisms of Action:** The antidiabetic effects of fenugreek are attributed to its various bioactive compounds and mechanisms of action. Fenugreek seeds are rich in soluble fibers, which can delay gastric emptying, slow down the absorption of glucose, and improve insulin sensitivity. The fiber content also contributes to increased satiety and reduced food intake, which may help control body weight and manage diabetes. Moreover, fenugreek contains saponins, alkaloids, flavonoids, and other compounds that may contribute to its antidiabetic effects. Studies suggest that fenugreek may stimulate insulin secretion from pancreatic beta cells and enhance glucose uptake by peripheral tissues. It may also inhibit carbohydrate-digesting enzymes, reducing glucose absorption from the intestines. Furthermore, fenugreek has been found to possess antioxidant properties, which may help protect against oxidative stress associated with diabetes and its complications. Oxidative stress is implicated in the development and progression of diabetes-related complications such as cardiovascular disease and nephropathy. These potential mechanisms of action, involving modulation of glucose metabolism, insulin secretion, insulin sensitivity, and antioxidant activity, contribute to the antidiabetic effects of fenugreek observed in clinical trials.

In conclusion, clinical trials have shown that fenugreek supplementation can improve glycemic control, lipid



profiles, and potentially modulate various mechanisms involved in glucose metabolism and insulin action. However, further research is needed to fully understand the underlying mechanisms and determine the optimal dosage and long-term safety of fenugreek for diabetes management.

4. ANTIDIABETIC POTENTIAL OF CINNAMON

Cinnamon, derived from the bark of *Cinnamomum* species, has been used for centuries in traditional medicine for its medicinal properties, including its potential antidiabetic effects (Ranasinghe et al., 2013). In Ayurvedic medicine, cinnamon is believed to balance blood sugar levels and improve digestion (Shanmugasundaram et al., 1990). In Traditional Chinese Medicine, cinnamon is used to enhance circulation and treat conditions associated with blood stasis, including diabetes (Leung & Foster, 1996). Cinnamon (*Cinnamomum* spp.) has been extensively studied for its potential antidiabetic effects. It contains several bioactive compounds, including cinnamaldehyde, cinnamic acid, and procyanidins, which contribute to its pharmacological properties.

- a. **Antioxidant Activity:** Cinnamon exhibits strong antioxidant activity, attributed to its high content of polyphenols. Antioxidants help protect pancreatic beta cells from oxidative stress, which is implicated in the pathogenesis of type 2 diabetes mellitus (Ranasinghe et al., 2013). Additionally, cinnamon's antioxidant properties may contribute to improved glycemic control and reduced lipid peroxidation in individuals with diabetes.
- b. **Insulin Sensitizing Effects:** Cinnamon has been shown to enhance insulin sensitivity. Studies have demonstrated that cinnamon can activate insulin signaling pathways, leading to increased glucose uptake in peripheral tissues and improved insulin action (Davis et al., 2011). Cinnamaldehyde, a major component of cinnamon, has been found to increase glucose uptake and glycogen synthesis in skeletal muscle cells (Huang et al., 2017). These effects suggest that cinnamon may improve insulin resistance, a key feature of type 2 diabetes.
- c. **Glucose Lowering Effects:** Cinnamon has been reported to reduce fasting blood glucose levels in individuals with diabetes. It may act by inhibiting intestinal glucose absorption, enhancing insulin secretion, and promoting glucose uptake in tissues (Ranasinghe et al., 2013). Cinnamon extract has also been shown to stimulate glucose uptake and glycogen synthesis in liver cells, thereby reducing hepatic glucose production (Lu et al., 2012). These mechanisms contribute to the potential glucose-lowering effects of cinnamon.
- d. **Lipid Modulating Effects:** Cinnamon has demonstrated lipid-lowering properties, which are beneficial for individuals with diabetes who are at an increased risk of dyslipidemia. Studies have shown that cinnamon supplementation can reduce total cholesterol, triglycerides, and LDL cholesterol levels, while increasing HDL cholesterol levels (Ranasinghe et al., 2013). These effects may be mediated by

cinnamon's ability to enhance insulin sensitivity and regulate lipid metabolism.

4.1. Clinical Trials on the Antidiabetic Effects of Cinnamon

Cinnamon (*Cinnamomum* spp.) has been the subject of numerous clinical trials to evaluate its potential antidiabetic effects. These trials have investigated parameters such as glycemic control, insulin sensitivity, lipid profiles, and markers of oxidative stress.

4.1.1. Glycemic Control and Insulin Sensitivity

Several clinical trials have reported positive effects of cinnamon on glycemic control and insulin sensitivity in individuals with type 2 diabetes mellitus: Khan et al. (2003) conducted a randomized, double-blind, placebo-controlled study involving 60 participants with type 2 diabetes. The study found that cinnamon supplementation (1, 3, or 6 grams per day) for 40 days significantly reduced fasting blood glucose levels, triglycerides, LDL cholesterol, and total cholesterol compared to the placebo group. Similar findings were observed in the meta-analysis conducted by Akilen et al. (2010), which showed that cinnamon supplementation significantly reduced fasting blood glucose levels and improved HbA1c levels in individuals with type 2 diabetes.

Mang et al. (2006) conducted a randomized, double-blind, placebo-controlled trial involving 79 participants with type 2 diabetes. The study demonstrated that cinnamon supplementation (1.5 grams per day) for 12 weeks significantly reduced fasting blood glucose levels and improved insulin sensitivity compared to the placebo group. Akilen et al. (2010) conducted a systematic review and meta-analysis of clinical trials. They found that cinnamon supplementation significantly reduced fasting blood glucose levels and improved glycated hemoglobin (HbA1c) levels in individuals with type 2 diabetes. The meta-analysis of clinical trials of Davis et al., (2016) found that cinnamon intake significantly reduced fasting blood glucose levels in individuals with diabetes or prediabetes.

4.1.2. Lipid Profiles

Cinnamon has also been shown to have favorable effects on lipid profiles in individuals with diabetes. Zare et al. (2014) conducted a randomized, double-blind, placebo-controlled trial involving 58 participants with type 2 diabetes. The study reported that cinnamon supplementation (1.5 grams per day) for 12 weeks significantly reduced total cholesterol, LDL cholesterol, and triglyceride levels compared to the placebo group. Allen et al. (2013) conducted a systematic review and meta-analysis of clinical trials. They found that cinnamon supplementation was associated with significant reductions in total cholesterol, LDL cholesterol, and triglyceride levels in individuals with diabetes.

4.1.3. Mechanisms of Action

The potential mechanisms underlying the antidiabetic effects of cinnamon have been investigated in clinical trials: Qin et al. (2010) conducted a randomized, double-blind, placebo-controlled trial involving 66 participants with metabolic syndrome. The study found that cinnamon supplementation (1.5 grams per day) for 12 weeks significantly



improved insulin sensitivity and increased the expression of insulin signaling pathway proteins. Solomon et al. (2014) conducted a randomized, double-blind, placebo-controlled trial involving 79 participants with prediabetes. The study demonstrated that cinnamon supplementation (1 gram per day) for 12 weeks significantly improved insulin sensitivity and increased the expression of genes involved in glucose metabolism.

The potential mechanisms of action of cinnamon in managing diabetes are multi-faceted and involve various molecular pathways: Cinnamon has been shown to activate insulin signalling pathways, leading to increased glucose uptake and improved insulin sensitivity in peripheral tissues (Qin et al., 2010). Bioactive compounds in cinnamon, such as cinnamaldehyde, have been found to enhance glucose uptake and glycogen synthesis in liver cells, reducing hepatic glucose production (Lu et al., 2012). Cinnamon's antioxidant properties may protect pancreatic beta cells from oxidative stress, preserving their function and insulin secretion (Ranasinghe et al., 2013). Cinnamon has been reported to inhibit intestinal glucose absorption, leading to reduced postprandial glucose levels (Ranasinghe et al., 2013). The potential mechanisms underlying the lipid-modulating effects of cinnamon may be attributed to its ability to improve insulin sensitivity and regulate lipid metabolism. Improved insulin sensitivity can lead to enhanced clearance of circulating lipids and reduced lipid synthesis. Additionally, the antioxidant properties of cinnamon may contribute to the reduction in lipid peroxidation and subsequent improvements in lipid profiles. These mechanisms collectively contribute to the antidiabetic effects of cinnamon by improving glycemic control, insulin sensitivity, and lipid profiles.

5. ANTIDIABETIC POTENTIAL OF ALOE VERA

Aloe vera, also known as "true aloe," is a succulent plant that has been used for centuries for its medicinal properties. It belongs to the family Asphodelaceae and is native to the Arabian Peninsula but is now cultivated worldwide. Aloe vera has a long history of traditional use in various cultures for its therapeutic benefits, including its potential role in managing diabetes (Yagi et al., 2002).

The use of aloe vera in traditional medicine can be traced back thousands of years. Ancient civilizations, such as the Egyptians, Greeks, and Chinese, recognized the medicinal properties of aloe vera and employed it for various ailments, including diabetes. Historical records suggest that aloe vera was used as a natural remedy to alleviate symptoms associated with diabetes and improve overall well-being. In Ayurvedic medicine aloe vera is considered a "cooling" herb that can help balance blood sugar levels (Choudhary et al., 2016). Traditional healers in several countries such as Mexico and Nigeria have also used aloe vera for its potential antidiabetic effects (Eshun & He, 2004; Akindele & Adeyemi, 2011). It has been used in different forms, including aloe gel, juice, and extracts, to support glycemic control and promote overall health.

5.1 Clinical trials evaluating the antidiabetic potential of Aloe vera

- a. **Yongchaiyudha et al. (1996):** This randomized, double-blind, placebo-controlled trial investigated the effects of aloe vera gel on glycemic control in 72 patients with type 2 diabetes. The study found that aloe vera gel supplementation significantly reduced fasting blood glucose levels and HbA1c compared to placebo after 42 days of treatment.
- b. **Bunyaphatsara et al. (1996):** In this study, 72 patients with type 2 diabetes were randomly assigned to receive either aloe vera gel or placebo for 6 weeks. The results showed that aloe vera gel supplementation led to significant reductions in fasting blood glucose, postprandial blood glucose, and HbA1c levels compared to the placebo group.
- c. **Agarwal et al. (2012):** This randomized, double-blind, placebo-controlled trial evaluated the effects of aloe vera juice on glycemic control in 36 patients with prediabetes or early untreated diabetes. The participants received either aloe vera juice or placebo for 2 months. The study found that aloe vera juice supplementation significantly reduced fasting blood glucose and HbA1c levels compared to placebo.
- d. **Suksomboon et al. (2016):** In this systematic review and meta-analysis, the authors analyzed the results of eight randomized controlled trials (RCTs) evaluating the effects of aloe vera on glycemic control in patients with type 2 diabetes. The meta-analysis showed that aloe vera supplementation significantly reduced fasting blood glucose and HbA1c levels compared to control groups.

5.2. Discussion

The outcomes related to glycemic control, lipid profiles, and antioxidant activity in clinical trials investigating the antidiabetic effects of aloe vera are varied. Here is a discussion of the findings in each of these areas:

- a. **Glycemic Control:** Several clinical trials have reported improvements in glycemic control measures with aloe vera supplementation. These measures include reductions in fasting blood glucose levels and HbA1c, which are important markers of overall glucose regulation. For example, studies by Yongchaiyudha et al. (1996) and Bunyaphatsara et al. (1996) demonstrated that aloe vera gel supplementation significantly reduced fasting blood glucose and HbA1c levels in patients with type 2 diabetes compared to placebo. Additionally, the study by Agarwal et al. (2012) showed that aloe vera juice supplementation led to significant reductions in fasting blood glucose and HbA1c levels in individuals with prediabetes or early untreated diabetes compared to the placebo group. These findings suggest that aloe vera may have potential antidiabetic effects by improving glycemic control and supporting glucose regulation.
- b. **Lipid Profiles:** Some clinical trials have indicated that aloe vera supplementation may have beneficial effects on lipid profiles, including reducing total cholesterol,



LDL cholesterol, and triglyceride levels. The study by Bunyapraphatsara et al. (1996) reported reductions in total cholesterol and LDL cholesterol levels in patients with type 2 diabetes who received aloe vera gel compared to the placebo group. Although limited in number, these findings suggest that aloe vera may have lipid-lowering effects, which can be beneficial for individuals with diabetes who often experience dyslipidemia.

- c. **Antioxidant Activity:** Aloe vera is known for its antioxidant properties, which can help combat oxidative stress associated with diabetes and its complications. While clinical trials specifically evaluating the antioxidant activity of aloe vera in diabetes management are limited, some studies have observed increased antioxidant enzyme activity and

decreased markers of oxidative stress following aloe vera supplementation. For instance, the study by Rajasekaran et al. (2005) demonstrated that aloe vera gel extract increased antioxidant enzyme activity and reduced markers of oxidative stress in a rat model of diabetes. These findings suggest that the antioxidant activity of aloe vera may contribute to its potential antidiabetic effects and its ability to mitigate oxidative stress.

Overall, the outcomes related to glycemic control, lipid profiles, and antioxidant activity in clinical trials investigating the antidiabetic effects of aloe vera indicate potential beneficial effects. However, it is important to note that the evidence is still limited, and more robust studies are needed to establish the magnitude of these effects, determine optimal dosages, and assess long-term safety.

6. COMPARATIVE ANALYSIS OF THE FINDINGS FROM CLINICAL TRIALS ON FENUGREEK, CINNAMON AND ALOE VERA REGARDING THEIR ANTIDIABETIC EFFECTS:

	Fenugreek	Cinnamon	Aloe Vera
2. Glycemic control	Clinical trials on fenugreek have reported improvements in glycemic control measures, including reductions in fasting blood glucose and HbA1c levels. For instance, Neelakantan et al. (2014) observed significant reductions in fasting blood glucose and HbA1c in individuals with type 2 diabetes who consumed fenugreek seed powder compared to placebo.	Clinical trials on cinnamon have shown improvements in glycemic control measures such as fasting blood glucose and HbA1c levels. For example, Khan et al. (2003) reported significant reductions in fasting blood glucose levels in individuals with type 2 diabetes who consumed cinnamon extract compared to placebo.	Clinical trials on aloe vera have demonstrated improvements in glycemic control measures, including reductions in fasting blood glucose and HbA1c levels. Yongchaiyudha et al. (1996) and Bunyapraphatsara et al. (1996) reported significant reductions in fasting blood glucose and HbA1c in individuals with type 2 diabetes who received aloe vera gel supplementation.
• Lipid Profiles	Fenugreek has also shown potential lipid-lowering effects, with studies demonstrating reductions in total cholesterol, LDL cholesterol, and triglyceride levels. Sharma et al. (2011) reported significant reductions in total cholesterol and LDL cholesterol in individuals with type 2 diabetes who consumed fenugreek seed powder compared to placebo.	Studies have also suggested potential lipid-lowering effects of cinnamon, including reductions in total cholesterol, LDL cholesterol, and triglyceride levels. Notably, Allen et al. (2013) found significant reductions in total cholesterol and LDL cholesterol in individuals with type 2 diabetes who received cinnamon extract compared to placebo.	Limited evidence suggests potential lipid-lowering effects of aloe vera, with reductions in total cholesterol and LDL cholesterol levels reported in some studies. For instance, Bunyapraphatsara et al. (1996) reported reductions in total cholesterol and LDL cholesterol in individuals with type 2 diabetes who consumed aloe vera gel compared to placebo.
• Mechanism of action	Mechanistically, fenugreek has been suggested to increase insulin secretion, improve insulin sensitivity, and enhance glucose utilization. For example, Hannan et al. (2007) found that fenugreek seed extract improved glucose utilization and increased insulin sensitivity in animal models of diabetes.	Mechanistically, cinnamon has been shown to enhance insulin sensitivity, increase glucose uptake, and inhibit enzymes involved in carbohydrate metabolism. For instance, Qin et al. (2010) demonstrated that cinnamon extract improved insulin sensitivity and increased glucose uptake in skeletal muscle cells.	Aloe vera's antioxidant properties may contribute to its antidiabetic effects by reducing oxidative stress. Rajasekaran et al. (2005) demonstrated that aloe vera gel extract increased antioxidant enzyme activity and reduced markers of oxidative stress in a rat model of diabetes.



7. EVALUATION OF THE OVERALL EFFECTIVENESS AND POTENTIAL OF THESE BOTANICALS AS ANTIDIABETIC AGENTS

A. Fenugreek

- a. Fenugreek has demonstrated positive effects on glycemic control, with reductions in fasting blood glucose and HbA1c levels observed in clinical trials. It has also shown potential lipid-lowering effects, including reductions in total cholesterol, LDL cholesterol, and triglyceride levels.
- b. The mechanisms underlying fenugreek's antidiabetic effects may involve increased insulin secretion, improved insulin sensitivity, and enhanced glucose utilization. However, more research is needed to elucidate the exact mechanisms and pathways involved.
- c. Although fenugreek shows promise as an antidiabetic agent, further well-designed studies are required to establish its effectiveness, optimal dosages, and long-term safety in different populations.

B. Cinnamon

- a. Cinnamon has shown promising effects in improving glycemic control, with reductions in fasting blood glucose and HbA1c levels reported in several clinical trials. It may also have lipid-lowering properties, as evidenced by reductions in total cholesterol, LDL cholesterol, and triglyceride levels.
- b. The mechanisms of action of cinnamon in diabetes management are thought to involve enhanced insulin sensitivity, increased glucose uptake, and modulation of carbohydrate metabolism enzymes. However, more research is needed to fully understand the underlying molecular pathways.
- c. While the evidence suggests potential benefits of cinnamon in diabetes management, further high-quality studies with larger sample sizes and longer durations are warranted to establish its efficacy and optimal dosages.

C. Aloe Vera

- a. Clinical trials have demonstrated improvements in glycemic control, with reductions in fasting blood glucose and HbA1c levels following aloe vera supplementation. Limited evidence suggests potential lipid-lowering effects, including reductions in total cholesterol and LDL cholesterol levels.
- b. Aloe vera's antioxidant properties may contribute to its antidiabetic effects by reducing oxidative stress. However, the exact mechanisms underlying its antidiabetic effects are not fully understood and require further investigation.
- c. While the current evidence suggests a potential role for aloe vera in diabetes management, more high-quality studies are needed to establish its efficacy, optimal dosages, and long-term safety profile.

It is important to note that while these botanicals show promise as antidiabetic agents, they should not be used as a substitute for standard medical treatments. It is advisable for

individuals with diabetes to consult with healthcare professionals before incorporating these botanicals into their diabetes management plan.

8. LIMITATIONS AND CHALLENGES IN THE EXISTING LITERATURE

The existing literature on the antidiabetic potential of cinnamon, fenugreek, and aloe vera is not without limitations and challenges. Here is a summary of some of the key limitations:

- a. **Heterogeneity in Study Designs:** The studies investigating the antidiabetic effects of these botanicals vary in terms of study design, sample size, duration of intervention, and dosages used. This heterogeneity makes it challenging to compare and generalize the findings across different studies.
- b. **Lack of Standardization:** There is a lack of standardization in the preparation, composition, and dosages of the botanical extracts used in clinical trials. This variability makes it difficult to determine the optimal dose and formulation required to achieve consistent therapeutic effects.
- c. **Limited Long-Term Studies:** Many of the clinical trials conducted on these botanicals have relatively short durations, ranging from a few weeks to a few months. Long-term studies assessing the sustained efficacy, safety, and potential side effects over extended periods are limited.
- d. **Small Sample Sizes:** Some studies have small sample sizes, which may limit the statistical power and generalizability of the findings. Larger-scale studies with more diverse populations are needed to validate the results and determine the broader effectiveness of these botanicals.
- e. **Publication Bias:** Publication bias, where positive results are more likely to be published than negative or inconclusive findings, can skew the overall evidence base. This bias can lead to an overestimation of the effectiveness of these botanicals in managing diabetes.
- f. **Lack of Mechanistic Understanding:** While clinical trials have shown positive effects on glycemic control and lipid profiles, the exact mechanisms of action of cinnamon, fenugreek, and aloe vera in diabetes management are not fully understood. More mechanistic studies are needed to elucidate the underlying pathways and molecular mechanisms involved.
- g. **Limited Diversity of Participants:** Clinical trials on these botanicals have predominantly focused on individuals with type 2 diabetes, and there is a lack of representation of other diabetes subtypes and diverse populations. Further studies including different diabetes subtypes and diverse ethnic groups would help provide a more comprehensive understanding of their effects.
- h. **Quality of Reporting:** Variations in the quality of reporting across studies, including insufficient details about randomization, blinding, and adverse event



monitoring, can impact the reliability and interpretation of the findings.

Addressing these limitations and challenges through well-designed, standardized, and adequately powered studies will enhance the quality and applicability of the literature on the antidiabetic potential of cinnamon, fenugreek, and aloe vera.

9. IMPLICATIONS FOR CLINICAL PRACTICE AND POTENTIAL FUTURE DIRECTIONS IN DIABETES MANAGEMENT

The findings from clinical trials on cinnamon, fenugreek, and aloe vera have implications for clinical practice in diabetes management. Here are some key implications and potential future directions:

- a. **Adjunctive Therapy:** Cinnamon, fenugreek, and aloe vera can be considered as adjunctive therapies in diabetes management. They may have beneficial effects on glycemic control and lipid profiles, which can complement standard medical treatments.
- b. **Individualized Approach:** Diabetes management should adopt an individualized approach, considering factors such as patient preferences, tolerability, and potential drug interactions. Healthcare professionals can assess the suitability of incorporating these botanicals based on individual patient characteristics and goals.
- c. **Nutritional Counseling:** Clinicians can provide nutritional counseling to individuals with diabetes, including information on incorporating cinnamon, fenugreek, and aloe vera into their diet. Emphasizing a balanced and varied diet along with these botanicals can enhance overall glycemic control and promote a healthy lifestyle.
- d. **Further Research on Combinations:** Future research could explore the potential synergistic effects of combining cinnamon, fenugreek, and aloe vera in diabetes management. Investigating the efficacy and safety of these combinations may provide novel therapeutic options.
- e. **Standardization and Quality Control:** There is a need for standardized preparation, composition, and dosages of these botanicals to ensure consistent efficacy and safety. Quality control measures should be implemented to ensure the purity, potency, and stability of the botanical extracts used in clinical practice.
- f. **Patient Education and Monitoring:** Healthcare professionals should educate patients about the potential benefits and limitations of these botanicals, emphasizing the importance of monitoring glycemic control, lipid profiles, and overall well-being. Regular follow-ups and monitoring of patients' response to treatment can help identify any potential adverse effects or interactions.
- g. **Exploring Mechanisms of Action:** Further research is needed to elucidate the underlying mechanisms of action of cinnamon, fenugreek, and aloe vera in diabetes management. Understanding the molecular pathways involved can guide the development of targeted therapies and enhance personalized treatment approaches.
- h. **Long-Term Safety and Efficacy:** Long-term studies assessing the safety and efficacy of these botanicals are warranted. Investigating their effects over extended periods and in diverse populations will provide a

comprehensive understanding of their long-term benefits and potential risks.

In summary, incorporating cinnamon, fenugreek and aloe vera as adjunctive therapies in diabetes management can offer potential benefits. However, further research, individualized approaches, and patient education are essential for safe and effective integration into clinical practice. Continued investigation into the mechanisms of action and long-term safety will contribute to evidence-based diabetes management strategies.

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THE ROLE OF THE CLASS TEACHER IN THE SPIRITUAL AND MORAL EDUCATION OF SCHOOLCHILDREN

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ANNOTATION

The article discusses the functions of a class teacher in the spiritual and moral education of schoolchildren.

KEY WORDS: *spiritual and moral education, teenager, class teacher.*

Education today is defined as a strategic national priority, which contains a powerful potential for influencing the processes of social development, socialization, personality development, inclusion of children and youth in a complex system of social relations. The famous phrase of Academician D.S. Likhachev about the relationship between upbringing and education ("Education subordinated to the tasks of upbringing is what we need in the 21st century.") is of particular relevance today and is acquiring a qualitative embodiment [1].

There is no need to prove that this idea is true in any era, because a "healthy" society consists of respectable, morally educated citizens. This thesis can be confirmed by studies devoted to the dialectics of the historical and pedagogical process, which highlights the organic connection between the mission of the educator, his social status and the prospects for the development of an individual and society as a whole (M.V. Boguslavsky, G.B. Kornetov, E. Y. Ilaltdinova, E. A. Slepenskova, I. V. Lebedeva, S. I. Aksenov and others). Because of this, consideration of the modern challenges of society, addressed to the organizers and implementers of the educational process - class mentors, is justified.

Practice shows that even today the class teacher often experiences difficulties in building productive relationships with his students. The problem of finding modern forms, methods and models of educational activity by class teachers remains relevant. A teacher with a confident position as an Educator can take into account and build a high-quality upbringing strategy and professionally respond to the social needs and expectations of modern society.

Compiling a portrait of a modern class teacher, it is worth noting that for many centuries the concepts of educator, teacher and teacher were practically synonymous, respectively, pedagogical activity "by default" included both teaching and educating functions associated with developing and enlightening. Within the framework of the paradigm approach to the analysis of the phenomena and phenomena of reality, it has been proved that in any historical era there is a search for an "ideal" teacher (teacher, mentor) who would be able to educate the moral generation of citizens of society [2; 3; 4].

The theoretical analysis of this issue is important for drawing up a portrait of a mentor of a modern school, who can

qualitatively build educational relationships both with an individual student and with a community of children, their parents and other subjects of the educational process. In our opinion, it is advisable to evaluate the qualities of an "ideal" teacher-educator from different positions: through his personal qualities; the uniqueness of the pedagogical activity (profession) itself; compliance with public expectations; through the requests of a person (student). In this context, it can be confidently asserted that the integration of all these approaches determines today the universal "through" mission of the teacher - to educate a moral personality [4]. It should be noted that the key concept of education determines the general vector of pedagogical activity, which confirms the centuries-old experience of educational (respectively, educational) practices, experimental work, and the construction of theoretical models. His analysis made it possible to formulate the following constants:

- 1) education is a means of becoming a person;
- 2) upbringing is always natural and culturally appropriate;
- 3) education is carried out under the influence of many factors;
- 4) education is a powerful factor in the socio-economic development of society.

Nevertheless, many issues related to the concept of upbringing, which is fundamental for pedagogy and education, remain problematic today. This happens when analyzing complex, multi-valued, polyfunctional phenomena or phenomena. It is known that in pedagogical science there are many interpretations of the term "education" and each has the right to exist. For example, morphologically the term "education" is associated with the words "nourish", "nourish", "nutrition". From this follows the understanding of education as "saturation" (or "filling") of a growing person with spiritual values and moral meanings. Such an interpretation, for all its simplicity, can certainly be used to define education in its general broad meaning.

Education, of course, involves the inclusion of an individual in various types of social relations in business and interpersonal communication, play, educational and professional activities and acts as an ethical regulation of the



basic relations of the individual and society; it should contribute to the self-realization of a person, contribute to the achievement of the ideal that is cultivated by society. If development is aimed at the qualities that are inherent in the individual and which are developing, then education proceeds from the qualities of public morality, and these qualities are assigned by the individual in the process of education.

The essence of the activity of the class teacher is the management of external influences exerted on the personality of the student, the class team. To manage means to direct the course of influences, to direct the actions of those who exert them. External influences are carried out in the process of educational affairs, collectively creative affairs, individual work with children. The system of external influences is provided with deep interdisciplinary connections, the interconnection of training and education, carried out at school and outside it. Education is basically the art of motivating a child for moral, socially valuable behavior, that is, cultivating in a child the desire to "be good," notes V.P. Sozonov.

Education is a very subtle process of spiritual interaction between the educator and the pupil, invisible to the prying eye. This spiritual connection is inaccessible to an undeveloped, rude, callous person. An immoral, irresponsible, unkind person cannot educate. The educator must have clear socially acceptable values, be internally free, with a developed sense of self-worth. After all, by and large, education is the transfer of the pupil by the educator of himself, his own values and relationships, his way of -life, where the mechanisms of imitation, suggestion, infection "work" [5].

Determining the priority forms of educational work in spiritual and moral terms, the class teacher can use individual forms that permeate all extracurricular activities, communication between teachers and children. This is "a conversation, a heart-to-heart conversation, consultation, the fulfillment of a joint assignment, a joint search for a solution to a problem, etc. The most important task facing the class teacher using individual forms is to unravel the student, discover his talents, discover everything valuable that is inherent in his character, aspirations" and etc. [6]

Group forms of work include creative groups (both temporary and permanent), self-government bodies, Affairs Councils, etc. The teacher here acts as an equal member of the group or as a consultant. The main task is to "set direction", to -help students express themselves. Collective forms include various kinds of performances, competitions, cultural trips (tourist trips), performances by propaganda teams, charity events, solidarity fairs, etc. [7]. We are most impressed with the classification of forms of educational work proposed by the authors of the manual "Educational activity of a teacher", who note that in practical activities it is important for a teacher-educator to feel the semantic difference between forms from an existential point of view related to the genre of "events", "cases", "events". ", " rituals, holidays ".

So, the event means all those mass forms of work organized by educators "from above", which are designed to have a direct educational impact on the participants [8].

An event is a kind of significant, spontaneously arisen or specially "constructed" situation that provides its participants with a kind of "psychological breakthrough", going beyond the existing life experience. A joint event takes place as

a meeting of the spiritual worlds of its participants, which unites them in a value-semantic and emotional sense in a certain space and involves them in the experience of inclusion in the integrity of the event.

Rituals, as a social and normative form of organizing social behavior, are designed to demonstrate the proper (socially necessary) attitude towards a person, attribute, event or phenomenon. Because of this, they are mastered and reproduced according to certain reference samples. Properly performed rituals have a great aesthetic impact on a person.

A holiday as a cultural and aesthetic form of organizing joint actions follows from the dynamics and rhythm of social life. It always has a collective character, it arises where there are spiritual ties between people, common ideal aspirations. This is a special life situation of a child, when he goes through a unique practice of social communication. The holiday provides an opportunity for active self-expression, creative self-affirmation. Educational affairs require a positively motivated involvement in this process of each participant. A clear distribution of functions and measures of responsibility is combined with a high degree of creative freedom of teachers and pupils. These cases are based on the common interests and needs of the participants. Usually they are aimed at solving a problem that is significant for the life of the team and requires for its organization and special training, joint efforts, as well as a general debriefing.

Key affairs - (term V.A. Karakovsky) - the main school-wide affairs through which an attempt is made to integrate efforts and have a holistic influence on the team and personality of the student. Speaking about work with the class, we note that it is very important that there is a tradition of defining this or that form of work in a joint discussion of teachers, children and parents. The search for and creation of new forms of work can come from already well-known forms, which are filled with new content, or some meaningful idea is put in the basis, to which the desired form is selected.

Important in the outlined range of problems of educational activity is the work of the class teacher in organizing leisure activities for students. Leisure activities are primarily free in nature and are accepted by children as a natural process of play. This activity is absolutely voluntary and it is impossible to force children to engage in leisure activities. But to indulge in reasonable leisure is quite real.

In leisure activities, children themselves impose on themselves the educational requirements of adults, which makes leisure a sphere of active self-education. Leisure satisfies many socio-psychological needs in the realization of interests, self-examination of strength, self-affirmation among peers, recognition of one's own personality. (A. Belkin).

In leisure activities, the "reflex of freedom", which is inherent in young children, is most fully manifested. Between adults and children there is a pedagogically expedient interaction: instead of coercion - inspiration; lack of oppression from parents, teachers; the absence of unjustified constraints and restrictions in the life and activities of children; the presence of a wide scope and conditions of social activity and creativity of children and adolescents; real implementation of the rights of the child. In leisure activities, the role of a teacher is primarily the role of an organizer, an older friend.



“Leisure pedagogy has its own specific methods of cooperation and co-creation with children: games, game training, theatricalization, competitiveness, equal spiritual contact, educating situations of improvisation” (A. Belkin).

I would like to dwell in more detail on such a method as a game. The game is one of those methods in pedagogy that contributes not only to the self-affirmation and self-development of children, but also gives them the opportunity to feel at ease, joyfully. With the help of the game, it is easiest to create a situation of success that allows the child to open up. The role of the child in the game is the role of an active participant, the role of a teacher, the role of guiding and correcting. However, one should not forget that, according to S.T. Shatsky, the game "is a life laboratory of childhood, giving that aroma, that atmosphere of young life, without which this time would be useless for humanity." It is very important for a teacher to realize that, being an organizer and participant in a children's game, he should not limit children's initiative and creative understanding of game situations by a child. The game, as a form of leisure pedagogy, has the following functions: - communicative; - social; - psychotherapeutic. The competitive component is very important in the game. “Competition is an internal spring. unwinding of creative forces, stimulation to search” (S.A. Shmakov).

The search for new forms, methods and means of education in the activities of the class teacher, his pupils -should be continuous, since a high degree of activity indicates the success of the educational work of the class team. And yet, the words of E.N. Ilyina: “If love affects the sphere of feelings, without which spirituality is initially unthinkable, and understanding carries a semantic, intellectual beginning, simply knowledge, as the basis of spirituality, then helping is a feeling and thought to put into action, an act -. The soul of the formula is the verb to sympathize... The central, binding verb to receive carries the idea of communicativeness, communication, outside of which nothing makes sense. Five basic concepts - to love, to understand, to accept, to sympathize, to help - is a magical formula for spiritual and moral education in a modern school.

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AYURVEDA MANAGEMENT OF DIPLOPIA: A CASE REPORT

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ABSTRACT

Diplopia is a distressing symptom that can greatly compromise a patient's quality of life. It can have both ocular and neurological causes. As per Ayurveda, it can be correlated with dwandwa drusti (diplopia) as one of the symptoms of dwitiya patalagata timira when doshas lodges in dwitiya patala. This case study throws light on Ayurvedic management of diplopia [Dwandwa drusti] where a male patient of 59 years visited OPD with complaints of double vision associated with watering of eye for 2 months was successfully treated by comprehensive ayurvedic management. Initially the patient was treated with amapachana chikitsa followed by bruhmana and vata shamana chikitsa along with eye exercise of ocular muscles.

KEYWORDS- Diplopia, Dwandwa drushti, eye-exercise

INTRODUCTION

Diplopia, commonly known as double vision, is the simultaneous perception of two images of a single object that may be displaced horizontally, vertically, or diagonally (i.e., both vertically and horizontally) in relation to each other¹. Diplopia has a diverse range of ophthalmologic, infectious, autoimmune, neurological, and neoplastic causes². The various aetiologies of diplopia comprise one of the most sweeping differential diagnoses in all the cases of ophthalmology. The patient who complains of double vision can have something like benign as dry eye or as life-threatening as an intracranial tumour. The cause may be as rare as Wernicke encephalopathy or as common as convergence insufficiency³. But it is usually the result of impaired function of the extra ocular muscles (EOM's), where both eyes are still functional, but they cannot converge the desired object to target. Problems with EOM's may be due to mechanical problems, disorders of the neuromuscular junction, disorders of the cranial nerves (III, IV, and VI) that stimulate the muscles and occasionally disorders involving the supra nuclear oculomotor pathways or ingestion of toxins. Acquired diplopia of unknown etiology may be resolved in 3-6 months. If unresolved in 6 months patient may require correction surgery⁴. An accurate, clear description of the symptoms (e.g., constant or intermittent; variable or unchanging; at near or at far; with one eye [monocular] or with both eyes [binocular]; horizontal, vertical or oblique) is critical to appropriate the diagnosis and management⁵. Diplopia is a distressing symptom that can greatly compromise a patient's quality of life as it may disrupt a person's balance, movement and reading ability⁶. When a person is in a more demanding situation (e.g., driving) or moving around objects in an

unfamiliar situation, the second image, especially at distance fixation, may produce a great deal of consternation, uncertainty, and even danger. An individual with double vision also loses the more subtle but definite advantage of stereoscopic depth perception when dealing with near objects. From the standpoint of comfortable, effective vision and personal safety, diplopiacan play an important role in visual and personal health⁷. Hence diplopia needs to be viewed seriously and management should be done at the earliest. In Ayurveda diplopia is mentioned in the lakshanas of samanya timira⁸. Timira is a disease that encompasses all kinds of visual disturbances like micropsia, macropsia, diplopia, polyopia etc. Timira is a sadhya vyadhi according to acharyas⁹.

Though diplopia is not described as independent diseases entity in Ayurveda, some terms can be co-related with diplopia. Acharya Susrutha have mentioned that when doshas enter in tritiya patala there will be timira vyadhi. In this condition when doshas lodges in Madhya bhaga of drusti then there will be dwandwa drusti i.e. Double vision¹⁰. Vagbata too has described dwandwa drusti (diplopia) as one of the symptoms of dwitiya patalagata timira when doshas lodges in dwitiya patala¹¹.

CASE REPORT

A 59-year-old male patient came to Shalaky OPD, SDM College of Ayurveda & Hospital, Hassan, Karnataka, India with a complaint of Double vision associated with watering of left eye in the morning for 2 months.

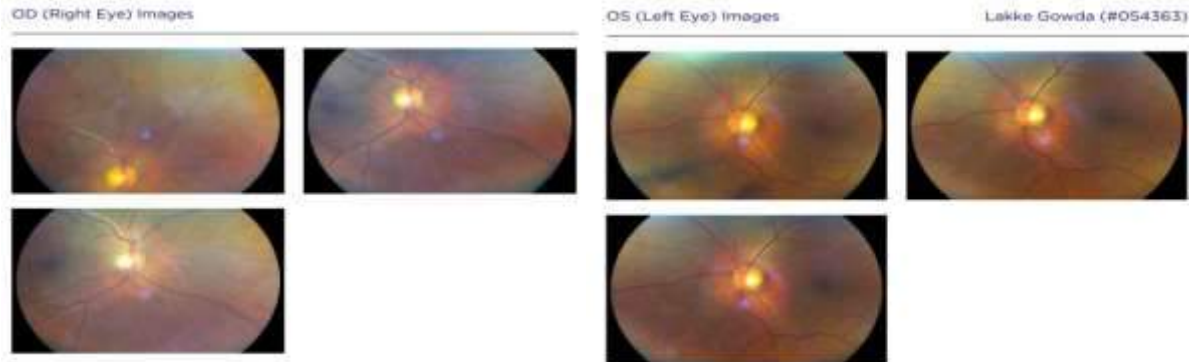
On examination of individual eye, the visual acuity was normal, IOP was within normal limits.

	Distant vision	Near vision
Right eye	6/6	N6
Left eye	6/6	N6

Table 1 – Showing Visual Acuity of both eyes

The vision was normal when viewed from individual eye but when viewed from both eyes there was diplopia in left eye.

On Fundoscopy:



Right Eye:

Pupil- Gray white

Reactive normally

Optic Disc – Within normal limits

Left Eye:

Pupil – Gray white

Reactive normally

Optic Disc – Within normal limits

Before planning the treatment, the patient was screened for diabetes mellitus, thyroid disorder, hypertension and hypercholesterolemia and found all the blood investigations were found to be within normal limits. MRI of brain and orbit was normal. VEP study was also normal

Patient was asked to attend Shalakyia OPD for routine follow up eye check-up for assessing the improvement.

The same treatment protocol was adopted for the next 3 months with intervals of 15 days. By the end of 3 months the patient was relieved of double vision.

TREATMENT ADOPTED

- 1) Amapachana with chitrakadi vati 1 tablet thrice daily before food for 2 days
- 2) Avipattikara choorna 1 teaspoon before food with hot water before food for 7 days
- 3) Sarvanga abhyanga with ksheerabala taila followed by Bashpa sweda
- 4) Mukhabhyanga with ksheerabala taila
- 5) Nasya karma with shadbindu taila 6 drops to each nostril
- 6) Seka with Triphala choorna, Bala choorna, Yashtimadhu choorna Kashaya twice daily
- 7) Netra Abhyanga with Ksheerabala taila twice daily
- 8) Shashtika shaali pinda sweda twice daily
- 9) Tarpana with Triphala Ghrita 10 drops each eye twice daily
- 10) Jati pushpa bandhana for 20 mins twice daily
- 11) Shirothalam with Rasna Choorna, Amalaki choorna with Ksheerabala taila for 2 hours once a day.
- 12) Padabhyanga with Ksheerabala taila once a day
- 13) Eye exercises once a day.

Internal oral administration:

- 1) Cap Ksheerabala 2 tablets twice daily after food
- 2) Dashamoola Kashaya 4 teaspoon twice daily with 8 teaspoons of water before food
- 3) Laghu sutasekhara rasa 2 tablets thrice a day before food

DISCUSSION

Diplopia is a double vision and a very annoying symptoms as it disturbs the routine work of the patient. To relive diplopia all the 6 extra ocular muscles & their nerve supply should become normal so that the movement of eyeball in all 6 directions becomes easy and the co-ordination between the eyes can be achieved. Dysfunction of the extra ocular muscles may be the result of an abnormality of the muscle itself or an abnormality of the motor nerve to the muscle¹².

In this case diplopia was due to the paralysis of lateral rectus muscle of left eye where the lateral rotation of the eye was restricted, and the 6th cranial nerve was inactive. The aim of the treatment is to activate this nerve and normalize the lateral rectus muscle movement. Nasya may interfere with the neurological dysfunction of 6th cranial nerve i.e., abducent nerve and activates the lateral rectus muscle. Hence in this case nasya is a Vyadhipratyanika Chikitsa. Tarpana helps to nourish the eyeball as well as the extra ocular muscles. Sthanika Abhyanga & Sweda helps to rejuvenate the nerves and muscles. Eye exercise helps to improve the tonicity of the muscles and there by helps to relive diplopia.

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INFORMATION TECHNOLOGY AND MEDICINE: CURRENT STATUS, CHALLENGES AND FUTURE PROSPECTS OF TELEMEDICINE IN NIGERIA

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ABSTRACT

Innovations in information technology are not only changing the way people interact with each other but also reshaping how patients engage with medicine. Now an increasing number of people are able to access healthcare remotely from anywhere through these technologies. Individuals who require access to a distant specialist are able to connect with one through this medium. With a population of over 200 million served by about 45,000 doctors, Nigeria, Africa's most populous country is faced with a challenge to meet the healthcare needs of its population. This study highlights the current state, unique challenges and future prospects for telemedicine in Nigeria.

INTRODUCTION

Innovations in information technology are not only changing the way people interact with each other but also reshaping how patients engage with medicine. Before the recent advances in information technology, individuals with medical concerns often needed to schedule an in-person appointment to see a physician [1]. Now an increasing number of people can access healthcare remotely from anywhere through these technologies. In addition, individuals who require access to a distant specialist can connect with one through this medium. The Health Resources and Services Administration defines telehealth broadly as the use of information technology to “support and promote long-distance clinical health care, patient and professional health-related education, and public health and administration” [2].

With a population of over 200 million served by about 45,000 doctors, Nigeria, Africa's most populous country is faced with a challenge to meet the healthcare needs of its population [3]. This high physician-to-people ratio highlights the limited capacity for quality care delivery which understates the poor indices in many aspects of healthcare performance indicators.

TELEMEDICINE IN THE 21ST CENTURY

The 21st century heralded an expansion in the use of telemedicine services in many parts of the world. The convenience of this modality for both patients and physicians in addition to providing access to healthcare for individuals in rural, remote, and

underserved areas drove the expansion of telehealth services over the past two decades. Current telehealth modalities include virtual visits, chat-based interactions, technology-enabled modalities, and remote patient monitoring [4]. Mode of delivery includes cloud-based, web-based, and remote delivery [5]. Telehealth service providers include hospital-based systems, physician offices, and home healthcare services [5]. The COVID pandemic further highlights the importance of access to remote healthcare services. A national survey study in the United States shows a high rate of telehealth usage, rising to 22% of the studied population during the COVID pandemic [6]. A systematic review of telehealth use in the European Union reports an expansion in digital health implementation [7]. A literature review of studies from Australia, Canada, and Brazil reports that an increasing number of specialties are adopting telemedicine [8].

TELEMEDICINE IN NIGERIA: CURRENT STATE

Despite the emergence of internet services in Nigeria in the early 1990s, it was not until the 2000s that individuals not connected to the government or academic institutions began to gain internet access. According to a data report by the International Telecommunications Union, internet users in Nigeria were 0 in 100 persons interviewed between 1996 to 2000, rising to 1.5% in 2004 and 16% in 2008 [9]. The first telemedicine service in Nigeria dated back to 2007 when the National Space Research and Development Agency and conjunction with the Federal



Ministry of Health established its pioneer telehealth services in two teaching hospitals and six federal medical centers in the country. Since then, both public and private enterprises have been involved in establishing telehealth services across the country. Despite the availability of these services, the vast majority of the population does not use telehealth services or lack awareness about the availability of such services.

CHALLENGES TO THE PRACTICE OF TELEMEDICINE IN NIGERIA

Although there has been a growth in the availability of telemedicine services in Nigeria over the past decade, there are still challenges facing telemedicine in Nigeria. Internet services; the bedrock of telemedicine is currently unavailable in many parts of the country. Internet penetration, defined as the proportion of the population that has access to the Internet is currently 55.4% in Nigeria [10]. This means half of the population (over a hundred million) doesn't have internet access. This presents a formidable barrier to telemedicine in the country. Another challenge is the high level of illiteracy in many parts of the country (literacy rate of 59%) [11]. Low education level is associated with lower telehealth usage [6]. In addition, due to the peculiarities of telemedicine, there are legal restrictions on the use of such services in some parts of the country.

OPPORTUNITIES AND PROSPECT

The global telehealth service was valued at \$83.5 billion in 2022 with a projected compound annual growth of 24% from 2023 to 2030. This projection is based on the expected internet penetration over the next decade. This presents a unique opportunity for the expansion of telehealth services in Nigeria. As the country struggles with severe limitations in primary and specialty care services, telemedicine provides a way to ameliorate some of these challenges. Efforts must be targeted at improving internet penetration, improving literacy rates, and encouraging collaborative services aimed at improving access to telehealth services. In addition, legislation should be directed at removing the barriers to optimal access to these services.

CONCLUSION

Although telemedicine is expanding in Nigeria, about half of the population has no access to internet services and telemedicine. Improving healthcare indices and outcomes would require a collaborative effort between public and private enterprises to improve access to telemedicine services.

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CONTENT AND STRUCTURE OF LINGUISTIC COMPETENCE

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ABSTRACT

This article dedicates content and structure of linguistic competence. Linguistic competence is relevant to use of language through the expression and interpretation of concepts, thoughts, feelings, facts, and opinions in order to perform oral and written discussions. Linguistic competence interactions may take place in diverse social and cultural contexts, which will determine the characteristics of the language written or spoken, such as the grammar, pragmatic, and sociolinguistic characteristics.

KEY WORDS: *competences, general scientific competences, basic competences, develop activities, communication*

Аннотация: Данная статья посвящена содержанию и структуре языковой компетенции. Лингвистическая компетенция имеет отношение к использованию языка посредством выражения и интерпретации понятий, мыслей, чувств, фактов и мнений для проведения устных и письменных дискуссий. Взаимодействия лингвистических компетенций могут иметь место в различных социальных и культурных контекстах, которые будут определять характеристики письменного или устного языка, такие как грамматические, прагматические и социолингвистические характеристики.

Ключевые слова: компетенции, общенаучные компетенции, базовые компетенции, развивающая деятельность, общение.

Annotatsiya: Annotatsiya: Ushbu maqola lingvistik kompetentsiyaning mazmuni va tuzilishiga bag'ishlangan. Lingvistik kompetentsiya tushunchalar, fikrlar, his-tuyg'ular, faktlar va fikrlarni og'zaki va yozma muhokama qilish uchun ifodalash va izohlash orqali tildan foydalanishga tegishli. Lingvistik kompetentsiyaning o'zaro ta'siri turli xil ijtimoiy va madaniy kontekstlarda sodir bo'lishi mumkin, ular yozma yoki og'zaki tilning grammatika, pragmatik va sotsiolingvistik xususiyatlar kabi xususiyatlarini aniqlaydi.

Kalit so'zlar: kompetentsiyalar, umumiy ilmiy kompetentsiyalar, asosiy kompetentsiyalar, faoliyatni rivojlantirish, aloqa

INTRODUCTION

As we know linguistic competences are related to the use of language [2] through the expression and interpretation of concepts, thoughts, feelings, facts, and opinions in order to perform oral and written discussions. [11] Such interactions may take place in diverse social and cultural contexts, which will determine the characteristics of the language written or spoken, such as the grammar, pragmatic, and sociolinguistic characteristics. [12] Linguistic competences are highly related to communication competences and they are even seen as equal. [13] Within scientific production and communication, linguistic competences are related to the adequate use of language, especially written, and they are characterized by: (1) the adequate [1] use of written

language and structuring of content; (2) reading and writing of scientific documents in the reader's native language; and (3) reading, writing, and translation of documents to other non-native languages, [10] particularly in the most used (e.g., English), [9] translation may not indicate a complete proficiency of another language, but it must be good enough to allow its reading and interpretation. [14]

Linguistic competences are also related to information competences, because the correct writing of scientific [8] documents and the description of research findings demand the demonstration of information seeking, selection, compilation, and processing competences, which are supported in the comprehension and production



of scientific texts for diverse audiences. [15] Linguistic competences involve a set of skills, knowledge, and attitudes that are interrelated and mutually supported in order to conduct a successful scientific communication that may be destined to different communities or audiences (scientific or the general public), who will be able to understand the communicated knowledge and even use it, provided that they have been correctly materialized from a linguistic point of view. [16]

In any form of training, linguistic competences tend to be wide, transversal, multipurpose, and basic for all individuals, they are also inherent to every scientific culture and discipline. [17] These competences are highly related to other individual skills such as reading, because whoever does not read will not be able to write properly. [7] These competences are necessary for the collective interaction and knowledge production of diverse groups of people, either specialists (scientific communities) or the general public (scientific dissemination to all social sectors). [18]

According to international organizations such as the OECD (2007), linguistic competences have diverse applications, especially oral, [6] written, and through the use of ICTs, expressed both in the native language as well as in other languages. However, their application to written language is emphasized, as it is a determining element to publish scientific products that may be registered and measured as part of the scientific communication of an individual, institution, region, or scientific discipline. [19] The use of linguistic competences for the construction of scientific texts and products implies: (1) a certain level of knowledge about the topic that is being developed, which especially comes from the use and management of scientific literature, [20] but without discarding previous knowledge that may have originated from scientific dissemination documents (understood as a cognitive competence); (2) development of individual and collective activities under topical, syntactical, and lexical conventions among the participants; (3) the adequate use of the language goes beyond a correct writing style, it means having the capacity of understanding, deciding, [21] and acting upon criticisms received and distinguish among opinions, facts, hypotheses, theories, laws, and contributions; and (4) capacity of confronting the consequences of what has

been expressed in writing, as this is [5] generated knowledge, such ideas become epistemic factors within a scientific discipline that may be either a new contribution or further elaboration from previous ones. [24]

The level of application of every competence to scientific production and communication will vary depending on each scientific discipline.[3] Professors and researchers must exhibit a high level [22] of linguistic competences regarding the definition, explanation, argumentation, and justification of the topics they study, at least within their own scientific discipline [4] In contrast, information professionals must acquire several cognitive competences related to the scientific disciplines they collaborate with, but they also should be able to adapt to working with other disciplines. [23] The relationship between linguistic competences and scientific production and communication implies: (1) identifying the contextual elements of what is intended to be communicated; (2) planning scientific production processes; (3) using scientific language adequately and correctly; and (4) applying semantic norms in order to present the texts in a clear and adequate way. [25]

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THE SEMANTIC FEATURES OF THE CONCEPT “KNOWLEDGE” IN THE LINGUAL WORLD PICTURE

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ABSTRACT

The present article investigates the semantic features of the concept “knowledge” in lingual world picture. Conceptology is the concept science that studies the content and interaction of concepts in the context of language system. Conceptology studies both the national and collective, as well as individual concepts. As part of conceptology today, the science describing the concepts listed in language using linguistic means is separated. Conceptology is one department of the interdisciplinary cognitive science.

KEY WORDS: *concept, conceptology, lingual world picture, cultural heritage, process of conceptualization, semantic features.*

Cognitive concept of cognition linguistics is the concept - that is, the field of knowledge made up of concepts. The concept is the affirmation of the human consciousness, the global unit of mental activity, the knowledge of the world around. T.V. Matveeva interprets the concept as a language expressed in the language of human and society [T.V. Matveeva, 2003, p. 28]. The concept reflects the ethnic content of language culture and communication between human and society [N.N. Boldyrev, 2018, p.11]. Linguists say the meaning of the word appears in the communication process and the concept is expressed in the language of one or that event.

Concept can be verbal and it is universal derivative code. People think using concepts, i.e. code units. In the minds of man, the sorting set of the concept is the field of concept, meaning the system of concepts.

The spiritual image of human is the fruit of the spirit and talent, who demonstrates the power of reason and thinking which leads to our wonder and excitement. But the biggest miracle is a good understanding of artificial word flativity and to understand the whole subtle aspects of the age meanings.

Studies in the system of science in the XXI century play an important role. The interpretation of knowledge and its modern linguistics in terms of anthropocentric paradigm attracts the attention of world scientists [A. Vejbitskaya, 1997, p. 74]. The concept "knowledge" will increase the duties of such research. This concept is studied as a national concept for each culture of language, because it demonstrates the national mind, national ideology and unique mentality of different nationalities and ethnic metal. This concept was studied in the example of Russian and other world languages.

Language landscape shapes a cognitive form, illuminates the associations and knowledge of the world related to the knowledge of the world and related to human inner world. The language view of the world is the national

nature and varies under the influence of national stereotypes. For example, if we analyze the concept of the concept of "knowledge", the stereotypes of knowledge in the past and today's centuries have changed radically. In the past centuries, girls usually refused to get higher education and prefer to have a housewife. Such a stereotype in the last century does not correspond to the XXI century, for the time requires this, despite the gender, should be educated. Such a person contributes to society. Mentality describes a part of the language view, a certain nation, nation, ethnicity and thought and minds of the social group. This means that cognitive, cultural and social features are characterized by the language.

The concept has not only experienced world-class objects and their information, but also depicts the relationship between people [V.I. Karasik, 2004, b. 89]. Relations are expressed using different grades. The concepts of the world are way of thinking will be involved. National culture is associated with concepts such as the day of the people's day of life, history, traditions, and experience. The national landscape of the universe will study the culture, thinking features and artistic culture of this or that language.

In the study of the concept, aciological, prototypical, semantic-pragmatic and integrated approaches will play great importance.

The language of language learning is directly related to the interaction of language and thinking, because the information you want to deliver to the speaker or the reader are formed using a word combination, talk or text. Cognitive approach is especially inventively in an analysis of art text, because the text has extracting and relies on the reader's personal experience and trust.

The form of knowledge is displayed in conceptual and language. Knowledge plays an extremely big role in human life. The concept of "knowledge" is a meaningful and multifaceted, consisting of a number of words and frames of a



number of semantic field. For example: school, book, academic degree, etc. School - Source of Book - The Source of Education is interpreted as the result of a higher peak of knowledge. We see that all words reflect the semantically within the framework of the "knowledge" contestation.

It is known that every concept has its own lexical semantic area. The lexical semantic area consists of many semantic groups and semantic parts. They contact each other and describe the objects, processes and events of the universe. Linguistic events such as synonymy, antonymy and semantic closeness are involved in semantic fields. If the semantic area appears around a word, then a lexical semantic area is formed, as expressed in the context of the phraseological unity, the phraseological-semantic area is formed. Semantic fields have general and differential properties.

It is known that the concept will consist of the core and peripherals. As the main keyword, peripheral, serves other parts of the concept as peripherals.

The concept of "knowledge" reflects its unique national-cultural characteristics in different languages. Analysis of this concept using conceptual methods creates the basis for covering its parts and content. The main content of the concept is lexemes and their vocabulary transform part of the research.

The dominant lument of the concept of "knowledge" includes "learning and perception of knowledge". The concept under the study can be expressed with the help of a variety of words. For example, knowledge, know, mind, smart, etc. Even if each word related to the concept, they are activated in the only semantic area with each other.

The concept of "knowledge" consists of many frames, such as "mental mental, consciousness, knowledge, and mental ability." Determining the meaning of Know verb in English and has a series of semantic differential marks: to know - understand, be aware, to be informed - to notify, to have learned - learn; to understand.

Concepts are directly related to human mind. If the word "knowledge" is the essence of this concept, the above words are the peripheral of this concept. It should be noted that the concept of "knowledge" is enacted in lexical, phraseological and paremological layers. In addition, the concept conducted will be actively activated in artistic works and the language lights up the peculiarities of the culture. The concept of "knowledge" is involved in different layers of the language system: in scientific, official business and conversation. The formation of this concept affects linguistically and extralinguistic factors.

The concept of "knowledge" is a mental device that reflect the scientific, cultural and educational content of the world. Problems with knowledge reserves are even more relevant in the linguist of the 21st century. The concept of "knowledge" plays an important role in an anthropocentric paradigmator, as this concept is not yet fully studied, especially in a comparative aspect.

The concept of "knowledge" is reflected in linguocultural units. It includes phraseological units and proverbs. Such units have expressive, connotative (assessment) and image fundament. In each language system, the concept of knowledge is in central location. It can also

have both positive and negative contents. Learn in knowledge, to have knowledge, and to learn knowledge has a positive consentation in each language. Circumstances are considered negatively assessed, such as renunciation of education, destitution, and loss in the process of learning. It is emphasized that many languages are knowledge strength. It is not criticized in especially the purposes of having less knowledge or acquisition. Knowledge is based on a strong victory of a person. The knowledge is divided into two main types: 1) specifically, that is, a specific knowledge of a specific area, will be professionalized by the profession and 2) general knowledge.

It is known that every concept is national character because it is formed at the heart of national stereotypes and national consciousness, national minds. The liaison view of the universe reflects the cognitive, cultural and social characteristics of a particular society, because the landscape of the world is manifested in various mentality, thinking and culture. Moreover, the views of the world covers their knowledge of people's minds, actions, and the world.

The national world picture consists of traditions, lifestyle, behavior models, mine and kinetic codes, specific thinking, national mind, artistic literature and cultural heritage.

The concept is analyzed using a variety of techniques, but two main methods can be divided into cognitive and lingocultural. The remaining methods: prototypical, academic, contextual and b.

We know that every concept consists of many frames. The theory was created by of famous American scientist Ch. Fillmore. The frame is a shock or component that expresses the meaning of the concept [Ch. Fillmore, 1982, p. 28]. The concept of "knowledge" has a meaningful, complex and very large semantic area, as many frames and subframes into this concept (part or component of the frame or component). For example, we will mention the frames of the concept of "knowledge": Education, school, book, study, science, research, scientist, etc. These frames of the universe even illuminate this frames of the universe, but also scientific landscapes of the universe. It can be concluded that the concept of "knowledge" is a scientific concept, which is expressed using many lexemes in various scientific terminals and science. Considering the semantic area of the frames listed:

Education is one of the main frames of the concept of the "knowledge", for human knowledge accepts knowledge, absorbs and lives through the educational process. The main purpose of education is to educate people and form a knowledge reserves. Therefore, the education system is constantly improved and creates new conditions and technology to provide quality education. The education system, in turn, divided into several stages: primary education, secondary education and higher education. Educational programs are created, based on the possibility of receiving knowledge related to age of students for each stage. We see that the Education frame consists of several subframed: the educational program, education system, type of education, etc. This frame may also be studied as a separate concept, but in this study, the word "Education" was also studied as a frame of the concept of "knowledge".



School – place where knowledge receives. The first schools were built in the ancient Greece. The number of schools has increased by demographic expansion and knowledge of the need for the century. If education is a process that teaches the knowledge, the school is the place of this process. School students provide a variety of conditions for obtaining knowledge in various fields, we present them as subframe: buildings, books, technical base, school furniture and various equipment, lessons, teachers, etc. So, the "School" frame can also be studied as a separate concept.

The book is a source that learns. There are many positive proverbs and principals about the book in different nationalities. The book is a motto that is a human friend. The book type is thousands of data in various fields. The main task of the book is to transmit knowledge into human, that is, learning. The main types of books: scientific books, dictionaries, business books, cooking books, fairy tales, etc. The Book frame also consists of several subframe, for example: page, author, size, page, and b.

Studying is a frame of the concept of "knowledge" and represents the movement by man to learn. This means that the effect of the reading process is based on the age, mental skill, such as the age, to seek knowledge and interest.

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CALCANEAL FRACTURE, EPIDEMIOLOGY, ANATOMY, MECHANISM OF INJURY, CLASSIFICATION, IMAGING PRESENTATION, CLINICAL PRESENTATION, MANAGEMENT AND COMPLICATIONS

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SUMMARY

Introduction: Throughout time, calcaneal burst fractures have been referred to as lovers' fractures because the injury occurred when a suitor jumped off a lover's balcony to avoid detection. The calcaneus is part of the 7 tarsal bones, calcaneus, talus, cuboid, navicular, first, second and third cuneiform. Calcaneal fractures are infrequent, however, they have a high potential to weaken the limb.

Objective: to detail current information related to calcaneal fractures, epidemiology, anatomy, mechanism of injury, clinical evaluation, imaging evaluation, classification, treatment and complications.

Methodology: a total of 30 articles were analyzed in this review, including review and original articles, as well as clinical cases, of which 21 bibliographies were used because the other articles were not relevant to this study. The sources of information were PubMed, Google Scholar and Cochrane; the terms used to search for information in Spanish, Portuguese and English were: calcaneal fracture, calcaneus, calcaneal osteosynthesis, foot fractures.

Results: The calcaneus is the most commonly fractured tarsal bone, representing 2% of all fractures. Calcaneal fractures are bilateral in 5 to 10%, and are usually related to fractures of the lumbar spine and other fractures of the lower limb caused by high-impact trauma. About 10 % of calcaneal fractures are open.

Conclusions: The calcaneus is the most commonly fractured tarsal bone, accounting for 2 % of all fractures. Calcaneal fractures are bilateral in 5 to 10% and are usually related to fractures of the lumbar spine and other fractures of the lower limb caused by high impact trauma. About 10% of calcaneal fractures are open, and neurovascular injuries are infrequent in calcaneal fractures. Calcaneal fractures are more related to high energy impacts that generate axial loading of the bone, however they can occur with any injury to the foot and ankle. The main characteristics of individuals affected with a calcaneal fracture are pain, swelling, widening, deformity, ecchymosis and functional impotence. To make the radiological diagnosis of calcaneal fracture in the first instance it is recommended



to request an anteroposterior projection of the foot, lateral projection of the rearfoot, Harris axial projection and an ankle series; if necessary, a computed tomography can be performed. In practice, calcaneal fractures can be classified as intra-articular or thalamic and extra-articular; in addition, classification systems such as Sanders and Essex-Lopresti are used. Treatment is controversial. Even with adequate reduction and management, calcaneal fractures can become extremely disabling injuries, presenting a mutable prognosis with various types of functional limitation and pain. Currently, some factors have been found to be related to better outcomes, however, the literature comparing various methods of surgical versus conservative treatment show that surgical management has increased complication rates, however, it may lead to optimal functional outcomes in some individuals. Generally, the incidence of complications of calcaneal fractures is high and increases the worse the wound. Among the most common are calcaneal osteomyelitis, post-traumatic osteoarthritis, wound dehiscence, increased heel width, loss of subtalar mobility, chronic peroneal tendonitis, and complex regional pain syndrome.

KEY WORDS: fracture, calcaneus, osteosynthesis, foot.

INTRODUCTION

Over time, calcaneal burst fractures have been referred to as lovers' fractures because the injury occurred when a suitor jumped off a lover's balcony to avoid detection. The calcaneus is part of the 7 tarsal bones, calcaneus, talus, cuboid, navicular, first, second and third cuneiform. Calcaneal fractures are infrequent, however, it has a high potential to weaken the limb. The subtalar or calcaneal-talar joint is part of the dorsal flexion, plantar flexion of the ankle and foot. Calcaneal fractures that are intra-articular displaced are injuries that transform the lifestyle, the importance of the fracture and the difficulty of treatment sometimes lead to long-term discomfort, therefore, many of the affected individuals do not reach the levels of physical activity, work and other activities as prior to the pathology.

To better restore the affected lower limb to normal ambulation, surgery is suggested to reconstruct displaced intra-articular calcaneal fractures. The approach used in calcaneal fractures by means of a lateral extensor incision has presented a high rate of complications in wound healing, so currently minimally invasive and tarsal sinus incision approaches are tried in the restoration of calcaneal fractures(1-5).

METHODOLOGY

A total of 30 articles were analyzed in this review, including review and original articles, as well as cases and clinical trials, of which 21 bibliographies were used because the information collected was not important enough to be included in this study. The sources of information were Cochrane, PubMed and Google Scholar; the terms used to search for information in Spanish, Portuguese and English were: calcaneal fracture, calcaneus, calcaneal osteosynthesis, foot fractures.

The choice of bibliography exposes elements related to epidemiology, anatomy, etiology, mechanism of action, clinical evaluation, imaging evaluation, classification, treatment and complications of calcaneal fracture.

DEVELOPMENT

Epidemiology

The calcaneus is the most commonly fractured tarsal bone, accounting for 2% of all fractures. Displaced intra-articular fractures account for 60% to 75% of calcaneal fractures. About

10% of calcaneal fractures are open. Associated morbidities such as osteoporosis and diabetes may increase the risk of fracture. The majority of these calcaneal fractures occur in males between 21 and 45 years of age, accounting for approximately 90% and are very common in workers in the industrial sector. Calcaneal fractures are infrequent in infants(1,6,7).

Anatomy

The anterior half of the superior articular surface has three facets that articulate with the talus. The posterior facet is larger and forms the largest bearing area. The medial facet is located anteromedially over the sustentaculum of the talus. The anterior facet usually follows the medial facet. Between the medial and posterior facet is the interosseous sulcus, which together with the talar sulcus gives rise to the sinus of the tarsus. The sustentaculum of the talus maintains the neck of the talus in the medial part, besides being linked to the talus by means of the interosseous talocalcaneal ligament and by the deltoid ligament; it also maintains the medial articular facet in its superior zone. On the medial aspect, the tendon of the flexor hallucis longus runs under the sustentaculum of the talus. On the lateral aspect, the peroneal tendons run between the calcaneus and the lateral malleolus. The tibial nerve and artery run along the medial aspect of the body of the calcaneus; neurovascular injuries are infrequent in calcaneal fractures. The Achilles tendon reaches the posterior tuberosity of the calcaneus(1,6-8).

Etiology and Mechanism of Injury

Calcaneal fractures are more related to high energy impacts that generate axial loading of the bone, however they can occur with any injury to the foot and ankle. Falling from a height is the main origin of intra-articular fractures, since the talus impacts on the calcaneus, which is composed of a thin cortical lamina that surrounds the cancellous bone; therefore the talus generates a depression and widening of the body of the calcaneus. Other mechanisms of action presented are those given in automobile accidents, generated by impacting the plantar aspect of the foot with the accelerator or brake pedal, closed, penetrating trauma and torsion-cutting mechanisms. Most injuries lead to flattening of the bone as well as widening and shortening. Stress fractures can occur but require excessive and repetitive use. Torsional forces are related to extra-articular fractures of the calcaneus, mainly in the anterior, medial and sustentaculum processes. In



individuals with diabetes there is a high incidence of tuberosity fractures by avulsion from the Achilles tendon(1,6,7,9-12).

Clinical Evaluation

A complete and comprehensive medical history is essential in the medical evaluation. Trauma patients should be evaluated with the ATLS algorithm to rule out any life-threatening injuries(13):

A: airway management and cervical spine stabilization.

B: Respiration

C: Circulation and hemorrhage control.

D: inability to assess neurological status.

E: Exposure

The main characteristics of individuals with a calcaneal fracture are as follows:

- Heel pain is usually moderate to severe.
- Swelling, inflammation, widening and shortening of the heel.
- Deformity of the rearfoot and functional impotence for support.
- Ecchymosis in the arch of the foot and around the heel.
- Flictenas, usually due to the massive inflammation that is generated.

Occasionally it can also occur:

- Peroneal dislocation or subluxation.
- Neurovascular compression of the posterior tibial.
- Interposition of the tendon of the flexor hallucis longus between the fragments.

The exposed fractures are not very habitual, nevertheless when they are presented they usually compromise the medial zone. A detailed evaluation of the soft tissues and neurovascular involvement is very important, in addition to assessing the existence of a compartment syndrome of the foot, which may be present in up to 10% of calcaneal fractures causing an alteration of the claw toes. Calcaneal fractures are bilateral in 5% to 10% and are generally related to fractures of the lumbar spine and other fractures of the lower limb caused by high impact trauma(6,7,11).

Imaging Evaluation.

To make the radiological diagnosis of calcaneal fracture in the first instance it is recommended to request an antero-posterior projection of the foot, lateral projection of the rearfoot, Harris axial projection and an ankle series.

In the lateral projection the angle of Böhler should be measured, which using the line that joins the highest points of the anterior and posterior processes, normally is between 25-40 degrees, a reduction of this angle suggests that the load area of the posterior facet of the calcaneus collapsed which generates a displacement of the weight of the body towards the anterior. The Gissane angle calculates the articular congruence of the posterior facet, measured between the posterior facet and the peak of the calcaneus normally 95-105 degrees and is located just below the lateral process of the talus; an increase suggests that the posterior facet collapsed(6,7,11).

In the anteroposterior projection of the foot, an extension of the fracture trace to the calcaneocuboid joint may be present.

In the Harris axial projection obtained with the foot in dorsiflexion and the X-ray beam angled 45° in the cephalic direction, it shows the articular surface, in addition to the loss of height, the increase in width and the angulation of the tuberosity fragment.

Broden projections are currently not widely used since their role has been replaced by computed tomography, however they are used intraoperatively to know the situation at the time of reduction. They are performed with the individual in supine decubitus and the chassis under the leg and ankle. The foot in neutral flexion and the leg in 15 to 20 degrees of internal rotation. The X-ray beam is centered over the lateral malleolus and four projections are made with the tube angled towards the individual's head at 40, 30, 20 and 10 degrees. The 10-degree angled projection presents the posterior portion and the 40-degree projection presents the anterior portion.

Computed tomography provides information on the global shape of the heel, the articular surface of the posterior facet, the sustentaculum, the position of the peroneal tendons and the flexor tendon of the big toe, in coronal slices. Axial slices show the anteroinferior part of the posterior facet, the calcaneocuboid joint and the sustentaculum. Sagittal reconstructions present additional information(6,7,11).

Classification

In practice, calcaneal fractures can be classified as intra-articular or thalamic and extra-articular.

Extra-articular fractures make up 1/4 of calcaneal fractures. They are usually due to avulsion of the calcaneal tuberosity of the Achilles tendon, the anterior process of the bifurcated ligament or the sustentaculum of the talus. They do not injure the posterior facet.

The fractures of the anterior process: they can result from a forced plantar flexion with inversion generating a fracture by avulsion; or by abduction of the forefoot and calcaneocuboid compression. Fractures of the posterior tuberosity: due to avulsion by the Achilles tendon, mostly in diabetics and women with osteoporosis, although they are also generated by direct trauma. Fractures of the medial process are vertical shear fractures caused by heel valgus loading.

Fractures of the sustentaculum of the talus generated by a load on the heel plus a forced inversion of the foot.

Fractures of the body that do not affect the subtalar joint are generated by axial loading. They can have great comminution, widening and loss of height, plus reduction of Böhler's angle and without involvement of the posterior articular facet(6,7).

Intra-articular fractures represent the missing 3/4. The talus acts as a hammer or wedge compressing the calcaneus at the angle of Gissane causing the fracture.

The Essex-Lopresti classification and the Sanders classification are also used, the latter based on the evaluation through coronal

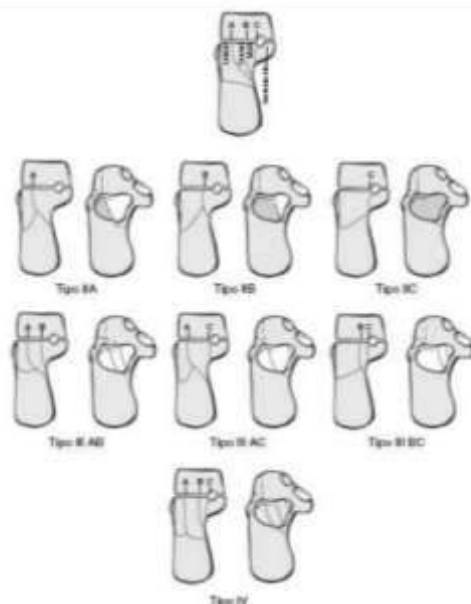
CT of the posterior subtalar facet and the number of fragments of this facet displaced more than 2 millimeters.

- Type I: 1 bone fragment not displaced or minimally displaced.
- Type II: 2 bone fragments involving the posterior facet. It is subdivided into types A, B and C according to the medial or lateral location of the fracture line.
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- Type III: 3 bone fragments including an additional depressed medial fragment. It is subdivided into types AB, AC and BC, according to the position and location of the fracture lines.

- Type IV: 4 comminuted bone fragments(1,6,7,11).

Figure 1. Sanders classification for calcaneal fracture.



Source: Koval KJ, Zuckerman JD. Fracturas y luxaciones. 2 ed. Madrid: Marban; 2003.

Treatment

Treatment is controversial. Even with adequate reduction and management, calcaneal fractures can become extremely disabling injuries, presenting a mutable prognosis with various types of functional limitation and pain. Currently, some factors have been found to be related to better outcomes, however, the literature comparing various methods of surgical versus conservative treatment show that surgical management has increased complication rates, however, it may lead to optimal functional outcomes in some individuals. The current literature presents that the decision to operate should be based on the characteristics of the affected individual, the fracture and the talent of the surgeon. Initially, management includes excellent wound care, plus antibiotics if necessary in contamination. In addition to analgesics, the PRICE protocol "Protection, Rest, Ice, Compression, Elevation" and immobilization with splints, usually of the Bulky Jones type.

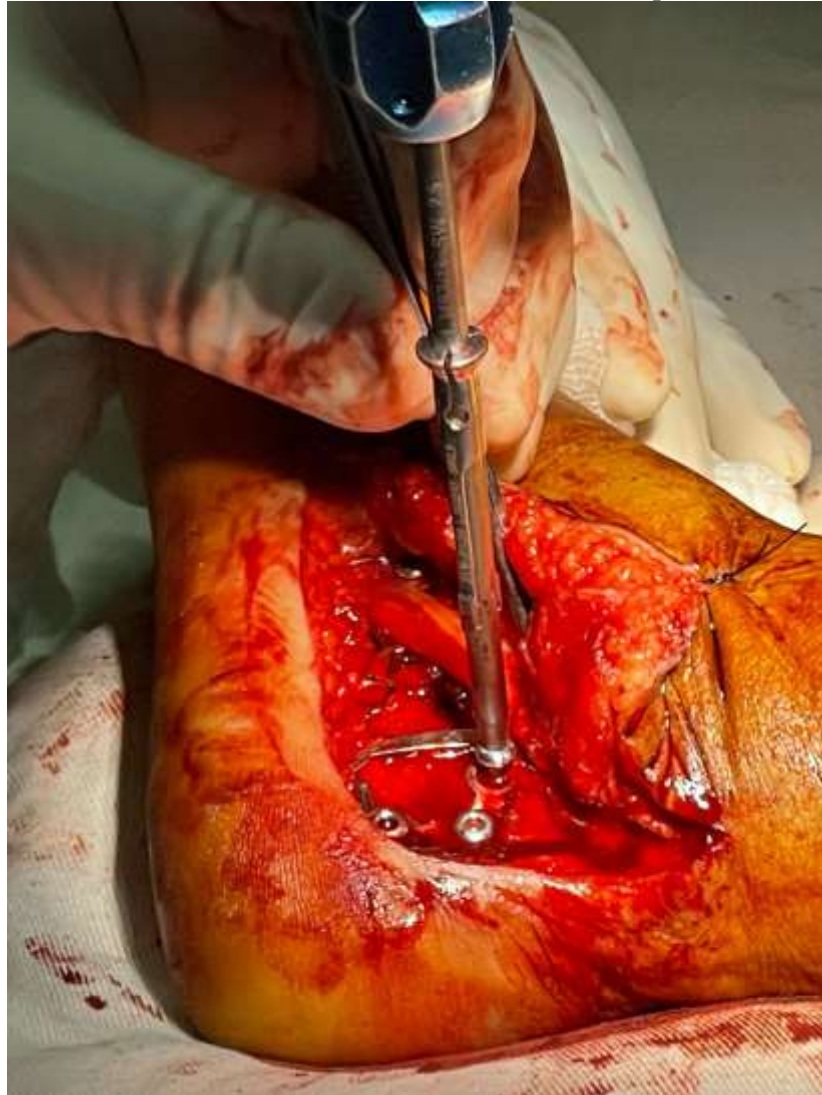
Conservative treatment is indicated on the following occasions:

- Non-displaced extra-articular fractures.
- Minimally displaced extra-articular fractures.

- Fractures of the anterior process with less than 1/4 of involvement of the calcaneocuboid joint.
- Non-displaced intra-articular fractures.
- Fractures in individuals with severe peripheral vascular disease.
- Fractures in individuals with insulin-dependent diabetes.
- Individuals with other comorbidities that contraindicate surgery.
- Fractures with long-standing phlyctenas and edema.
- Fractures with large open wounds.
- Life-threatening injuries.

The management begins with the Jones padded bandage, a support splint can be used to achieve the reabsorption of the initial hematoma, and then place a neutral flexion blocked suropedic orthosis with the purpose of not presenting equinus deformity. An elastic stocking can be used to reduce edema. Early initiation of joint mobility exercises is recommended. Unloading should be maintained for about 10 to 12 weeks, until consolidation is achieved on radiographs(6,7,14).

Figure 2. Surgical treatment of calcaneal fracture with anatomical calcaneal plate and screws. Lateral approach.



Source: The Authors.

Surgical treatment is indicated on the following occasions:

- Fractures-dislocations of the calcaneus.
- Fractures of the anterior process of the calcaneus with involvement of more than 1/4 of the calcaneocuboid joint.
- Displaced intra-articular fractures in the posterior facet.
- Displaced fractures in the calcaneal tuberosity.
- Some open fractures of the calcaneus.

It is recommended that the affected individual receive surgical treatment in the first 3 weeks of evolution, before an early consolidation is generated. In addition, surgery should not be attempted until the swelling of the foot and ankle is lost, with reappearance of skin folds.

Specific Fractures.

Extra-articular fractures.

- *Fractures of the anterior process:* Surgical treatment is recommended when the CT scan shows a compromise of more than 1/4 of the calcaneocuboid joint.
- *Fractures of the posterior tuberosity by avulsion:* caused by sudden traction of the triceps sural, which generates the avulsion of a fragment of variable size. Surgical treatment consists of placing a compression screw with or without wire cerclage.
- *Fractures of the calcaneal body:* minimally displaced fractures of 10 mm are treated with early mobility and without weight bearing for 10 to 12 weeks. Mostly displaced fractures that result in lateral impingement, varus or valgus deformity, loss of heel height or translation of the posterior tuberosity require open reduction with internal fixation.
- *Medial process fractures:* infrequent and typically nondisplaced. Non-displaced fractures can be managed with a suropedic cast, limiting load, for 8 to 10 weeks.



Displaced fractures can be evaluated for closed reduction(1,6,7,11).

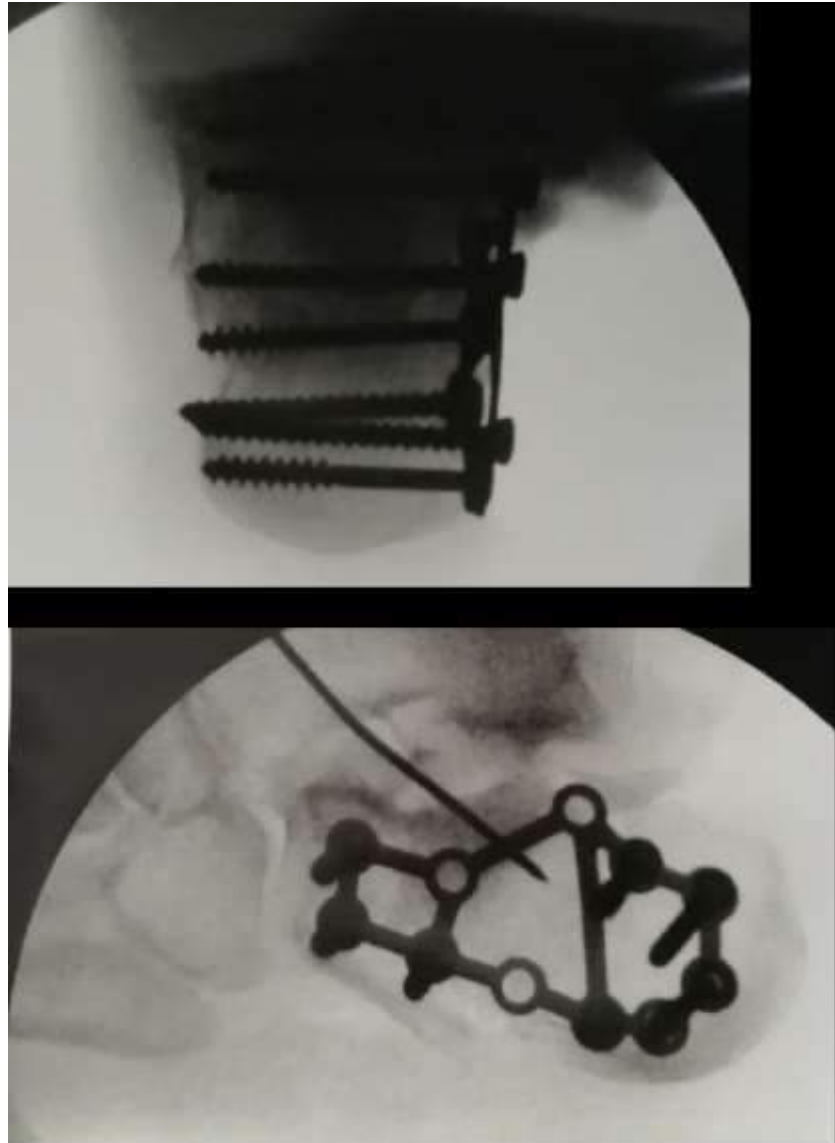
Intra-articular fractures.

Intra-articular fractures surgical treatment is significantly better with surgical treatment in female patients, young adults and individuals with a job without great physical requirements. The goals of surgery are:

- Restore congruence of the subtalar joint.
- To restore the Böhler angle.
- Restore the normal width and height of the calcaneus.
- Preserve normal calcaneocuboid joint.
- Neutralize the varus deformity of the fracture.

Open reduction with internal fixation is usually performed through a lateral L-shaped incision. The posterior facet is reduced and stabilized with compression screws in the talus sustentaculum, the calcaneocuboid joint is reduced in addition to the lateral wall, heel length is restored by neutralizing the varus, and a low-profile neutralization plate is placed on the lateral aspect to act as a strut. Bone alterations do not need to be grafted, however if they are completed, weight bearing can be established earlier. In tongue type fractures, it has good results with percutaneous reduction and fixation with compression screws. In high energy injuries, primary subtalar arthrodesis or triple arthrodesis can be used. Load deprivation is recommended for 8 to 12 weeks and full loading after 3 months(6,7).

Figure 3. Fluoroscopic Images After Immediate Postoperative Period Following Osteosynthesis With Calcaneal Plate and Screws.



Source: The Authors.



Prognosis

The Sanders classification has been shown to have considerable prognostic value. Studies have shown that type III fractures are 4 times more likely to require a final subtalar fusion when compared to type II fractures. Some populations tend to have better outcomes such as: women, young adults, individuals not receiving institutional compensation, individuals with a lighter workload. The amount of onset displacement based on the Bohler angle of 0 degrees is related to lower functional outcomes. An onset Bohler angle greater than fifteen degrees relates to better functional outcomes(1,15-17).

Complications

Generally, the incidence of complications of calcaneal fractures is high and increases the worse the injury. There are studies that indicate that approximately 70% of individuals with calcaneal fractures present some other type of concomitant injury, due to the nature and the great force necessary to cause this type of fracture. It is important to perform a complete physical examination, mainly to rule out spinal pathology, even more so when the mechanism that produces the injury is a fall. The energy of the vigorous impact against the ground is directed upwards through the lower extremity, generating compression fractures of the spine. Infrequently, compartment syndrome may occur in the foot up to 10%(1,5,18).

Some of the complications usually related to calcaneal fractures are:

- *Calcaneal osteomyelitis*: the risk of this is reduced by allowing the soft tissue edema to self-limit prior to surgery.
- *Post-traumatic osteoarthritis*: due to articular cartilage damage, displacement and comminution of the fracture, it can be calcaneocuboid or subtalar. It can be managed by infiltrations, orthoses and in some cases with subtalar arthrodesis or triple arthrodesis. This may be present even when there is an anatomical reduction.
- *Wound dehiscence*: it is recommended to meticulously manage the soft tissues, in addition to reducing skin damage in the wound synthesis, to reduce the risk of presenting it, usually when it appears it is located in the vertex of the incision. It should be managed with dry/wet local dressings, if necessary a skin graft or a muscle flap could be performed.
- *Increased heel width*: there is usually an expected amount of heel widening, even when the patient undergoes open reduction plus internal fixation; the widening can lead to lateral entrapment of the peroneal tendons or fibula. It can be remedied by removal of the synthetic material or resection of the wall.
- *Loss of subtalar mobility*: this is common in intra-articular fractures.
- *Chronic peroneal tendinitis*: usually generated after conservative treatment for lateral entrapment.
- *Chronic pain*: some affected individuals exhibit chronic heel pain that can become disabling.

- *Complex regional pain syndrome*: it can be generated in conservative and surgical treatment(6,7,16,19,20).

Impaired wound healing and soft tissue disorders can lead to increased morbidity in calcaneal fracture patients, so reconstructive principles that preserve the injured limb well and optimize function must be maintained. As bone and soft tissue plastic reconstruction improves, better limb salvage results are also seen. A sural nerve injury can be found in 15% of surgically treated individuals; the risk of injury is minimized by a lower base L incision(4,21).

CONCLUSIONS

The calcaneus is the most commonly fractured tarsal bone, accounting for 2% of all fractures. Calcaneal fractures are bilateral in 5% to 10% and are usually related to fractures of the lumbar spine and other lower limb fractures caused by high-impact trauma. About 10% of calcaneal fractures are open, and neurovascular injuries are infrequent in calcaneal fractures. Calcaneal fractures are more related to high energy impacts that generate axial loading of the bone, however they can occur with any injury to the foot and ankle. The main characteristics of individuals affected with a calcaneal fracture are pain, swelling, widening, deformity, ecchymosis and functional impotence. To make the radiological diagnosis of calcaneal fracture in the first instance it is recommended to request an anteroposterior projection of the foot, lateral projection of the rearfoot, Harris axial projection and an ankle series; if necessary, a computed tomography can be performed. In practice, calcaneal fractures can be classified as intra-articular or thalamic and extra-articular; in addition, classification systems such as Sanders and Essex-Lopresti are used. Treatment is controversial. Even with adequate reduction and management, calcaneal fractures can become extremely disabling injuries, presenting a mutable prognosis with various types of functional limitation and pain. Currently, some factors have been found to be related to better outcomes, however, the literature comparing various methods of surgical versus conservative treatment show that surgical management has increased complication rates, however, it may lead to optimal functional outcomes in some individuals. Generally, the incidence of complications of calcaneal fractures is high and increases the worse the wound. Among the most common are calcaneal osteomyelitis, post-traumatic osteoarthritis, wound dehiscence, increased heel width, loss of subtalar mobility, chronic peroneal tendonitis and complex regional pain syndrome.

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Conflict of Interest Statement

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A COMPARATIVE STUDY OF SELF PERCEPTION AMONG SECONDARY SCHOOL STUDENTS

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ABSTRACT

The present study was carried out to study the impact of self-perception on secondary school students. A sample of 100 secondary school students from diverse backgrounds in Sonipat district was selected. The number of male and female students was kept same. For measurement of self-perception, Self-Perception Scale by Susan Harter (2012) was used. The descriptive method was used for the study. Mean, standard deviation, Coefficient of correlation and t-test were used to analyze the data. The result showed a positive correlation between self-perception of boys and girls students and also there was no significant difference between self-concept of boys and girls students.

INTRODUCTION

Self-perception usually refers how people view and understand their own view ideas, feelings, aptitudes and traits. People's perceptions of their own identity, value and ability are important in determining their behavior, worldviews and general well-being. It can be influenced by many factors, such as personal experiences, cultural and societal norms, feedback from others and social comparison. It plays crucial role in shaping individual's behaviors, beliefs and well-being. It can have a significant impact on various aspects of life, including self-esteem, self-confidence, self-confidence, self-management, self-motivation and decision making. Self-perception can affect our life positively and negatively both. A positive self-perception will lead to greater sense-worth, more confidence and belief that one has ability to achieve to their goals. Contrarily, a negative self-perception will result in low self-esteem, self-doubt and a lack of confidence in one's abilities. It is important to be noted that self-perception is not fixed, and it can change over time.

Elements of Self-Perception

Self-Identity: The fundamental aspect of one's self-perception, self-perception, self-identity deals with how one defines oneself. Personal values, beliefs, personality and roles that one identifies with are some of its components (examples: student, father, artist)

Self-Esteem: A person's overall assessment and sense of worth are referred to as their self-esteem. It involves one's self-worth and perception of themselves, including their self-assurance, self-acceptance, and self-respect.

Self-Image: Self-image refers to the mental image or view one has of themselves, including their physical characteristics,

skills and qualities. It covers how people perceive themselves and other people.

Self-Efficacy: It is the belief in one's ability to successfully accomplish specific tasks or goals. It involves the confidence in one's own skills, competence and effectiveness to handle various situations.

REVIEW OF RELATED LITERATURE

A study conducted by Dr. Monika, Meenaxi, Priyanka in 2022 found that boys of secondary school have higher self-concept compared to girls of secondary school. It was also found that girls of secondary school possess more social skills as compared to boys of secondary school.

A study conducted by Anthony T. Soares and Louise M. Soares found that students of elementary and secondary level possess positive self-concept; the results depend on the methodology of teaching.

Similarly, a study conducted by R. Melissa and D.S.W. Lavitt found that self-perception is strongly interrelated for girls and not for boys. Also, girls did not appear to value the competencies which they possess while holding in high regard those they felt they lacked.

JUSTIFICATION OF THIS STUDY

The study of self-perception related to secondary school students. The positive impact of self-perception in secondary school students. Students during their secondary education period had to face several problems, because of this their perception keeps on changing so it become important for all the



parents, teachers and others educated to develop a better self-perception among learners.

STATEMENT OF THE STUDY

“A Comparative Study of Self-Perception among Secondary School Students”

OBJECTIVES OF THE STUDY

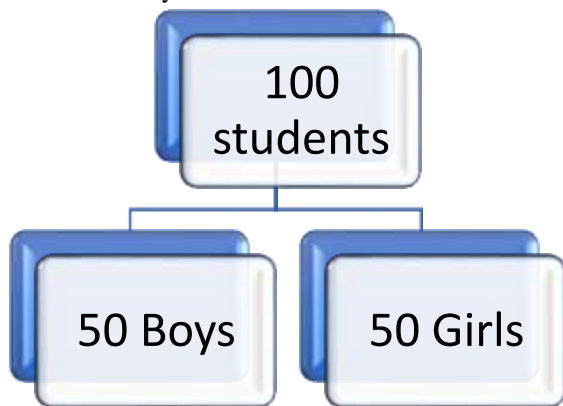
1. To compare the self- perception among boys and girls of secondary school students.
2. To find out the relationship of self -perception between boys and girls of senior secondary students.

HYPOTHESIS

1. There is no significant difference of self -perception among boys and girls of secondary school students.
2. There is no significant relation of self -perception among boys and girls of senior secondary students.

SAMPLE OF THE STUDY

A sample of 100 secondary school students of Sonipat district were selected randomly



VARIABLE USED IN STUDY

There is one variable in this study which is self-perception.

RESEARCH METHODOLOGY

This study falls under the category of descriptive research. A standardised tool was used for data collection. The students at secondary school completed a questionnaire which included various questions about self-perception. Students marked X in one box of each question. There is little negative type of statements whose scoring was done as 1,2,3,4, depending on the box which students have marked. Similarly, those statements which are positive in nature are marked as 4,3,2,1 as per the box chosen by the students.

TOOLS USED

Self-perception questionnaire by Susan Harter (2012)

STATISTICAL TECHNIQUES

- Mean
- Standard Deviation
- T-test
- Correlation

RESULTS AND DISCUSSION

Objective: To compare the self- perception among boys and girls of secondary school students

STUDENTS	Mean	S.D.	t-test value
BOYS	52.82	4.260	0.3730
GIRLS	51.98	4.688	

Table 1 shows the value of mean of boys is 52.82, the mean of girls is 51.98 and the standard deviation of boys and girls is 4.260 and 4.688 respectively and t- test value is 0.3730 which

shows that hypothesis “There is no significant difference of self -perception among boys and girls of secondary school students” is accepted.

Objective: To find out the relationship of self -perception between boys and girls of senior secondary students.

STUDENTS	Coefficient of Correlation
BOYS	0.075
GIRLS	

Table 2 shows that the coefficient of correlation between girls and boys is 0.075 which shows that the relation is positively weak. This means the hypothesis “There is no significant relation of self -perception among boys and girls of senior secondary students” is accepted.

CONCLUSION

The study showed that there is no significant relation to self -perception among boys and girls of senior secondary students.



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ENVIRONMENTAL MONITORING WITH MACHINE LEARNING

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ABSTRACT

The term "environmental monitoring" refers to the practice of keeping tabs on and assessing the state of both natural and built environments. The purpose of environmental monitoring is to gather information that may be utilized to spot patterns, hazards, and improvement avenues. Because they can analyse enormous volumes of data and identify complicated patterns that may not be clearly detectable using conventional methods, machine learning techniques may be particularly successful for environmental monitoring. The lack of a reliable method to gather complete data, and the overall lack of data openness, is the main problem with the status quo. These environmental data are often collected in siloed units, requiring time and money from environmental protection agencies before they can be made public. In this study, we'll look at how machine learning may be put to use in environmental surveillance. Two recent cases will be discussed briefly within the framework of our paper before we wrap things up.

1. INTRODUCTION

The review article highlights the challenges faced in developing trustworthy monitoring systems for environmental applications due to the extreme environments sensor platforms are exposed to. Discriminating between genuine data mistakes and apparent errors caused by natural phenomena is a complex task, making outlier identification in sensor data challenging. Governments worldwide are investing in Early Warning Systems (EWS) to detect and mitigate potential losses from natural catastrophes. Changes in land use, driven by urbanization, agriculture, and other factors, have profound impacts on global biodiversity, land functions, and the carbon cycle. The increasing global population is expected to further intensify the demand for land, posing sustainability challenges. Planners and policymakers must adopt purposeful land use strategies to address the growing demand for finite land supplies. Overall, the article highlights the importance of developing robust monitoring systems and implementing sustainable land use strategies to effectively manage environmental challenges and ensure long-term sustainability [1].

In this review article, the importance of data gathering and land use mapping for effective land use planning is emphasized. Sustainability indicators derived from this data can provide valuable insights for decision-making and problem-solving in land use planning, addressing economic, social, and environmental issues. Environmental monitoring is crucial to safeguard the environment and human health, particularly in relation to freshwater resources. Monitoring microbial assemblages and other indicators helps identify potential threats to human health,

such as bacterial contamination or harmful algal blooms. However, traditional monitoring methods are time-consuming and labor-intensive. The emergence of artificial intelligence (AI), specifically deep learning convolutional neural networks (CNNs), has improved object recognition and identification from image datasets, narrowing the gap between human and machine capabilities. By leveraging AI technologies, the monitoring process can be expedited, enhancing efficiency and accuracy in assessing environmental conditions. Overall, integrating data-driven approaches and AI technologies into land use planning and environmental monitoring can greatly enhance decision-making and contribute to sustainable land management practices. [2].

2. THE DRAWBACK OF TRADITIONAL ENVIRONMENT

The current setup faces two major problems: the inability to gather comprehensive data and the lack of openness around data. Organizations responsible for protecting the environment must invest time and money to collect environmental data from different sources before making it public. There is limited time for verifying the data's accuracy and reliability. Furthermore, the lack of communication and collaboration among departments renders the collected environmental protection data useless from a business perspective. However, advancements in big data and AI technologies offer solutions. These technologies enable the sharing and comparison of environmental data, promoting openness and transparency. Big data technology can efficiently store information gathered by each department and utilize the internet to facilitate public involvement and enhance



understanding of environmental agencies. AI has found widespread application in air pollution prediction and early warning systems. Nevertheless, for highly variable pollution concentrations, a single machine learning system may not be sufficient for monitoring. It is necessary to develop a comprehensive ambient air quality monitoring system and innovative approaches for making air quality decisions [3]. In the event of extremely variable pollutant concentrations, a single machine learning method is not sufficient for environmental monitoring.

Therefore, we can that there are several drawbacks of traditional environment monitoring systems, including:

- Limited coverage: Traditional environment monitoring systems are often limited in their coverage area. This means that they may not be able to monitor certain areas that are of interest [4].
- Expensive infrastructure: Setting up and maintaining traditional environment monitoring systems can be expensive due to the need for a large amount of infrastructure, including sensors, data loggers, and communication networks.
- High power consumption: Traditional environment monitoring systems often require a lot of power to operate, which can be a challenge in remote or off-grid areas where power may be limited.
- Limited scalability: Traditional environment monitoring systems may not be easily scalable, meaning that it can be difficult to add more sensors or expand the monitoring area [5].
- Limited real-time data: Traditional environment monitoring systems may have a delay in data transmission and processing, meaning that real-time data is not always available.

Data silos: Traditional environment monitoring systems often generate large amounts of data, but the data may be stored in different locations or in different formats, making it difficult to integrate and analyze.

3. WHAT EXACTLY IS MACHINE LEARNING?

Machine learning is a subfield of artificial intelligence that focuses on the creation of algorithms and statistical models that allow computer systems to learn from data and make predictions or judgments based on it. Machine learning aims to create systems that can enhance their job performance without being explicitly trained to do so [6]. There are three kinds of machine learning algorithms: supervised learning, unsupervised learning, and reinforcement learning. In supervised learning, the algorithm is trained using labeled data, which implies that the expected output is displayed alongside the input data [7]. The algorithm learns to predict the appropriate output based on the input properties. Unsupervised learning algorithms are trained on unlabeled data and are tasked with discovering patterns and structure in the data. Reinforcement learning is a kind of machine learning in which an agent learns how to act in a given environment to maximize a reward signal. Machine learning is used in a variety of applications, including

image and audio identification, natural language processing, predictive analytics, fraud detection, recommendation systems, and autonomous vehicles.

There have been many recent developments in the field of machine learning that can be useful in monitoring the environment effectively [8].

Deep Learning, Reinforcement Learning, Generative Adversarial Networks (GANs), Transfer Learning, Federated Learning

4. ENVIRONMENT MONITORING

Environmental monitoring refers to the process of collecting and analyzing data on various aspects of the environment, such as air quality, water quality, soil quality, and weather conditions [9]. Environmental monitoring serves the purpose of identifying and quantifying environmental changes, assessing the effectiveness of environmental policies, and evaluating the impact of human activities on the environment. Different monitoring programs focus on specific aspects, such as air quality or water quality. Various techniques, including remote sensing, satellite imaging, and on-the-ground sampling, are employed for environmental monitoring. The data collected through monitoring programs is utilized by government agencies, non-governmental organizations, and businesses to make informed decisions regarding environmental management and conservation. Technological advancements have significantly improved environmental monitoring, enabling better data collection, analysis, and interpretation. These advancements include remote sensing, geographic information systems (GIS), sensor technology, big data analytics, citizen science, and the Internet of Things (IoT). Environmental monitoring plays a crucial role in safeguarding natural resources and promoting sustainable management for future generations. [10]. Advancements in environmental monitoring include remote sensing, IoT, big data analytics, artificial intelligence (AI), and mobile apps. Remote sensing enables data collection on a large scale, such as tracking deforestation and monitoring crop growth. IoT devices connected to the internet provide real-time data on air and water quality, aiding resource management and pollution control. Big data analytics allows for analysis of large datasets identifying trends and patterns. AI algorithms analyze data to detect patterns, anomalies, and potential risks. Mobile apps enable crowd sourcing of environmental data. Machine learning can be applied to environmental monitoring for predictive modeling, image recognition, anomaly detection, classification, and time-series analysis. These advancements have improved our understanding of human impacts on the environment and our ability to mitigate and adapt to environmental changes. [11].

5. NEED FOR DETAILED MONITORING OF THE ENVIRONMENT

The need for detailed monitoring of the environment has become increasingly important in recent years due to various factors such as climate change, pollution,



deforestation, and the depletion of natural resources [12]. Here are some key reasons why detailed monitoring of the environment is necessary:

5.1 Conservation and Biodiversity: Detailed monitoring allows us to understand the distribution and abundance of species, their habitats, and any changes occurring within ecosystems. This information is crucial for effective conservation efforts and the protection of biodiversity.

5.2 Climate Change: Monitoring environmental parameters such as temperature, precipitation, sea level, and greenhouse gas concentrations helps us track and understand the impacts of climate change. This information is essential for developing strategies to mitigate and adapt to climate change and to assess the effectiveness of such measures.

Pollution Management: Monitoring the quality of air, water, and soil is essential for identifying pollution sources, assessing their impact on human health and ecosystems, and implementing appropriate pollution control measures.

5.3 Natural Resource Management: Detailed monitoring provides insights into the availability, distribution, and usage of natural resources such as forests, water, minerals, and fisheries. This information is critical for sustainable resource management and planning.

5.4 Disaster Management: Monitoring environmental conditions can help in predicting and responding to natural disasters such as hurricanes, floods, wildfires, and droughts. Timely and accurate data enable effective emergency planning, response, and recovery efforts [13].

5.5 Human Health: Monitoring environmental factors such as air quality, water contamination, and exposure to hazardous substances is vital for understanding the impacts on human health.

5.6 Policy Development: Detailed environmental monitoring provides scientific evidence and data that inform policy development and decision-making processes.

To achieve detailed monitoring, various technologies and methods are employed, including satellite remote sensing, ground-based sensors, drones, data analytics, and citizen science initiatives. Collaboration between governments, scientific institutions, environmental organizations, and communities is crucial for the success of environmental monitoring efforts. Overall, detailed monitoring of the environment plays a crucial role in understanding the state of our planet, identifying problems, and developing effective solutions to ensure a sustainable and healthy future. Effective monitoring programs require careful planning and implementation to ensure that data is accurate, reliable, and meaningful. Regular monitoring can help to track changes over time and identify trends that may require intervention. It can also provide early warning of potential environmental threats, such as natural disasters or

the spread of invasive species.

The integration of machine learning and AI with environmental issues has the potential to revolutionize our approach to addressing and mitigating environmental challenges. Here are a few key areas where machine learning and AI can contribute to environmental issues [14].

5.7 Environmental Monitoring and Conservation: Machine learning algorithms can analyze large datasets collected from various sources such as satellite imagery, sensors, and drones to monitor and assess environmental conditions. This technology can be used to track deforestation, detect changes in land cover, monitor water quality, and identify endangered species. By automating the analysis process, machine learning can provide real-time insights and help conservation efforts.

5.8 Environmental Decision-Making: AI can assist policymakers and organizations in making informed decisions related to environmental management. By analyzing vast amounts of data and considering various factors, AI algorithms can provide insights, model scenarios, and support evidence-based decision-making processes.

6. CONDUCTING EFFECTIVE ENVIRONMENT MONITORING

Conducting effective environment monitoring with the help of machine learning can significantly enhance the accuracy and efficiency of data analysis [15]. To implement environmental monitoring using machine learning, follow these steps:

6.1 Define the Problem: Clearly identify the environmental factors you want to monitor and the specific problem you want to solve, such as air quality, water pollution, or climate change.

6.2. Data Collection: Gather relevant data from sources like sensors, satellites, weather stations, or existing databases. Ensure the data is reliable, consistent, and covers a significant time period.

6.3 Data Preprocessing: Clean the collected data by removing outliers, handling missing values, and normalizing it for accuracy.

6.4 Feature Engineering: Extract meaningful features from the data that can provide valuable insights, such as pollutant levels, weather conditions, and geographical information.

6.5 Model Selection: Choose an appropriate machine learning model based on your problem and data characteristics, such as decision trees, random forests, support vector machines (SVM), or neural networks.

6.6. Training the Model: Divide the cleaned data into a training set and a test set. Train the model using the training



set to identify trends and connections within the data.

- 6.7 Model Evaluation:** Assess the trained model's performance using the testing set, using metrics like accuracy, precision, recall, and F1 score. Fine-tune the model if necessary.
- 6.8 Deploying the Model:** Deploy the model in a real-time or near-real-time environment for continuous monitoring, integrating it into software applications, cloud-based platforms, or IoT systems.
- 6.9 Monitoring and Updating:** Continuously monitor the model's performance and collect new data for periodic updates. Retrain the model with fresh data as needed to adapt to changing environmental conditions.
- 6.10 Interpretation and Action:** Analyze the model's predictions to generate actionable insights. Use the results to make informed decisions, implement interventions, or raise awareness about environmental issues.

In addition to environmental monitoring, machine learning can also be applied to climate modeling and prediction, energy efficiency and resource management, natural disaster management, waste management and recycling, and ecosystem restoration and biodiversity conservation [16]. Collaboration with environmental scientists and stakeholders is crucial for successful implementation. Remember, the effectiveness of environmental monitoring relies not only on machine learning but also on data quality and domain expertise.

7. RECENT EXAMPLES

Now, before concluding our paper, we'll analyze 2 recent examples where machine learning was adopted into one of the aspects of environment monitoring-

7.1 The Urban Flood

Project is an initiative funded by the European Union (EU) that aims to develop and implement innovative technologies for monitoring and managing flood risks in urban areas. The project focuses on utilizing advanced sensor networks, data analytics, and real-time information systems to improve flood forecasting, early warning systems, and emergency response strategies [17]. The Urban Flood project focuses on environment monitoring in urban areas to address flood risk management. It utilizes a network of sensors to monitor environmental parameters like rainfall intensity, river water levels, and soil moisture. The project aims to develop advanced forecasting models and early warning systems by integrating data from multiple sources. Decision support systems are also being developed to assist emergency response teams and policymakers during flood events. The project considers climate change adaptation and seeks to assess the potential impact of climate change on urban flood risks. Overall, the Urban Flood project contributes to mitigating environmental impacts and fostering sustainable urban development.

7.2 The Smart Monitoring of Water Pollution (SMWP)

System is another advanced technology that uses sensors, data analytics, and communication technologies for real-time monitoring and management of water pollution. The system provides accurate and timely information about the quality and condition of water bodies, enabling prompt actions to mitigate pollution and protect water resources. [18].

7.3 The SMWP system typically consists of the following components

7.4

7.3.1 Sensor Network: It includes a network of sensors deployed in different water bodies such as rivers, lakes, and oceans. These sensors measure various parameters related to water quality, including temperature, pH level, dissolved oxygen, turbidity, conductivity, and the presence of contaminants like heavy metals or harmful chemicals [25].

The Smart Monitoring of Water Pollution (SMWP) system involves data collection and transmission through a sensor network, with data being sent to a central server or cloud-based platform. Advanced algorithms and machine learning techniques [19-24] are applied to analyze the collected data, identifying patterns, trends, and anomalies in water quality. Real-time monitoring capabilities allow stakeholders to access data and receive alerts when pollution levels exceed limits or significant changes occur. User-friendly interfaces and dashboards visualize the data for easy interpretation. The system can be integrated with existing water management infrastructure, enabling automation of processes and optimization of water treatment and allocation based on real-time pollution data.

Overall, the Smart Monitoring of Water Pollution (SMWP) system plays a crucial role in enhancing water quality monitoring and management, aiding in pollution prevention, and supporting sustainable water resource management practices.

8 CONCLUSION

In conclusion, combining big data and artificial intelligence technologies has enormous potential for addressing urgent environmental issues and advancing sustainable management and conservation initiatives. The study of vast and varied environmental datasets is made possible by machine learning algorithms, making it easier to spot trends, abnormalities, and threats. These algorithms are essential for environmental modelling and forecasting because they make it possible to predict future environmental conditions. Machine learning boosts productivity and efficacy in environmental monitoring operations by automating data processing and enabling real-time monitoring. However, to guarantee the dependability and accuracy of machine learning models, significant consideration must be paid to data quality, model validation, and continual improvement. The ethical application of machine learning in environmental monitoring, as well as transparency, accountability, and



collaboration between domain experts and data scientists, are crucial. In general, machine learning has the power to completely transform environmental management by delivering data-driven insights and predictive capabilities for well-informed decision-making and proactive environmental preservation.

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ENVIRONMENTAL SUSTAINABILITY WITH ARTIFICIAL INTELLIGENCE

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ABSTRACT

This paper presents and explores How to improve Environmental sustainability with the help of Artificial Intelligence (AI). This study evaluates the potential environmental benefits of AI adoption, such as reductions in climate change, agriculture, ocean health, water resources, weather forecasting, and Disaster resiliency. Upon conducting a thorough analysis of the available literature, it was found that there is a research deficiency in the utilization of artificial intelligence and decision support systems, as well as optimization models. This study employs qualitative analysis to explore sustainable uses of AI and the environmental impact of AI. It emphasizes the importance of promoting environmental sustainability through AI and proposes an "Environmental sustainability by AI" approach as a prerequisite for developing transparent, responsible, and human-centered AI systems. The study primarily focuses on identifying ways in which AI can be utilized for sustainable environmental practices, with a particular emphasis on the role of AI in promoting environmental sustainability. This study has some limitations, one of which is its limited scope. The paper does not provide an extensive analysis of global environmental policies, which could potentially identify areas for cooperation or common ground. Additionally, the study's focus on environmental sustainability means that it neglects the economic and social aspects of sustainability, which could be further explored. The study can aid stakeholders in comprehending global efforts to enhance environmental sustainability through the implementation of AI. Additionally, as the technology is still in its nascent stage, this study can serve as a catalyst for promoting a "sustainable environment" approach to the development of AI technologies and their impact on the environment.

KEYWORDS: Sustainable Environment, Artificial Intelligence, Environmental sustainability, Environmental sustainability with AI

1. INTRODUCTION

The 21st-century global environmental challenges have highlighted the importance of Artificial Intelligence (AI) as a crucial tool to tackle sustainability issues [1]. Initially proposed by John McCarthy in 1956, AI refers to the science and engineering of developing intelligent machines. AI primarily falls under the field of computer science, and its effectiveness in addressing environmental issues relies on its ability to incorporate environmental problem-solving techniques [2].

According to Poole et al.[3], the intelligence exhibited by sophisticated machines, in contrast to the natural intelligence of humans and animals, can be referred to as AI. Wang and Srinivasan [4] define AI as a field of scientific and engineering knowledge that aims to create machines that are as intelligent as humans. Nishant et al. [5] and Duan et al. [6] note that AI machines learn from experience as they perform tasks assigned by humans, adapting to new inputs and addressing environmental challenges.

In our present digital era, the limitations of human thinking have been expanded through AI, enabling intelligent machines with artificial brains to complement human cognition [7]. The challenges of achieving environmental sustainability are

complex, but AI can simplify the process by aligning the interests of people and prioritizing sustainable practices [8]. Sustainability is a multifaceted concept that encompasses the environment, economy, and society, and according to the UN document "Our Common Future" (also known as the Brundtland Report), sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". [10]

According to Morelli [11] and Nishant et al. [12], environmental sustainability means meeting the resource and service needs of both present and future generations without compromising the health of the ecosystem. Unfortunately, the world is currently facing a critical state with regards to the effects of global warming and climate change [13], making it imperative to take action and adopt environmentally friendly and sustainable products [14]. Addressing environmental challenges such as land degradation and climate extremes requires innovative and advanced AI solutions [15]. The intersection of AI and environmental sustainability can be broadly categorized into four key areas, including sustainable agriculture, conservation of environmental resources, waste and

pollution management, and pollution monitoring and remediation [16, 17].

Jha et al. [18] note that the development and use of artificial intelligence are crucial in achieving environmental sustainability due to its effectiveness over the past 50 years. According to Nishant et al. [19], the literature on AI for environmental sustainability spans across various fields, including biodiversity, water, energy, and transportation, although many other fields are continuously evolving. While

practical applications of AI in transportation and biodiversity have been observed in advanced countries, such as waste collection through advanced routing plans and wildlife conservation for enhanced biodiversity, there is still a need for more research on the use of AI in these areas [20]. The relative lack of literature on how AI can be used to address environmental challenges in biodiversity, water, energy, and transportation is a critical research gap that needs to be addressed to achieve the Sustainable Development Goals (SDGs), as illustrated in Figure 1.



Fig. 1 Sustainable Development Goals (SDGs)

Nowadays IT industries on boom, because IT Industry automates works and a small team manage everything that's why it is on the top. AI is increasingly being recognized as one of the most significant technological innovations in our era [22]. Basically, AI refers to computers or machines that attempt to imitate mental activities related to human intelligence such as problem-solving and learning processes [23]. The potential of this area extends far beyond its current focus on artificial narrow intelligence and includes two possible future models: artificial general intellect and artificial super brainpower [24,25,26]. This suggests that the technology has already advanced significantly.

AI has already made its mark in various sectors including banking, finance, marketing, agriculture, healthcare, safety systems, space exploration, robotics, and transportation technology [40-45]. The use of AI is also seen in the management of city transport systems with self-driving vehicles [27-30], and in the deployment of robots to serve in restaurants and fix urban infrastructure [31-32]. Additionally, there are advanced invisible AI platforms that are capable of governing multiple urban domains, including traffic, safety, and air quality, which are referred to as Urban Intelligent Platforms (UIP). These UIPs are currently embodied in the infrastructures and technologies of urban spaces, operating autonomously. [33] [34] [35].

Climate change is broadly accepted as a major threat by the scientific community. This point is highlighted by a recent declaration made by over 11,000 scientists.

Climate change is a pressing and grave issue that constitutes an emergency. Extreme weather conditions, drought, wildfires, flooding, and rising sea levels are among the effects of climate change that are already visible [36]. Immediate action is crucial because the impact of climate change will exacerbate if we fail to Address Climate Change Now!

1.1 Research Gap

The existing literature on AI for environmental sustainability covers various fields such as biodiversity, water, energy, and transportation. However, there is a relative lack of research on the practical applications of AI in these areas, particularly in addressing environmental challenges. While some practical applications have been observed in advanced countries, such as waste collection through advanced routing plans and wildlife conservation for enhanced biodiversity, there is still a need for further exploration and investigation.

The research gap lies in the limited understanding of how AI can effectively be utilized to tackle environmental challenges in the fields of biodiversity, water, energy, and transportation. More research is needed to identify and develop innovative AI solutions that can contribute to achieving the Sustainable Development Goals (SDGs) in these areas. Closing this research gap will help bridge the knowledge and implementation divide, enabling the effective use of AI to address environmental sustainability challenges across multiple sectors.



2. METHODOLOGY

This paper provides a review of how artificial intelligence can contribute significantly to achieving environmental sustainability in various areas such as biodiversity, energy, transportation, and water. Monitoring plays a crucial role in the use of artificial intelligence for environmental sustainability. Therefore, employing artificial intelligence can help improve the current state of environmental sustainability.

With AI gaining more popularity, it has the potential to be utilized in various industries including environmental sustainability. As the field of AI continues to evolve, companies with significant environmental impacts can harness its power to make positive changes. This is a crucial moment for AI, as advancements in Big Data, Hardware, and AI Algorithms have combined to enable major changes to our daily lives. Thanks to these advancements, saving the planet (including the ocean) no longer feels as difficult as it once did!

In this research, we will examine five distinct methods by which artificial intelligence can be used to improve the current status of environmental sustainability.

2.1 Renewable Energy & Clean Fuels

Artificial intelligence has the potential to enhance the management of renewable energy by utilizing predictive capabilities and intelligent grid systems. For example, it can improve the efficiency of renewable energy production by providing more accurate rainfall predictions, reducing costs, and minimizing carbon pollution. Additionally, AI can optimize energy storage, efficiency, and delivery operations, and improve the reliability and integration of renewable energy sources. These advancements can lead to dynamic pricing and trading, responding to demand fluctuations.

IBM has previously utilized AI to improve their rainfall prediction accuracy, resulting in a 30% improvement in their forecasts. The outcomes showed improved operation of their facilities, increased production of renewable energy, and decreased carbon emissions.

2.2 Electric Vehicles

With the increase in companies such as Tesla and the rise in gas prices, more and more companies are paying close attention to the demand for Electric Vehicles (EVs). In 2021, gas prices reached their highest average nominal price since 2014 due to rising crude oil prices and increased demand for gasoline. The average U.S. retail price of gasoline is currently at \$3.01 per gallon in 2021, and this price has continued to increase. The environmental advantages of transitioning to EVs are significant and include reducing traffic and air pollution, improving energy supply logistics such as transportation of goods, and enabling more independent driving capability.

Electric vehicles (EVs) offer significant environmental benefits, primarily in reducing their impact on the environment. Buses are known to be a major source of climate change due to their greenhouse gas (GHG) emissions, which can also lead to adverse health effects such as respiratory problems. According to the Environmental Protection Agency (EPA), EVs produce lower GHG emissions over their lifetime, including both tailpipe and upstream emissions. Moreover, completely electric

vehicles emit zero tailpipe emissions, which further reduces their environmental impact.

2.3 More Conservation of Natural Resources

According to a study released by the Organization for Economic Co-operation and Development (OECD), a staggering 62 billion tons of natural resources such as minerals, wood, and fossil fuels are extracted from the earth every year. Even more alarming is the fact that 20 percent of these resources are completely wasted, highlighting a major issue with resource efficiency.

Metropolises have become a major hub for excessive consumption of natural resources. With more than half of the world's population residing in urban areas, this trend is expected to continue. However, the rapid expansion of cities has resulted in significant environmental challenges, especially in these regions.

Smart LED lighting has been a popular method for conserving natural resources, particularly in the area of road lighting. In comparison to traditional forms of lighting, Smart LED lighting uses energy more efficiently and has a longer lifespan.

Smart Grids, the technology behind Smart LED lighting, can adjust the lighting conditions to be dimmed or brighter. Smart Grids, also referred to as "electricity with intelligence" is an energy-efficient, secure, and reliable electrical grid system. It includes various energy-saving measures such as renewable energy sources, smart devices, and appliances.

2.4 Sustainable Land Use

By integrating artificial intelligence with satellite imagery, it is possible to detect changes in land use, vegetation, timber cover, and the effects of natural disasters. AI-powered agriculture through robotics allows for early detection of crop conditions and issues.

Automated corrective measures, automated data collection, and decision-making processes are integrated into this system. It streamlines agricultural inputs and outputs based on energy and demand, leading to improved adaptability to climate changes, increased resource efficiency of the industry, and a reduction in the use of water, pesticides, and fungicides - all of which have negative impacts on critical ecosystems. This system also helps to address issues such as crop conditions and diseases through AI-driven precision farming and robotics.

2.5 Pollution Monitoring and Early Detection

Air pollution is the fourth biggest threat to humanity, with 92% of the global population residing in areas with dangerous levels of pollution. Despite its widespread impact, air pollution tends to be an overlooked issue. Many parts of the world suffer from significant levels of air pollution, making it unsafe to spend prolonged periods of time outdoors.

Air purifiers with integrated artificial intelligence systems can now monitor real-time air quality and environmental data and adjust filtration effectiveness accordingly. In urban areas, AI-powered simulations can alert people to pollution levels in their area. This enables earlier detection of pollution sources.



Additionally, data collected from vehicles, sensors, and cameras can help improve air pollution index in the future.

For the Environment group, 25 targets [37] were identified where AI can act as an enabler. AI can help in the conservation of the environment by analyzing large-scale interconnected databases to develop common strategies [38-39]. AI advances can aid in understanding climate change and modeling its possible impacts, supporting low-carbon energy systems with high integration of renewable energy and energy efficiency, which are essential for addressing climate change. AI can also help in improving the health of ecosystems by identifying oil spills and combating desertification. However, the high-energy requirements for AI operations, especially if non-carbon-neutral energy sources are used [46], can undermine efforts to achieve SDG 13 on climate action. Moreover, increased access to AI-related information on ecosystems may lead to over-exploitation of resources, although such abuse has not been adequately proved. These issues are further discussed in the gaps in AI research.

3. RESULTS AND DISCUSSION

Artificial Intelligence (AI) has become a crucial area in tackling critical environmental sustainability issues such as biodiversity, energy, transportation, and water management. Biodiversity research has utilized machine learning and natural language processing outcomes to predict ecosystem services. AI can be a powerful tool in mitigating climate change. For instance, AI-powered buses can cut emissions by 50 percent by 2050 by identifying the most efficient routes. The use of AI in agriculture results in improved yields, as demonstrated by peanut growers in India, who achieved a 30 percent increase in crop production by leveraging AI technology.

4. CONCLUSION

My proposal is that Sustainable AI should prioritize sustainable development by focusing on the interconnections between AI innovation and equitable resource distribution, between the environment, society, and economy. Although this paper does not address each pillar of sustainability (i.e. social, economic, environmental) in relation to sustainable AI, it aims to encourage collection of ideas, policymakers, AI ethicists, and AI innovators to consider the environment - to remember that there are environmental consequences associated with AI.

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THE EXTENT OF IMPLEMENTATION OF COA CIRCULAR NO. 2012-001 TO DOST-ITDI EMPLOYEES: AN ASSESSMENT

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ABSTRACT

This study aimed to assess the extent of implementation of COA-Circular 2012-001 to DOST-ITDI employees. A survey was carried out among (130) one hundred thirty respondents representing the employees of DOST-ITDI located at DOST Compound, Bicutan, Taguig City. With the help of a Statistician, the researcher utilized SPSS to analyze the gathered data. Pearson-r Correlation and Chi-Square, T-test and Two-tailed Test are used to analyze the relationships among the variables. Results showed that the level of implementation among the employees was verbally interpreted to as great extent in terms of awareness, information dissemination and perceived function.

Moreover, the results showed that the level of practice among the employees was verbally interpreted as moderate regarding financial claims for personnel services, maintenance and operating expenses and capital outlay. Additionally, it was revealed that Coordination, processing time, and Initiative moderately affect implementation. Furthermore, it was found out that the demographic profile of the respondents has no significant relationship with the extent of performance and practice of the COA Circular 2012-001.

Research also discusses the effectiveness and efficiency of the agency in providing quality services to the employees. As mentioned earlier, it offers valuable insights for the agency in improving the implementation, their awareness, knowledge and perception of the circular.

KEYWORDS: Awareness, Documentary Requirements, Effectiveness, Efficiency, Information Dissemination, Perceived Functionality

INTRODUCTION

Every government or private organization has been practicing a shared culture of implementing different duties and responsibilities regardless of one's nature and focus. These responsibilities include documented transactions from one department to another, which requires common knowledge of the process flow of Implementation anchored as per mandatory and regulatory requirements outlined in the Philippines. All government organizations were guided by COA Circular No. 2012-001, entitled revised documentary requirements for everyday government transactions, which serves as a guide for the personnel in different departments for budgeting, approval of financial claims and liquidation process. DOST-ITDI adheres to this in checking the legality and compliance of each financial transaction implemented by the agency since its issuance date on June 2012.

Changes in one's organizational practice will be significantly affected by characteristics of applied innovation, environmental settings and the work process of Implementation which requires a framework of performance and measurement of factors in implementing innovative strategies seriously. Integrating specific rules and regulations in organizational

workflow still depends on the setting in the field of work. With this, the assessment of administrative Practice is vital to determine the alignment of the implementation plan to organizational goals and Memorandum. Castor et al. (2022)[1] state that reviews in one's approach is one of the methods in identifying the effectiveness of Implementation to the attainment of organizational goals and satisfaction of its target recipient of services offered. With the constant evaluation of Practice, the organization determines the hindrances to effectively exercising rules and regulations and the course of action to take.

In addition, different perspectives of employees sought to infuse among them the importance and the knowledge of the implementation procedure of the Memorandum that significantly affects the uniformity of service and attainment of the organizational objectives. Even in one government office, the department may integrate memorandums differently in their work processes as they perceive it differently applied to their nature of work.

With the government office mechanism of workflow and integration of Memorandum regarding the COA Circular No. 2012-001 and with the limited studies conducted concerning, the researcher developed this study to determine the Extent of



Implementation to employees from different divisions and their integration to work practices as input to the development of action plan.

OBJECTIVE OF THE STUDY

Given the agency’s strict implementation of the circular and with the different level of perspective and understanding of each individual, DOST-ITDI is still experiencing gaps as evidence by the FMD’s records of the number of disbursement vouchers returned to the end-user due to lacking of attached documentary requirements thus prolonging the processing time for each financial transaction.

The researcher believes that the study on extent of implementation of COA Circular No. 2012-001 is important in improving organization and office implementation of disbursement process to provide quality service among employees. This study will provide evidence-based data that can be utilized in the development of a well-designed action plan and work process flow related to. The results of the study can also provide the latest information as to the problems encountered by every office relating to with.

MATERIALS AND METHODS

The study will employ the quantitative-descriptive research method to accomplish the study’s objective. Quantitative research methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques.

Descriptive statistics is concerned with the gathering, classification, and presentation of data and collection of summarizing values to describe group characteristic method. A descriptive research is about collecting information through data reviews, surveys, interviews, or observation. It involves either identifying the characteristics of an observed phenomenon or exploring possible associations about two or more phenomena. Descriptive method of research is appropriate whenever the objects of any class vary among themselves and one knows the extent to which condition altering among the subject.

RESULTS AND DISCUSSION

Demographic Profile of the respondents

Population and Sampling Technique

The researcher employed the purposive sampling technique in selecting the respondents of the study. According to Crossman (2018)[2], purposive sampling technique is a non-probability sampling that is based on the ‘purpose’ of the study. The researcher can choose whoever satisfies the criteria he sets for his study. It is also known as judgmental, selective, or subjective sampling. The respondents of this study will be the government employees of DOST-ITDI who have direct involvement on the preparation of financial claims, such as Special Disbursing Officers (SDO) of different projects and divisions, employed in Bids and Awards Committee Section, Human Resources Section, Procurement Section, Finance and Management Division and other end-user that frequently process financial claims based on the records of the Accounting Section.

Data Collection Procedure

The primary instrument that was used for gathering the needed data for this study was a set of questionnaires which help to gather information that answers the problem. The questionnaire will consist of four parts, the first part of the questionnaire will indicate the demographic profile of the respondents, second part will be the researcher-made survey instrument that include questions that will assess the extent of implementation of COA Circular No. 2012-001 in terms of Level of Awareness, Level of Information Dissemination and Level of Perceived Functionality, the third part will includes questions that will assess the extent of practice of the DOST-ITDI employees on COA Circular No. 2012-001 in terms of financial claims for Personnel Services, Maintenance and other operating expenses and Capital Outlay and the last part includes questions that will assess the factors that influence the implementation of COA Circular No. 2012-001.

Descriptive statistical tools such as mean and standard deviation were employed to describe the extent of implementation, practice and factors that affects the implementation of COA Circular.

Pearson-r Correlation Coefficient (Pearson-r) and Chi-Square are used to test the relationship between the respondent’s demographic profile to the extent of implementation, practice and factors that affects the implementation.

Table 1 Respondents Profile According to Age

Age	n	%
31-39	59	45
22-30	33	25
40-48	18	14
49-57	10	8
58-65	10	8
TOTAL	130	100



As seen on the table 1, most of the respondents are aged 31-39 years old or middle-aged employees. It means that most of the respondents are of the age where the ability to acquire knowledge and integrate with the agency's processes are at the highest level, leading to good job performance. Widodo et al. (2022) [3] stated and proved that the job performance of employees increases in the first entry in the industry but decreases among older

employees, particularly in problem-solving, learning and speed. On the contrary, Viviania (2022)[4] proved that productivity among older and younger employees has no significant differences. The study demonstrates that more senior employees perform better than younger employees regarding strategies employed in the work fields and experience obtained.

Table 2 Respondents Profile According to Sex

Sex	N	%
Female	85	65
Male	45	35
TOTAL	130	100

The table 2 presented that out of the total respondents of 130, 85 or 65% are females while 45 or 35% were males. Results denote that female employees were leading the agency. Thus, most of the higher position was mostly occupied by them.

According to García-González et al. (2019)[5], it might make it easier for women to advance to senior academic positions.

Table 3 Respondents Profile According to Educational Attainment

Educational Attainment	n	%
College Graduate	54	42
Master's Degree Holder	34	26
With Units in Post Graduate	32	25
College Undergraduate	4	3
Doctorate Degree Holder	4	3
High School Graduate	2	1
Elementary Graduate	0	0
High School Undergraduate	0	0
TOTAL	130	100

As seen on the table 3, 54 or 42% were college graduate, 34 or 26% were Masters' Degree Holder, 32 or 25% were had units in Post-Graduate, 4 or 3% are Doctorate Degree Holder, four 4 or 3% are College Undergraduate and lastly, 2 or 1% were High-School Graduate. Most of the respondents are College graduates; thus, employers expect them to perform excellent work, including adhering to and integrating the agency's policies into their daily

work. Aldino & Susanti (2022) [5] proved that a good education level significantly impacts an employee's performance and career advancement. The education of the acquired skills is beneficial for office work, and a high level of education will result in excellent performance in occupations sought according to educational requirements.

Table 4 Respondents Profile According to Position Designation

Position Designation	n	%
Research and Development Division	57	44
Technical Service Division	32	25
Technical Support Division	41	31
TOTAL	130	100

As gleaned from the table 4, out of the one 130 total respondents, 57 or 44% were from Research and Development Division, while, 41 or 31% were from Technical Support Division and lastly, 32 or 25% were from Technical Service Division. These denoted that most respondents were from the Research and Development Division, where the agency's mandate is being accomplished. With this, they are the agency's top priority

regarding promotions, recognition and budget approval. Thus, they are expected to perform well on their duties and responsibilities. according to Szromek et al. (2020)[6] operational staff express higher level of satisfaction than people who performs administrative function since their work were recognized and being honoured with respect to employee's seniority

**Table 5 Respondents Profile According to Years of Work Experience**

Years of Work Experience	<i>n</i>	%
2 years to 8 years	72	60
9 years to 15 years	30	25
16 years to 22 years	11	9
23 years to 29 years	7	6
30 years and above	0	0
TOTAL	130	100

Table 5 presents the respondents' demographic profile according to years of work experience, Out of the 130 total respondents, 82 or 63% had 2-8 years of work experience, 30 or 23% had 9-15 years of work experience, 11 or 8% had 16- 22 years of work experience and 7 or 6% had 23-29 years bracket. It can be observed that most of the respondents are with 2 to 8 years work experience, which implies that there was a relatively young

work force among the agency. Wahyudi (2018)[7] proved that length of work experience has a significant relationship on job performance. Experience becomes an indicator of expertise because it blends with knowledge and complex practices resulting to an excellent job performance. It is also proven that work experience relevant to job shapes performance.

Table 6 Extent of Implementation in terms of Level of Awareness

Indicative Statement	<i>Mean</i>	<i>SD</i>	Verbal Interpretation
1. Documentary requirements are important in checking the compliance and legality of financial claims.	4.12	1.02	Great Extent
2. Returned financial claims will make the processing period longer.	3.98	1.21	Great Extent
3. Financial claims that lack the required documentary requirements will not be processed and will be returned to end-user.	3.95	1.10	Great Extent
4. There is a list of documentary requirements to be complied in processing specific financial claims.	3.86	1.09	Great Extent
5. Compliance with the documentary requirements limits the issuance of audit findings.	3.83	1.21	Great Extent
6. The Finance and Management Division strictly implements the Circular.	3.73	1.15	Great Extent
7. The Circular provides list of documentary requirements to be complied for financial claims.	3.08	1.22	Moderately Extent
8. There is existing COA Circular No. 2012-001 "Revised Documentary Requirements for	3.01	1.19	Moderately Extent
9. Common Government Transactions" and I am aware of its contents.			
Overall Mean	3.69		Great Extent

As presented on the table, an overall mean of 3.69 with verbal interpretation of great extent demonstrate that the respondents have high level of awareness on the implementation of COA Circular No. 2012-001. These inferred that the respondents were highly aware of the importance of documentary requirements in checking the compliance and legality of the financial claims; however, they were moderately knowledgeable on the existence and contents of the Circular. it denoted that the respondents highly complied with the validation of financial

claims with moderate awareness that there was a Circular for proper guidelines and a list to follow. As stated by Munez (2015) [8], every payout must have a complete set of supporting paperwork, as required by law, to validate the claim. The fundamental specifications apply to all payments made by national government institutions. Moreover, Donayre et al. (2020) [9] stated that the more, the higher the personnel's awareness of the policies' conditionalities and the processes involved, the more they are likely to comply with the requirements.

**Table 7 Extent of Implementation in terms of Level of Information Dissemination**

Indicative Statement	Mean	SD	Verbal Interpretation
1. A Memorandum was issued on the compliance with the COA Circular.	3.50	1.10	Great Extent
2. Inquiries on the deficiencies noted are addressed immediately.	3.44	1.02	Great Extent
3. The copy of the Circular is accessible any time.	3.41	1.09	Great Extent
4. The Finance and Management Division distributes list of documents to be accomplished ahead of time.	3.32	1.10	Moderate Extent
5. To ensure the uniformity and correctness of every document submitted by the division, meetings on queries are conducted in the Accounting Office.	2.95	1.16	Moderate Extent
6. The agency conducts orientation on the list of documentary requirements.	2.77	1.14	Moderate Extent
7. Different divisions of the agency conduct personnel orientation on every change in processes.	2.54	1.15	Little Extent
8. The circular is discussed to every employee upon the first day of duty.	2.31	1.20	Little Extent
Overall Mean	3.03		Moderate Extent

Table 7 stated an overall mean of 3.03 with a verbal interpretation of moderate extent. It was concluded that the agency implements a moderate level of information dissemination as perceived by the moderate level of information known by the respondents. It can be assessed that most of the respondents primarily got the information through the memorandum issued and circulated among the employees, rather than the discussions during new employee orientation. According to Knowledge-to-Action Model, Creation of Knowledge tools and

products, are the most refined form of knowledge, as it uses synthesized knowledge to present evidence in concise and user-friendly formats tailored to meet end-user informational needs. These include things like clinical practice guidelines, decision aids and videos. Njoku & Eseitonghe (2022)[10] proved that new employee Orientation program imparts crucial information, practical skills, and competencies. informs a new employee about the culture, politics, history, objectives, and language of the company.

Table 8 Extent of Implementation in terms of Level of Perceived Functionality

Indicative Statement	Mean	SD	Verbal Interpretation
1. Submission of complete and appropriate documentary requirements ensures the legality and validity of utilization of public funds.	4.24	0.94	Very Great Extent
2. Complete submission of document will minimize the time and effort of each department in processing financial claims.	4.21	0.97	Very Great Extent
3. Complying with the documentary requirements helps achieved high disbursement utilization rate.	4.20	0.92	Very Great Extent
4. Properly accomplished documentary requirements are easily approved for disbursement.	4.12	1.04	Very Great Extent
5. Complying with the documentary requirements facilitates the processing.	3.97	0.93	Great Extent
6. Complying with the documentary requirements limits the issuance of audit findings.	3.96	0.98	Great Extent



7. The list of documentary requirements enumerated on the COA Circular No. 2012-001 is easy to comply.	3.35	0.89	Moderate Extent
8. There is a staff in charge of completing the documentary requirements	3.19	1.18	Moderate Extent
Overall Mean	3.91		Great Extent

As seen on table 8, the extent of implementation as to Level of Perceived Functionality have an overall mean of 3.91, which provided a verbal interpretation of great extent, which means that the respondents seen the circular with a high level of perceived functionality. It was also inferred that respondents perceived the circular to be very highly functional in ensuring the legality and validity of utilization of funds and minimize processing time that aids in the achievement of target rate of utilization. However, it concluded that not all the Circular contents were easy to comply with and not all divisions assigned

staff to complete and process documentary requirements, thus, a hindrance on information that affects the functionality of the Circular to them. Mustika et al. (2022)[11] revealed that the desire to impart information is positively and significantly influenced by one's belief in one's ability to do so and their delight of being of service to others. As well as having a positive and significant impact on information sharing behavior, knowledge sharing self-efficacy, enjoyment of helping others, and intention to share knowledge all play a role.

Table 9 Extent of Practice in Terms of Personnel Services

Indicative Statement/Particular	Mean	SD	Verbal Interpretation
1. I have accomplished, processed or at least checked financial claims for Personnel Services	3.24	1.26	Moderate Extent
2. Immediate compliance on the deficiencies to avoid longer processing time.	3.75	1.07	Great Extent
3. Carefully checked for completion of all the requirements (e.g. correct forms and complete signatures)	3.69	1.11	Great Extent
4. Inquiry on the deficiencies is immediately entertained by the concerned division/s.	3.69	1.09	Great Extent
5. Returned financial claims include notes and explanation on the deficiencies.	3.62	1.15	Great Extent
6. Documentary requirements are being checked based on the Circular before processing of financial claims.	3.60	1.15	Great Extent
7. I have accomplished, processed or checked documentary requirements such as:			
a. Approved Daily Time Record (DTR)	3.85	1.28	Great Extent
b. Accomplishment Report	3.93	1.20	Great Extent
c. Obligation Request Status (ORS)/ Budget Utilization Request Status (BURS)	3.60	1.25	Great Extent
d. Certifications (e.g. First Claim, Bonus, Allowances etc.)	3.26	1.45	Moderate Extent
e. Certified True Copy of Contract	3.28	1.48	Moderate Extent
f. Certified true copy of Oath of Office	2.85	1.50	Moderate Extent
g. Statement of Assets, Liabilities and Net Worth (SALN)	3.63	1.40	
h. Clearance from money, property and legal accountabilities	3.11	1.49	Moderate Extent
i. Certified true copy of duly approved appointment	2.86	1.49	Moderate Extent
j. Certificate of Assumption	2.82	1.48	Moderate Extent
k. Notice of Assumption	2.77	1.47	Moderate Extent
Mean (Sub)	3.27		Moderate Extent
8. I have accomplished, processed or checked documentary requirements for the following expenses:			
a. Salaries and Wages	3.20	1.40	Moderate Extent
b. Other Compensation (e.g. PERA, RATA, Clothing Allowance, Honoraria, Hazard Pay, and Other Bonuses)	3.07	1.34	Moderate Extent



c. Personnel Benefit Contributions (e.g. GSIS, Pag-ibig, Philhealth, EASE Contribution)	2.77	1.41	Moderate Extent
d. Other Personnel Benefits (e.g. Terminal Leave)	2.66	1.44	Moderate Extent
Mean (Sub)	2.93		<i>Moderate Extent</i>
Overall Mean	3.28		Moderate Extent

The table 9 presented an overall mean of 3.28 and verbal interpretation of moderate extent, which perceived a moderate level of practice in processing financial claims for Personnel Services among the respondents. It was also seen that among the respondents that processed or check financial claims for personnel services, salaries and wages was the most highly processed, as it was the most common benefits received by the employees, in relation to, accomplishment reports were the highly

practiced documentary requirements needed in claiming for salaries especially for those Contract of Service Personnel and to avoid delay in processing time a high level of extent of practice has been noted in complying with deficiencies. Angraini et al. (2019)[12] concluded that internal employee behavior significantly affects their compliance on the department policies requiring constant monitoring in the organization since there are chances in implementation meeting the target standards.

Table 10 Extent of Practice in Terms of Maintenance and other operating expenses

Indicative Statement	Mean	SD	Verbal Interpretation
1. Immediate compliance on the deficiencies to avoid longer processing time.	3.86	1.10	Great Extent
2. Carefully checked for completion of all the requirements (e.g correct forms and complete signatures)	3.85	1.06	Great Extent
3. Inquiry on the deficiencies is immediately entertained by the concerned division/s.	3.77	1.05	Great Extent
4. Documentary requirements are being checked based on the Circular before processing of financial claims.	3.69	1.10	Great Extent
5. Returned financial claims include notes and explanation on the deficiencies.	3.68	1.18	Great Extent
6. I have accomplished, processed or at least checked financial claims for Maintenance and Other Operating Expenses	3.41	1.25	Great Extent
7. I have accomplished, processed or checked documentary requirements such as:			
a. Approved Justifications	3.81	1.22	Great Extent
b. Minutes of the Meeting and Attendance	3.77	1.24	Great Extent
c. Canvass, IAR, ICT, PAR	3.76	1.19	Great Extent
d. Obligation Request Status (ORS)/ Budget Utilization Request Status (BURS)	3.69	1.16	Great Extent
e. Original Copy of Official Receipt/ Sales Invoice/ Billing Statements	3.62	1.29	Great Extent
f. Contract	3.50	1.30	Great Extent
g. Travel Report	3.50	1.33	Great Extent
h. Certificate of Appearance	3.47	1.34	Great Extent
i. Approved Planned and Actual IOT	3.41	1.34	Great Extent
j. Result of Analysis	3.35	1.33	Moderate Extent
Mean (Sub)	3.58		Great Extent
8. I have accomplished, processed or checked documentary requirements for the following expenses:			
a. Supplies and Material Expenses	3.65	1.25	Great Extent
b. Traveling Expenses	3.42	1.27	Great Extent
c. Other Maintenance and other operating expenses	3.25	1.30	Moderate Extent
d. Repair and Maintenance	3.20	1.36	Moderate Extent
e. Training and Scholarship Expenses	3.12	1.40	Moderate Extent



f. Professional Services	3.05	1.40	Moderate Extent
g. Communication Expenses	2.87	1.38	Moderate Extent
h. General Services	2.80	1.45	Moderate Extent
i. Utility Expenses	2.76	1.41	Moderate Extent
Mean (Sub)	3.12		Moderate Extent
Overall Mean	3.47		Great Extent

Table 10 indicated overall mean of 3.47 with verbal interpretation of great extent, which was concluded that a high-level extent of practice has seen among the respondents. The result implied that, most of the respondents highly complied documentary requirements for reimbursement of supplies and materials expenses which is attributable to implementation of projects and to the day to day operations of the divisions, in relation to, approved justifications was the highly prepared

document to support the validity of their claims. More so, respondents practiced earnest compliance on the deficiencies noted. Andriansyah & Elmi (2020)[13] stated that it is necessary for an institution to develop document management process to improved productivity with the aid of supervision, evaluation and corrective actions having several workloads in the side of employees which may affect to develop their initiative and compliance.

Table 11 Extent of Implementation in Terms of Financial Claims for Capital Outlay

Indicative Statement	Mean	SD	Verbal Interpretation
1. Immediate compliance on the deficiencies to avoid longer processing time.	3.90	0.98	Great Extent
2. Inquiry on the deficiencies is immediately entertained by the concerned division/s.	3.81	0.98	Great Extent
3. Carefully checked for completion of all the requirements (e.g correct forms and complete signatures)	3.80	1.04	Great Extent
4. Documentary requirements are being checked based on the Circular before processing of financial claims.	3.69	1.09	Great Extent
5. Returned financial claims include notes and explanation on the deficiencies.	3.68	1.07	Great Extent
6. I have accomplished, processed or checked documentary requirements such as:			
a. Canvass, IAR, ICT, PAR	3.57	1.32	Great Extent
b. Original Copy of Official Receipt/ Sales Invoice/ Billing Statements	3.52	1.33	Great Extent
c. Approved Justifications	3.52	1.34	Great Extent
d. Obligation Request Status (ORS)/ Budget Utilization Request Status (BURS)	3.35	1.33	Moderate Extent
e. Contract	3.08	1.45	Moderate Extent
f. Philgeps Posting	2.88	1.46	Moderate Extent
g. Philgeps Registration, Income Tax Return, Business Permit	2.86	1.42	Moderate Extent
h. Statement of Work Accomplished/ Progress Billing	2.71	1.38	Moderate Extent
i. Contractors affidavit on payment of laborers and materials	2.60	1.40	Moderate Extent
Mean (Sub)	3.12		Moderate Extent
7. I have accomplished, processed or at least checked financial claims for Capital Outlay	3.10	1.29	Moderate Extent
8. I have accomplished, processed or at least checked financial claims for the following expenses:			
a. Machineries and Equipment	3.10	1.39	Moderate Extent
b. Furniture and Fixtures	2.85	1.40	Moderate Extent
c. Transportation Equipment	2.69	1.39	Moderate Extent
d. Infrastructure	2.68	1.43	Moderate Extent
Mean (Sub)	2.83		Moderate Extent
Overall Mean	3.21		Moderate Extent



The table 11 provided an overall mean of 3.21 which verbally interpreted as moderate extent, which denoted a moderate level of extent of practice among the respondents. It was concluded that respondents moderately practiced the contents of the circular for processing financial claims for machineries and equipment, which was attributed to the equipment needed for project implementation that requires technical expertise for the specifications, moreover, respondents highly practiced the accomplishment of Canvass, IAR, ICT and PAR as an attachment

to their claims. Moreover, urgent compliance with the deficiencies were also highly practiced to avoid delay in processing time. Based on Shafiee & Sørensen, (2017)[14] maintenance strategy includes a set of policies and actions that are used to “retain” or “restore” equipment as well as the decision support system in which maintenance activities are planned. Therefore, the importance of proper maintenance strategy is very important to ensure smooth business operation.

Table 12 Factors that affects the implementation as to Coordination

Indicative Statement	Mean	SD	Verbal Interpretation
1. Understanding the contents of the Circular	3.07	0.98	Moderate Effect
2. Interpreting steps in submission and approval.	2.97	1.02	Moderate Effect
3. Accessing the memos and circulars	2.95	1.02	Moderate Effect
4. Communicating with responsible personnel for completion of documentary requirements	2.90	1.07	Moderate Effect
5. Tapping higher officials for signature of request.	2.89	1.05	Moderate Effect
6. Asking information and assistance from the concerned office.	2.77	1.04	Moderate Effect
Overall Mean	2.92		Moderate Effect

Table 11 conveyed an overall mean of 2.92 indicated a verbal interpretation of moderate effect, which concluded that respondents have encountered moderate difficulty in coordination, that moderately affects the implementation. It was inferred that respondents encountered moderate difficulty on the implementation of the circular particularly in comprehending its contents and use. Moreover, asking for updates and assistance on the concerned division was less likely to be difficult for them, as

information was always provided when needed. Skarpaas et al. (2019)[15], coordination is linked to more communication with other services, increased contact with other professions, and increased program and workplace adjustments. Siddique et al. (2019)[16] proved that coordination between employees and management leads to enhancement of employee's ability, motivation and opportunity that significantly improves organizational performance.

Table 13 The factors that affects the implementation as to Initiative

Indicative Statement	Mean	SD	Verbal Interpretation
1. Getting updates on the status of claims	3.05	1.05	Moderate Effect
2. Adhering to requirement within a short period of time.	3.04	1.05	Moderate Effect
3. Assessing too many lacking documents of returned financial claims.	2.96	0.96	Moderate Effect
4. Accomplishing requirements without gaining personal benefits.	2.84	1.03	Moderate Effect
5. Establishing willingness to adhere with the requirements.	2.78	0.94	Moderate Effect
6. Asking assistance from co-workers in processing request.	2.66	0.99	Moderate Effect
Overall Mean	2.89		Moderate Effect

As seen on the table, an overall mean of 2.89 was presented, which concluded that respondents encountered moderate difficulty on establishing initiative on processing documentary requirements, that moderately affects the

implementation. This inferred that respondents encountered moderate difficulty on knowing the status of their financial claims as they need to personally make inquiries on the concern divisions for the updates. Moreover, respondents experience



less difficulty on asking assistance for processing of claims, as most of the employees are aware and knowledgeable on the documentary requirements that needs to be complied. Osborne & Hammoud (2017)[17] implied that implementing effective employee engagement strategies is crucial for the success of

organizations, and executives who start one need to learn how to listen well, be fair, have and show respect for others, establish trust, and comprehend the issues of their workforce. The life, viability, and profitability of the organization depend heavily on employee involvement.

Table 14 Relationship between the demographic profile of the respondents and the extent of implementation

Demographic Profile	Extent of Implementation	Computed R	Computed x ²	p value	Analysis
Age	Level of Awareness	0.423	-	0.019	Significant
	Level of Information Dissemination	0.130	-	0.174	Not significant
	Level of Perceived Functionality	0.361	-	0.061	Not significant
Years of Work Experience	Level of Awareness	0.203	-	0.033	Significant
	Level of Information Dissemination	0.104	-	0.276	Not significant
	Level of Perceived Functionality	0.151	-	0.103	Not significant
Sex	Level of Awareness	-	4.656	0.324	Not significant
	Level of Information Dissemination	-	3.850	0.932	Not significant
	Level of Perceived Functionality	-	8.479	0.076	Not significant
Educational Attainment	Level of Awareness	-	12.301	0.044	Significant
	Level of Information Dissemination	-	18.921	0.031	Significant
	Level of Perceived Functionality	-	6.301	0.514	Not significant
Designation	Level of Awareness	-	9.132	0.004	Significant
	Level of Information Dissemination	-	7.780	0.116	Not significant
	Level of Perceived Functionality	-	11.004	0.035	Significant

The table 14 disclosed the relationship between demographic profile of the respondents and extent of implementation in COA Circular No. 2012-001 to DOST-ITDI Employees. As seen on the table, respondent’s age, years of work experience, educational attainment and designation were significantly related with the level of awareness, indicating a p-value of <.05. These denoted that as the respondents age gets older and years of work experience gets longer, the more they were highly aware on the policies being implemented by the agency, and more likely expected to adhere. Löckenhoff (2018)[18] proved that individual decision making is affected by their age along with their development and mechanisms to express and process development. On the contrary, Widodo et. al (2022)[19] proved that job performance of employee increases in first entry in the industry but decreases among older employee particularly in problem solving, learning and speed. Also, it is concluded that the higher the educational attainment the higher the ability to understand, to grasp and process, and apply the information they have. Aldino & Susanti (2022)[20] concluded that a good education level has

a significant impact on an employee's performance and career advancement. The education of the acquired skills is beneficial for office work, and a high level of education will result in excellent performance in occupations that are sought after according to educational requirements. Moreover, Shewakramani & Jain (2020)[21] Employee’s education qualification is significant in work approaches as it molds their perspective in work process and affects productivity.

Moreover, respondent’s educational attainment was found to have significant relationship with level of information dissemination and designation were also significantly related with level of perceived functionality. This inferred that, the function of the circular is different according to the respondent’s designation and that they adhere on the requirements that is more related and beneficial on their current job description. As stated by Raju & Banejee (2017)[22] employee productivity depends on the obvious job descriptions are typically developed and provided by the company itself.



Table 15 Relationship between Demographic Profile and Extent of Practice in terms of financial claims

Demographic Profile	Extent of Practice	Computed R	Computed x ²	p value	Analysis
Age	Personnel Services	0.317	-	0.011	Significant
	Maintenance and Operating Expenses	0.230	-	0.067	Not significant
	Capital Outlay	0.161	-	0.091	Not significant
Years of Work Experience	Personnel Services	0.333	-	0.033	Significant
	Maintenance and Operating Expenses	0.194	-	0.276	Not significant
	Capital Outlay	0.116	-	0.193	Not significant
Sex	Personnel Services	-	9.56	0.524	Not significant
	Maintenance and Operating Expenses	-	0.80	0.932	Not significant
	Capital Outlay	-	8.71	0.076	Not significant
Educational Attainment	Personnel Services	-	14.11	0.047	Significant
	Maintenance and Operating Expenses	-	14.91	0.044	Significant
	Capital Outlay	-	5.30	0.514	Not significant
Designation	Personnel Services	-	11.13	0.041	Significant
	Maintenance and Operating Expenses	-	7.04	0.315	Not significant
	Capital Outlay	-	11.49	0.043	Significant

As indicated on table 15, respondent's age, years of work experience, educational attainment and designation were significantly related with the extent of practice in terms of financial claims for personnel services, which indicated a p-value of <.05. This inferred that as the respondents age gets older and the length of tenure gets longer, the higher the productivity and the higher chance to be promoted to higher positions and performed high productivity in managing the day to day operation of their project or division handled, thus a need to process claims for additional salaries and incentives. Asavanirandorn et al. (2022) [23] proved that older part time employees are more productive is duties within organization rather than young permanent individual and gender has no significant effect on productivity of different sector. On the contrary, according to Hsu (2018)[24], younger worker faces harsh adjustment in their workplace over older employee, yet they are more creative in dealing work related problems

applying different perspective of methodologies over older employees. Moreover, according to Solomon et. al (2022)[25] higher educational attainment tends to attain higher position providing different benefits, incentives and lesser stress which increase their productivity in work.

Further, respondent's educational attainment was found to have significant relationship with financial claims for maintenance and operating expenses and designation were also significantly related with financial claims for capital outlay. It inferred that, respondents processing financial claims for capital outlay were those that have high technical expertise and knowledge on the equipment being purchase. Likewise, with the claims for Personnel Services, it is more likely being process by the personnel belongs to Human Resource Management Section.

Table 16 Difference between the Ratings of Two groups of Respondents on the Extent of Implementation and Extent of Practice

Variable	Respondents		D	t	p	Analysis
	FMD	OD				
Extent of Implementation						
Awareness	4.82	3.69	1.13*	5.07	0.000	Significant
Information and Dissemination	4.25	3.03	1.22*	7.00	0.000	Significant
Perceived Functionality	3.91	4.82	0.91*	8.65	0.000	Significant
Extent of Practice						
Personnel Services	3.28	4.24	0.96*	5.27	0.000	Significant
Maintenance and other operating expenses	3.47	4.51	1.04*	5.00	0.000	Significant
Capital Outlay	4.42	3.21	1.21*	6.36	0.000	Significant

*Significant at 0.01 level (2-tailed test)



The table 16 represented the significant difference between the ratings of Finance and Management Division and Other Divisions on the extent of implementation and extent of practice of COA Circular No. 2012-001. This concluded that there is a significant difference between the rating of Finance and Management Division and Other Divisions of DOST-ITDI on the Extent of Implementation in terms of Level of Awareness, Level of Information Dissemination and Level of Perceived Functionality, also, a significant difference between the ratings on Extent of Practice in terms of financial claims for Personnel Services Expenses, Maintenance and Other Operating Expenses and Capital Outlay has been observed. This difference denotes that Finance and Management Division is more aware and informed of the contents of circular thus, implementing it more effectively than the Other Divisions. However, the ratings of Other Division are greater than the Finance and Management Division in terms of Perceived Functionality, which indicates that the contents of the circular are more functional to them. Mohajan (2019)[26] stated that lack of communication, inequalities in status, lack of leadership and managerial direction are barriers to Know Sharing. Unwilling of sharing knowledge of highly skilled and experienced staff is another barrier. Lack or an exiguity of network connections are also barriers to information sharing. VijayShankar (2018)[27] demonstrated that all the elements affecting organizational culture, such as Employee commitment is influenced by openness, confrontation, trust, authenticity, proactiveness, autonomy, collaboration, and experimentation.

CONCLUSION AND RECOMMENDATION

Most of the respondents were female, aged 31-39 years old, belongs to Research and Development Division and with 2 to 8 years work experience within the Industrial Technology Development Institute. It was found that there is a high level of extent of implementation and moderate level of extent of practice among the respondents. More so, factors affecting the implementation were found to have moderate effect. Further, a insignificant relationship was proved between demographic profile of the respondents and extent of implementation and practice as well as on the factors that affect the implementation, thus accepting the null hypotheses. Additionally, a significant difference on the ratings between Finance and Management Division and Other Divisions with regards to the extent of implementation and practice has been found, thus rejecting the null hypothesis.

Moving forward, the researcher recommends the inclusion of discussion of the contents of the Circular to new employee orientation, issuance of reiteration memo on the implementation and the contents of the Circular and posted on the ITDI-Website, emailed to official email accounts and disseminated through printed copy to each division. Conduct of orientation at least once a year for new and old Special Disbursing Officers, frequent travelers and employees involved in processing of financial claims may be employed by the management. Actual visits of COA personnel to conduct orientation may also be an option. the establishment of the data

tracking system that may be useful in real time updates on the status of financial claims and other documents. The Finance and Management Division may include of deadline of compliance on returned financial documents in strict compliance with ARTA.

For future researchers, this study may be a basis for future research; they may conduct research that is related with a compliance with documentary requirements and other policies and procedures in relation to Financial Management. Future researchers may opt to use another variable that may have significant effect such as Attitude and Compliance and establish a more comprehensive questionnaire that may assess the level of functionality among the different end-user/ respondents.

This research may be a basis of Commission on Audit to conduct study on the possible revisions on the contents of the in Circular, to incorporate updates in accordance with the present situations among government agencies, specially this time of pandemic.

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A STUDY OF EMOTIONAL INTELLIGENCE IN RELATION TO SOCIAL SKILLS OF SECONDARY SCHOOL STUDENTS

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ABSTRACT

This study begins to check the correlation between emotional intelligence and social skills. 200 students from sonipat district were included in the sample. This study is done on Government Senior Secondary School students. This study includes the questionnaire of both emotional intelligence scale and social skill scale. The emotional intelligence scale by Dr.S.K.Mangal and Dr.Shubhra Mangal and social skill scale by Dr. Vishal Sood and Dr.Arta Anand. The statistical techniques that are used for the analysis of these scales are mean, standard deviation and coefficient of correlation. The findings of this research have been discussed in detail.

KEY WORDS :Emotional intelligence, Social skills

INTRODUCTION

Social skills are the skills which we use internationally to maintain relationships between different people. We are social animals and human beings, so it is important to interact with different people living in our society. We are physically, mentally present in different situations and in different areas but how we are socially interacting with them. Social skills are required to brush up our relationships.

Social skills are the verbally and non-verbally communication with each other with our gestures and body language. These are our skills to throw up ourselves in front of people. After that people come to know ourselves that how we are as a person. Only with physical appearance it is difficult to know that what kind of people who are. Human beings are social creatures and we have developed many ways to communicate with the help of thoughts and feelings with others.

Definition of social skills

Social skills are the acquiring of knowledge that helps us to communicate properly and efficiently in front of the people in different situations.

Importance of social skills

- It builds our image in front of the people.
- It improves quality of life.

Emotional intelligence

Emotional intelligence is how we regulate our emotions in front of us and others. Expressing emotions is an effective way like expressing our happiness with others is emotional

intelligence. The person who is capable of controlling his/her own emotions and understanding other's emotional feelings and are aware about it are emotionally intelligent. Different persons have different emotions including positive or negative emotions.

Definition of emotional intelligence

The ability of controlling and influencing the emotions of ourselves as well as others is known as emotional intelligence.

REVIEW OF RELATED LITERATURE

1. Norman, Kathy, Richardson, and Rita (2001) conducted research on the relation of social skills and emotional intelligence of secondary stage teachers and found a positive relation between these two concepts.

2. Ms. Suman, Ms. Sarita (2002) conducted research on the relation of social skills and emotional intelligence of secondary school students and found no relation between social skills and emotional intelligence.

JUSTIFICATION OF THE STUDY

It is very important to justify the study to study the various aspects of life of secondary school students. This research work is based on emotional intelligence and social skills of secondary school students. Emotional intelligence helps in dealing with different situations of life. This research work will try to find out the relation between emotional intelligence and social skills of secondary school students.



OBJECTIVES OF THE STUDY

- To find the emotional intelligence in relation to social skills of secondary school students.
- To compare the relationship between emotional intelligence and social skills.
- To study the relation of emotional intelligence and social skills of Government Girls Senior Secondary School students.

HYPOTHESES OF THE STUDY

- The emotional intelligence of students will differ significantly.
- Social skills of students will differ significantly.
- There is no relation between these concepts of secondary school students.

STATEMENT OF THE PROBLEM

A STUDY OF EMOTIONAL INTELLIGENCE IN RELATION TO SOCIAL SKILLS OF SECONDARY SCHOOL STUDENTS

METHOD OF THE STUDY

Descriptive method was used to find the relation between emotional intelligence and social skills.

POPULATION

All secondary students of Government Girls Senior Secondary School, Gohana will be the target population for the recent study.

SAMPLE OF THE STUDY

200 students are included in the sample from Sonipat district.

TOOLS TO BE USED

- Emotional intelligence rating scale by Dr.S.K.Mangal and Dr.Shubhra Mangal.

- Social skill rating scale by Dr.Vishal Sood and Dr.Arti Anand.

STATISTICAL TECHNIQUES

- The techniques used were mean,standard deviation and correlation coefficient.
- To know the relationship between emotional intelligence and social skills correlation coefficient was used.

RESULT AND DISCUSSION

The senior secondary students were assessed using an emotional intelligence inventory by Dr. S.K.Mangal and Dr. Shubhra Mangal and social skills inventory by Dr. Vishal Sood and Dr. Arti Anand.

1. Extent of Social Skills of secondary school students

- Very high
- High
- Average
- Low

FIGURE 1

Figure 1 indicates that 54 % of the senior secondary school students have very high extent of social skills,32% of the students have high extent of social skills,11% of the students have average extent of social skills and 9% of the students have low extent of social skills. It indicates that social skills differ significantly.

2. Extent of Emotional intelligence of secondary school students

- High
- Low

Figure 2

Figure 2 indicates that 74% of the students are emotionally intelligent and 26% of the students are low at emotional intelligence .It indicates that emotional intelligence differ significantly.

3. Relation Between Emotional intelligence and Social skills - Table 1

S.No	Variable	N	Mean	S.D	Correlation Coefficient
1	Emotional Intelligence	100	61.63	6.006	0.52
2	Social Skills	100	361.22	28.4162	

Table 1 show that there are total 100 students. The mean and S.D of variable emotional intelligence are 61.63 and 6.006 and the mean and S.D of variable Social skill are 361.22 and 28.4162 .The correlation coefficient for the above two variables is 0.52 which indicates that there is a relation between Emotional intelligence and Social skills of secondary school students. So the hypothesis that there is no relation between these two variables is rejected.

CONCLUSION

This research concluded that there is a positive relationship between emotional intelligence and social skill of the Government girl's senior secondary students. It helps the parents, teachers, and school staff to guide and support students to be emotionally intelligent. The skills of the students are of great importance. This paper shows a great difference in mean values



of both the variables and concluded that there is a relationship between social skills and emotional intelligence.

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ARTIFICIAL INTELLIGENCE IN SUSTAINABLE ENERGY INDUSTRY: STATUS QUO, CHALLENGES, AND OPPORTUNITIES

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ABSTRACT

This study focuses on the future of AI in the energy sector, examining how AI can be used to improve efficiency and sustainability in the sector. The study aims to provide a realistic baseline of AI technology that can be used to compare efforts, ambitions, new applications, and challenges around the world. We covered three main topics: (i) how AI is being used in solar and hydrogen power generation; (ii) how AI is being used in supply and demand management control; and (iii) the latest advances in AI technology. In this research we explored how AI techniques outperform traditional models in controllability, energy efficiency optimization, cyber-attack prevention, IoT, big data handling, smart grid, robotics, predictive maintenance control, and computational efficiency. Our study found that AI is becoming an important tool for a new and data-intensive energy industry, which is providing a key magic tool to increase operational performance and efficiency in an increasingly cut-throat environment.

KEYWORDS: Artificial Intelligence; Renewable Energy; Energy Demand; Decision Making; Big Data; Energy Digitization

1. INTRODUCTION

Computer programs now have the capacity to reason and learn. In order to prognosticate wind pets and renewable energy sources in the simplest and most effective mores, artificial intelligence is largely recommended. Real- world data can be gathered by artificial intelligence, similar as literal rainfall patterns and energy demand, which can help an association, function more effectively in society. This technology is expansive and well known for its capability to prop in the resolution of problems with scheduling, soothsaying, control, and other affiliated areas. Artificial technology, a form of contemporary technology, can help with grueling tasks. You can reuse a lot of data and make extremely accurate prognostications thanks to artificial intelligence. This enables your company to more fluently gain the information demanded for effective operation and the advancement of society. Deals prognostications can be made with its backing, and it produces accurate data that enables them to take on further strategic tasks. Making opinions using chances has become important simpler and much more accurate thanks to artificial intelligence, which will shape the future of the force chain. AI assists in prognosticating the force chain, which promotes business growth, allows for multitasking, and lessens the workload for accurate resource allocation. Artificial intelligence is veritably profitable because it takes pitfalls, works more snappily, and is accessible for diurnal operations as a digital

adjunct around- the- timepiece. Artificial intelligence offers colorful types of solar technology, including solar photovoltaic, unresistant solar, solar water heating, solar process heat, concentrating solar power, etc. It principally offers real- time grid monitoring, more precise and effective power change soothsaying, and the creation of multitudinous new energy-related strategies

- The enabling technologies include: power plants flexibility, utility-scale batteries, IoT, big data and AI, blockchain, behind meter batteries, electric vehicles [3], mini-smart and renewable grids, super grids, renewable energy to hydrogen and renewable energy to heat;
- The business models include: community ownership models, peer-to-peer energy trading, energy services models, and online payment models;
- The system operation include: dynamic line rating, virtual power lines, corporation between distribution, transmission, and generation, energy forecasting, renewable power production, hydropower storage technologies and future role of utilities and system operators; and
- The energy market design includes: the different time of use tariffs, rising granularity in electricity markets, net billing schemes, the integration of the market with



distributed resources, regional markets, innovative ancillary services, and so on [5,10-15].

1.1 Research Gap

From the literature review, it is observed that in the following specific areas attention is required:

Enhancing Reliability and Adaptability: Further research is needed to understand how AI can improve the reliability and adaptability of decentralized and decarbonized energy systems. This involves optimizing energy generation and distribution, managing renewable energy sources, and ensuring grid stability.

Addressing Data Challenges: Challenges related to data quality, availability, interoperability, and privacy need to be addressed for successful AI implementation in energy systems. Research should focus on defining data requirements, developing data collection methods, and establishing effective data management strategies.

Policies and Investment Strategies: Exploration of policies and investment strategies is necessary to promote AI adoption in the energy sector. Understanding the impact of different policy frameworks, funding mechanisms, and regulatory approaches is crucial for fostering AI innovation and deployment.

Ethical and Security Concerns: The ethical challenges, privacy considerations, and security risks associated with AI adoption in decentralized energy systems should be investigated. Developing frameworks and guidelines for responsible and secure AI implementation is important, including addressing biases, ensuring transparency, and safeguarding critical energy infrastructure.

Socio-economic Implications: The broader socio-economic implications of AI adoption in the energy sector need to be studied. This includes analyzing the impact on employment, workforce skills, equity, accessibility, and affordability of energy services. Evaluating the potential benefits and risks for various stakeholders is crucial.

By closing these research gaps, valuable insights can be gained to effectively integrate AI in energy systems, ultimately leading to enhanced reliability, sustainability, and societal benefits.

2. WORLD ENERGY SCENARIOS

The world energy assiduity looks to primary shifts in the way it sells, generates, and distributes energy. The energy assiduity is under enormous stress to reduce carbon emigrations and to find applicable ways to manage power force- demand balance across power grids. The main ideal is to move from conventional energy coffers, similar as reactionary energy- grounded energy sources, to a new carbon-free energy source [4].

To shows the history of world energy generation and consumption by dissimilar sections between 1990 and

2017(KeyWorld) Energy Statistics 2019, 2019). Utmost of the globe's total energy consumption comes from conventional energy coffers like coal, crude oil painting, natural gas, etc., and is adding time on time. The renewable share of final world energy consumption reckoned for 17.48 in 2016, which is advanced in the history. Every time the world's per capita income continues to grow. Large dependence on fossil energies for energy use and transport, global warming, and climate change are other enterprises in the recent period. The significant increase in hothouse gas house (CO₂) emigrations can be looked in 2017 and is 0.22 advanced than in the 2015 financial time [2]. overall demand for primary energy increased by 2.3 in 2018, the largest periodic increase since 2010 [5]. The United States, China, and India accumulated 70 of the world's increase in energy requisition [5]. The total share of renewable energy is presently growing from about 1/4 to about 45 in 2040 (from which PV contributes 11, over from the current 2) [5]. Recent developments have been unstable and, despite proposed programs, prospects for change are also uncertain. The number of people without electricity access dropped from 980 million in 2017 to 860 million in 2018; still, Africa's lack of energy remains acute [5]. The proposed and recent enterprise give access to energy in several regions of the world; still, they aren't enough to completely exhilarate Africa by 2030 [5].

There's a major problem with the power force's trust ability, e.g., voltage dips, harmonics, voltage swells, slow voltage variations, voltage imbalances, transients, frequency variations, and fast voltage variations [6], etc. furnishing high- quality electricity services to businesses and consumers are vital to profitable development. The unstable force of electricity operates as a constraint on the overall weal and profitable exertion and inhibits the power generation of a particular mileage. With these constraints, furnishing continued power inventories to consumers requires companies to deal with power force dearth's or switch to more precious and contaminating power generation options, similar as diesel creators. All options have adverse goods on firm performance and stymie competitiveness. Poor power system structure is a major cause of then on-reliability of power force in developing countries. Investment in power structure, combined with changes in the effectiveness of services, leads to a reduction in the number of outages. In cooperation with MIT- Camilla's Universal Energy Access Lab, the International Energy Agency has designed a new study to exfoliate light on the relationship between the least cost-effective electrification approach to grid trust ability and world energy access. Structure position geospatial analysis using the reference electrification model recommends Mini-grid and grid design and improves electrification planning [5]. More electrification and ultramodern smart grid structure can make the most effective use of electrical grids possible by adding renewable sources' integration as these technologies come more complex and effective.



3. THE HISTORY AND ROLE OF AI IN THE SMART ENERGY INDUSTRY

The history of AI is grounded on demonstrations, openings, and pledges. Since the last half-century, AI advance has been erecting trial machines to perform different kinds of intelligent gets in the energy assiduity. Alan Turing is a colonist of AI. In 1950, Alan Turing proposed the "reproduction game" proposition, latterly known as the Alan Turing Test. In 1956, the term AI was chased at a regard. The List Processing program was proposed in 1964 to break and read algebra-grounded word problems. It was a cold period between 1975 and 1980 for the advancement of AI technology. This period showed a lack of interest in AI, reduced backing openings for new systems, a lack of calculating power and sense. In 1982, the proposition of artificial neural networks came popular for the first time. Between 1990 and 2015, remarkable innovations in the field of AI have been explored, similar as logistics planning for US military operations [7]. In the recent period, AI has moved from pall bias to Tensor Flow, Caffe-2, and Lite Libraries, which are used to break complex logical problems. The vacuity of these AI digital technologies will increase the energy force from further advanced wind ranch vaticinations [18], to bettered operating & conservation costs, process effectiveness and operating life of the outfit [5].

4. CHALLENGES OF AI RELINQUISHMENT IN THE SMART ENERGY ASSIDUITY

There are different types of tailback challenges to espousing AI in the smart energy sector, similar as data quality and lack of data, AI network parameters tuning, specialized structure difficulties, lack of good experts, integration challenges, pitfalls, or compliance issues and legal enterprises. Discovery and opinion of faults are also complex challenges for erecting energy systems [8]. Different inquiries fete that data instability and deficient information are some of the major challenges facing energy systems [17]. The poor quality of regulators, detectors, and controlled bias for energy system operation and data estimation affects the system's trust ability and performance. The complex correlations and strong coupling of the power grid, the high data dimensionality, including the massive complexity of large-scale simulation grid data, face new challenges in the energy request [9]. The use of AI to integrate renewable energy, similar as wind and solar, is also complex and delicate for grid operations [19]. Presently, different IT companies have demonstrated amount computing, one of the most effective supercomputers. While quantum technology improves AI-grounded ML ways and increases system processing capabilities, it also increases playing pets. While AI development is an effective and promising development of sustainability, perpetration produces an enormous quantum of carbon footmark, reflecting a direct answer effect. A Single AI learning algorithm can release CO₂ emigrations level to five buses [16]. AI ways calculate heavily on different types of energy data, therefore contributing laterally/directly to the universal carbon footmark of data technology (IT) [1]. Other crucial energy-related AI challenges include

- Non-theoretical history: One reason for AI's decelerating growth in the energy sector is the lack of crucial AI chops among decision makers. Utmost associations warrant the technological background to understand how they would profit from AI operations.
- Lack of practical moxie: There are numerous professionals with in-depth specialized aspects. still, it is extremely delicate to find good professionals to make dependable AI-powered operations with real practical benefits. Although power companies cover and maintain data, digitizing with advanced operation software is problematic. Data loss, poor configuration, device malfunction and unauthorized access are related pitfalls. Because the cost of mistake in the energy sector is high, numerous companies are reticent to consider trying new strategies with little moxie.
- Outdated power system structure: An outdated structure is the topmost handicap to the modernization of the energy sector. At current, mileage companies are trapped in a lot of data they produce; they've no idea how and when to deal with it. Although the assiduity has further data than anyone differently, the data is also dispersed, disorganized, spread across different formats and stored locally. While the assiduity has huge gains, it also suffers from the vulnerabilities of outdated systems.
- Profitable pressure: The integration of innovative advanced energy technologies may be the right object to do, although it isn't cheap. It takes a long time and plutocrat to find a well-established software provider, make and configure software, qualify, maintain, and manage it. Either, this deployment of energy technology will affect developing, conforming, and controlling software that needs a great deal of backing and coffers.
- Decentralization and diversification: Decentralization and diversification of energy force, together with the development of arising AI technologies and adding demand trends, produce complex problems for energy product, energy transmission, energy distribution, and cargo consumption in all countries of the world.
- Cellular technologies: Cellular technology dependence limits the significance of AI in numerous developing husbandries, particularly low-income countries, pastoral and other underserved areas. The adding trouble of cyber attacks is getting decreasingly popular, and a major concern, substantially as automated control and smart metering account for nearly 10 of global grid investment, which is original to \$ 30 billion a time for installing digital structure [19].
- Black: boxes AI-grounded operations are black boxes for consumers, utmost of whom don't fete their internal functions or how they've been created, which constitute a implicit trouble. And, given that the current ways are far from perfection, the protections will be productive as they are integrated into the power systems.



5. CONCLUSION

In conclusion, decentralization, decarbonization, and digitization are causing a rapid shift in the energy sector. AI proves to be a useful tool for improving the reliability and adaptability of the electricity system. With applications ranging from big data analytics to intelligent robotics and cyber attack prevention, the vast capabilities of AI can be divided into assessment, inference, and response. Effective data analysis, machine learning, and AI application depend on high-quality data sets. Governments from all around the world are embracing various AI policies, concentrating on their own advantages and societal demands. The construction of AI ecosystems and clusters, as well as strategic investments in AI research and development, can promote innovation in both the private and public energy sectors. To maximize the advantages of AI while minimizing any potential negatives, ethical issues, data privacy, and security are being addressed. Overall, AI has the ability to alter the energy industry, propel future growth, and manage and navigate new energy systems.

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GREEN INTERNET OF THINGS (G-IOT) FOR SUSTAINABLE ENVIRONMENT

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ABSTRACT

The Internet of Things (IoT) revolution drives innovation in numerous fields of research and daily life by enabling anytime, everywhere access to data in fresh contexts. Through this innovation, there have been previously unheard-of connections between people, objects, places, organisations, and facilities. Despite the many advantages of IoT products and systems, creating, distributing, and using them requires a lot of energy and resources and is accompanied by rising amounts of solid and toxic waste. It is essential to effectively address issues like rising energy consumption, waste, and greenhouse gas emissions if we are to ensure that the potential adverse impacts of technological growth are kept to a minimum. For this reason, we are heading towards a more environmentally friendly future in which green technology, green IoT, and green economies will, respectively, replace current technology, IoT, and economies. This implies that there will be a vast array of potential enhancements to human welfare, which contribute to the development of a sustainable, intelligent world. This study examines the principles and functions of G-IoT in the advancement of society by examining its potential to enhance quality of life, the environment, economic growth, and green global modernization. It also analyses the significance of greening technologies' processes in sustainable development. It has been demonstrated that the G-IoT has the ability to revolutionize and bring about a variety of benefits in various industries using the most recent technological approaches and solutions, while also eradicating or greatly reducing the detrimental effects on the well-being of humans and the environment.

KEYWORDS: Sustainable Environment, Artificial Intelligence, G-IOT, Green-IOT

1. INTRODUCTION

The element in the process of the providing a seamless communication and services consumes more power triggering the sustainability concerns [1]. The energy consumption of the internet of things also introduces toxic pollution and E-waste that affects the surroundings and the ecosystem. The Internet is a reality that is constantly changing, with major changes happening every day. Internet access and broadband connections are easily accessible thanks to their low cost and accessibility. There are more Internet-connected biases now than ever before, which benefits the Internet's effects. The ability to provide better services to the environment as new data becomes available, along with an expansion of the web through the incorporation of physical things, is what powers the Internet of Effects. The consequences then apply to embedded devices that have detectors that can gather, store, and analyse data. Data may be transferred for processing and simplified software can be uploaded as well as operated remotely because they are connected to the Internet. It is anticipated that by 2050, nearly 70% of the world population will live in cities as a consequence of increased levels of urbanization and accelerating migration [11]. The phrase "Internet of effects" refers to a variety of technologies and research fields that enable global connectivity

over the vast physical items of the planet. IoT objects are capable of transferring data, exchanging information, and communicating with one another. Consequently, the IoT is viewed by many as the best solution for obtaining perception of real-world physical processes in real-time. The IoT will be built on technologies like RFID (radio-frequency identification), detector networks, biometrics, QR canons (Quick Response canons), and nanotechnologies. In this future, information and communication systems will be covertly incorporated into the environment around us to address a variety of operations, such as smart grid, e-health, intelligent transportation, etc. While retaining the necessary sequestration, IoT fully utilises effects to provide services to all types of processes. Physical and virtual effects have individualities, physical attributes, and virtual personalities, use intelligent interfaces, and integrate seamlessly into the facts network in this dynamic, global network structure with tone-configurability capabilities. In the development process of high-end manufacturing industry, Smart Park has become a new trend and new requirement for the development of industrial park. With the promotion of comprehensive national strength, we are improving our quality-of-life step by step. But at the same time, we cannot damage the ecological environment [2, 6].

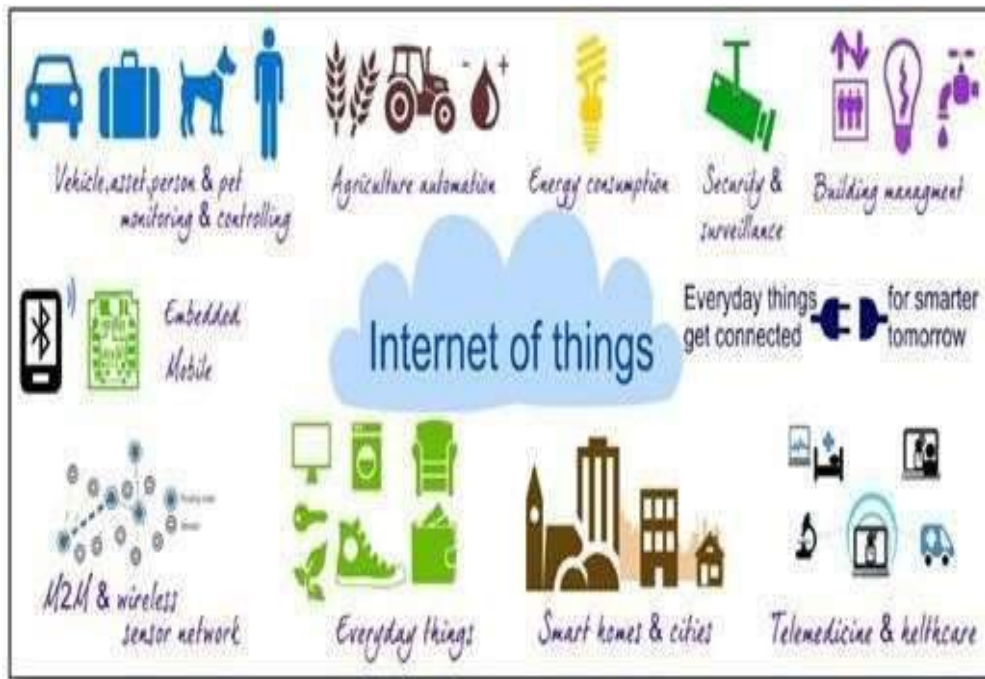


Fig.1: Internet of Things

The fundamental tenet of the Internet of Things is that everything around us—from little homes to enormous buildings, basic household items to complex technological systems, man-made relics to inanimate objects—could be connected, sensed, and jointly communicated across the Internet. The IP address of every IoT-connected equipment will serve as a unique link between them. These items' intelligence will be detected. Micro electromechanical systems (MEMS) used in these detectors will react to changes in temperature, sound, moisture, pressure, agitation, light, time, weight, etc., and execute the appropriate action that has been programmed into them. The Internet of Everything is a system that has been proposed, in which every day inanimate objects like machinery and appliances, as well as people and other living things, will be connected to a network and be able to exchange data.

Absent human involvement, objects and robots will be able to engage and send dispatches to one another. The creation of a system of systems by connecting billions of devices, vehicles and infrastructure everywhere in a city, enable stakeholders to reduce carbon emission, decrease energy and water consumption, increase safety efficiency, and human well-being [10].

2. MATERIAL AND METHOD

The literacy-based algorithms improve the network's efficiency in terms of opinions since they carry out specific actions based on gestures and training materials. Similar methods are crucial for IoT-based dispatches to carry out complicated tasks at the lowest possible cost to the network. In an opportunistic network, an efficient routing protocol with a strong foundation in knowledge of machines was put forth. The proposed solution calculates the likelihood of successful deliveries using a neural network and decision tree. The machine literacy model is trained based on several criteria, and simulation results show that it performs better than other workshop models in terms of

successful delivery rates, charges, and packet drop rates. In order to provide real-time processing and reduce the required number of edge bumps, planting edge calculating bumps for large-scale IoT was proposed. The result suggests a three-phase rollout strategy and considers both the IoT's commercial and wireless diversities. In comparison to alternative approaches, the suggested solution reduces the amount of edge bumps and enhances network performance. A dynamic routing opinion-inducing protocol called k-means clustering grounded routing protocol for opportunistic networks that is based on network properties has been presented. The suggested outcome makes use of machine learning techniques [12-17] to provide an improved k-means clustering method for training the network features and chooses the best coming-hop. In terms of hop count, above, delivery rates, and drop rates, the outcome enhances network performance. However, the study does not take into account network conditions or protection against dangerous bumps. As a result, the technique reduces the secrecy and integrity of the network performance. The removal of network irregularities, such as business traffic, from the outcomes of routing is the goal of a real-time deep literacy strategy for intelligent business control. Deep convolutional neural networks with specially dispersed inputs and labours are utilised in the proposed method. Comparing this method to conventional routing protocols, the network detention and packet detention rates are reduced. However, the technique continues to drain detectors' coffers of fresh energy due to a deluge of control dispatches. Additionally, trustworthy dispatches between the bias are ignored, which exposes data and compromises network security. The application of the green technologies is utilized in the following applications such as the industrial automation [3] [9]; it is highly utilized in the agriculture [4] to make it more sustainable. The green technologies also take a vital role in the smart cities development to make it more sustainable and safer [5] [7]. The



sustainability in the supply chain is achieved by employing the green internet of things [8].

2.1 Research Gap

The existing literature acknowledges the benefits of green technologies but lacks details on challenges and limitations. Further research is required to explore barriers in implementing green technologies across different domains, including technical, economic, and regulatory challenges. It also emphasizes the need to evaluate the environmental impact and energy efficiency of green technologies through empirical studies. The concept of the "green IoT" is briefly mentioned, prompting the investigation of its specific applications and advantages in achieving sustainability. Integrating IoT devices with green technologies can improve resource efficiency and overall sustainability. Closing the research gap will foster the development of environmentally friendly solutions in various fields.

3. RESULT AND DISCUSSION

By strategically delivering active ingredients, nanotechnology as well as nano materials in husbandry aim to reduce the quantity of dispersed substances, minimise nutrient losses in fertilisation, and boost yields through optimised water and nutrient use. It is being investigated whether factory parentage and inheritable metamorphosis are based on nanotechnology bias. For use in bio industrial applications, bio nano composites with improved physical-mechanical properties can be created based on conventionally obtained materials. Crop products, factory protection items, and diseases are among the agricultural nanotechnology activities that are most suitable. The primary industrial goods and diseases based on nanotechnology include viral capsids, nano particles, nano emulsions, and nano capsules. They serve as intelligent delivery devices for nutrients or active ingredients utilised in the complaint and pest control of stores. Nano fertilisers are being widely used.

The large amount of attention and considerable research has been devoted to the evolving communications architectures, green wireless communication, energy efficient routing, relay selection strategies for green communication, energy efficient packet forwarding, and networking games [18]. Nitrogen and potash diseases, nano porous zeolite, zinc nano fertilizer, nano herbicide, and nano pesticide are the primary representations. Soil improvement Nano materials can be used for liquid or water retention. Zeolites and nano clays are two examples of how the process works. Zeolites are utilised to retain water or liquid agrochemicals in the soil for their delayed release to the shops, while nano clays can be employed as pollutants to remove a variety of hazardous compounds from the environment. Purification of water and removal of contaminants Nano materials and nano clays can be employed as pollutants to remove various harmful elements from the environment. People Nano sensors, which include electrochemically active carbon, nano fibers, fullerenes, wireless detectors, and smart dust technologies, can be used to monitor the environment, factory health, and growth. Factory-born parents For the transport of DNA or RNA to plant cells, for their inheritable transformation, or to trigger defence

responses triggered by pathogens, nano materials can be utilised as carriers. Materials made of nanotechnology Nano materials can be created via tinkered factories, microorganisms, and the processing of agricultural product waste. The major goal of using green nano materials in modern husbandry is to eliminate the use of environmentally hazardous inputs, minimise the waste of expensive fertilisation, and boost input efficiency and yields through need-based management. Green nano materials are accessories created using concepts that are beneficial to the environment. These accessories are essential for reducing GHG emissions to the climate, with the husbandry sector releasing significantly less carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄). Green nano materials also reduce issues with agricultural practises related to human health and the environment in a changing climate, improve food and nutrient security, and raise agricultural production as required by the rapidly growing world population. In conclusion, safe and energy-efficient products and processes, less waste, decreased GHG emissions, and utilisation of renewable resources are the primary characteristics of green nanotechnology conception. Green Internet of Nano Effects (G-IoNT), a symbiotic method of G- IoT and Green nanotechnology, holds an inherent to make a full world of outstanding breakthroughs in the husbandry sector. Green nano particles, nano sensors, nano robots, and other green nano devices linked with G-IoNT provide a completely new landscape for the 21st century's transformation in animal husbandry and food assiduity.

4. CONCLUSION

Due to the expanding global population and climate change, the agriculture industry and food security are currently experiencing enormous problems. Therefore, the use of IoT and nanotechnologies in this industry can significantly help to address the problem of sustainability. However, just as with the use of any new technology, a trustworthy threat-benefit analysis as well as a thorough cost account analysis must be conducted. Nanotechnology and Internet of Things use in farming and food production has drawbacks akin to implicitly harmful influence on the soil, biodiversity, and water sources, as well as higher GHG emigration rates. As a result, new technical methods such as green nanotechnology and the internet of things (IoT) were created as suitable solutions for efficient and intelligent animal husbandry. The advantages of G-IoT operation in husbandry include increased soil fertility, more effective application of water and diseases, fungicides, and dressings, diversifying of crops and animals, as well as use of automated ranch ministry. This ultimately results in a substantial decrease of the adverse impact of IoT on the terrain, successfully addressing the impact of climate change, which is the biggest problem in the agrarian paradigm. On the opposite hand, green nanotechnology is essential for reducing GHG emissions into the atmosphere, agrarian practises that are harmful to human health and the environment, and a rise in food and nutritional security. G-IoNT, created by combining G- IoT and Green nanotechnology, will considerably help to revolutionise husbandry practises and approaches, making the husbandry sector and food production more efficient, safe, and sustainable as a way forward.



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AYURVEDA MANAGEMENT OF *Arma*(Pterygium) - A CASE STUDY

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ABSTRACT

Arma is one of the very common Suklagata Netraroga. Arma can be compared with Pterygium. The prevalence of this disease mostly seen in Global Rural Community and in central India is about 13%, among adult >30 years of age. Asymptomatic nature of the disease and non-availability of medical treatment are the main hurdles in management. More –over recurrence rate is high after surgery. A wide variety of treatment principles are explained in the classics for Arma such as Lekhana Chedana and Anjana. Lekhana Karma is a surgical management indicated for Arma. In this study, Arma is scrapped with Bijapura(citrus medica) Bhavitha Saindhva Lavana using Shalaka. With the help of Sukshma Tikshana Guna and Lekhana Karma dravyas the progression of the Arma towards Krishna Mandala can be reduced and helps to avoid recurrence.

KEY WORD – Netraroga, Arma, Lekhana ,

INTRODUCTION

Shalaky tantra is one of the Ashtangas of Ayurveda that deals with the diseases affecting the Urdhwajatrugata Vyadhi's (organs above the clavicle). The most important organ of Urdhwajatrugataavayawa is eye. Acharya Sushruta has mentioned eleven types of Shuklagata Rogas that is the white part of the eye in which Arma is also one of the Shuklagata Vyadhi's. Arma, is a disease of eye which is characterized by wing like encroachment of the conjunctiva over the cornea¹.

Arma can be compared with Pterygium. Pterygium is not only a degenerative disease but may be proliferative disorder of the ocular surface. The aetiology of Pterygium has intrigued researchers for centuries. Several surveys have consistently shown that countries near the equator have higher rates of Pterygium. A possible reason for this geographic variation is that UV B radiation may be a risk factor for the development of Pterygium. UV B radiation may induce cellular changes in the medial/lateral limbus of the cornea². Several case control and cross-sectional studies have been attempted to accurately quantify UV light exposure and document its relationship with Pterygium. Genetic attributes and other lifestyle behaviours may also contribute to the development of Pterygium. The causative factors of Arma include exposure to dust, light, Dhooma, Raja, variation in seasons, unhygienic conditions and Asatmya Vihara. Different treatment modalities are explained for the management of Arma mainly Lekhana, Chedhana, Anjana, Ghritapana and Lepa. Arma is a type of

Mamsavridhi (muscle like growth) hence Acharyas have indicated Lekhana and Chedana as the mainstay of treatment³. Hence for the present study dravyas having Sukshma Tikshana Guna and Lekhana Karma which arrest's further progression and also helps in the removal of Dushitakaphadi Doshas which causes Mamsadushti and Bijapura(citrus medica) Bhavitha Saindhva lavana using Shalaka is used to treat Arma.

CASE REPORT

The Present case study is successful Ayurvedic management of a case of Arma(Pterygium). A 52 year old female patient came to SDM Ayurveda Hospital who presented with the classical symptoms of Arma like MamsaVridhi (fleshy growth of conjunctival tissue), Raga (Redness/congestion of conjunctiva), Gharsha (Foreign body sensation) for 2 years was selected for the study.

History of present illness

The patient was having normal eyesight before 2 years. But then patient gradually got symptomatic appearance of Arma and was diagnosed during routine check up at Ophthalmologist. Patient was also psychologically upset since last few years due to fear of loss of eyesight and was on local and oral medication. But there was no any significant relief. Hence, she came to SDM Ayurveda Hospital for better management

Past history: No abnormality noted.



Personal History

Name -XXX
 Age – 52 years
 Sex -Female
 Marital status - Married
 Occupation – House wife
 Addiction – Coffee, Tea
 Bowel habit -Regular
 Appetite - Good
 Sleep – Good

Table No 1- AshtavidhaPariksha

<i>Nadi</i> (Pulse)	78/min
<i>Mala</i> (Stool)	<i>Saama</i>
<i>Mutra</i> (Urine)	<i>Nirama</i>
<i>Jivha</i> (Tongue)	<i>Saama</i>
<i>Shabda</i> (Speech)	<i>Spashtha</i>
<i>Sparsha</i> (Touch)	<i>Anushna</i>
<i>Drika</i> (Eye)	Pallor(+)
<i>Akriti</i> (Built)	<i>Madhyama</i>

Table No.2- General Examination

BP	120/80 mmhg
<i>Bala</i>	<i>Madhyama</i>
<i>Prakriti</i>	<i>Vath-Kaphaja</i>
Height	147cm
Weight	58kg

Table No.1- OcularExamination

Ocular Examination	OD	OS
Eyelid	NAD	NAD
Eyelashes	NAD	NAD
Lacrimal apparatus	NAD	NAD
Bulbar Conjunctiva	Congestion present with white elevated mass	NAD
Palpebral conjunctiva	NAD	NAD
Cornea	Clear	Clear
Pupil	RRR	RRR

Table no 2: Fundus examination

Fundus	OD	OS
Media	Clear	Clear
Optic disc	NAD	NAD
Macula	NAD	NAD
Retinal blood vessel	NAD	NAD

Table no 3: Visual Acuity

Visual acuity	OD	OS
Distant vision (without glasses)	6/6(P)	6/6
Near vision	N6	N6



No investigation is required but Schirmer's Test was done to test any association with a dry eye which was 17 mm for the eye without topical anaesthesia.

Interventional anti-inflammatory and artificial tear eye drops were stopped. Hence for the present study *Bijapura*(citrus medica) *Bhavitha Saindhva lavana* having Lekhana property is used to arrest the further progression and removal of *Arma*.

Table no.4: Intervention chart

Visit	Procedure done	Drug used	Date
First visit	lekhana karma	Bijapurabhavithasaindavalavana	2/03/2022
Second visit	lekhana karma	Bijapurabhavithasaindavalavana	9/03/2022
Third visit	lekhana karma	Bijapurabhavithasaindavalavana	16/03/2022

DISCUSSION

Arma is one among 11 *Netravikara* studied under *Shuklagataroga* by *Acharya Sushruta* and 13 explained by *Acharya Vagbhata*. It is mainly classified into 5 types i.e., *Prasthari*, *Shuklarma*, *Kshatajarma*, *Adhimamsaarma*, *Snayuarma*.⁵ It is nothing but membranous growth that forms in *Shuklamandala*. There are different treatments that are explained for the management of *Arma* mainly *Lekhana*, *Chedhana*, *Anjana*, *Ghrithapana* and *Lepa*.⁶ It is also explained in *Bhavaprakasha Madhyama Khanda*, *Netraroga Chikistadhikara* of *Yogaratanakara* and in 3rd chapter of *Gada Nigraha*. *Madhavakara* explained about *Arma* in *Madhyama Khanda*, also *Netraroga* and *Chikitsa* explained in *Sahasra Yoga* and *Chikitsamanjari*.

A wide variety of treatment principles are explained in the classics for *Arma* such as *Lekhana Chedana* and *Anjana*. *Lekhana Karma* is a surgical management indicated for *Arma*. In this study *Arma* is scrapped with *Bijapura* (citrus medica) *Bhavitha saindhvalavana* using *Shalaka*.⁷ With the help of *Sukshma Tikshana guna* and *Lekhana karma* dravyas the progression of the *Arma* towards *Krishana Mandala* can be reduced and helps to avoid recurrence.⁸

CONCLUSION

Pterygium is sometimes not problematic as it is usually found in adults and old aged people. But if it is seen at a very young age and also causes ocular discomfort, dry eye symptoms and congestion then it cannot be ignored. In the present study, the condition was the same. So, the *Ayurvedic* treatment is advised to the patient following the classical principles. The patient was

completely relieved. Furthermore, studies are needed to make a good conclusion and effective treatment for patients with Pterygium. *Lekhana Karma* is a surgical management indicated for *Arma*. In this study *Arma* is scrapped with *Bijapura* (citrus medica) *Bhavithasaindhvalavana* using *Shalaka* which reduced the progression and avoided the recurrence.

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EFFECTS OF FOOD ON HUMAN EMOTIONS: AN OVERVIEW

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ABSTRACT

Food is indispensable for sustaining life as well as promoting the health and well-being of all living things. As a basic need for sustenance of life, food provides nourishment - the energy and nutrients needed by the body for various activities. A wide variety of food across different groups is consumed by humans. Food is an integral part of life, a comfort factor for some, a gastronomic delight for another, a culinary art for a few, a career pathway for others and so much more. It is a well-known and established fact that our emotions have the tendency to change according to the food we consume. Food and emotions are closely linked; it has the ability to evoke a range of emotions in our body. It is found that while certain edibles such as those high in fat, carbohydrates and sugar tend to result in negative emotions in some people, most people relate sweet food and food rich in sugar as evoking positive and happy emotions. This investigative study aims to explore these emotional reactions to different kinds of food to gain a better understanding of the interrelationship between the two.

KEYWORDS: Food, Human Emotions, Food habits, Food choices, Emotional advertising

RESEARCH OBJECTIVES

The primary objectives of this exploratory research study are enumerated below:

- To determine the effect food has on human emotions
- To obtain a broad idea of the relationship between food type and human emotions
- To analyse food habits affecting food choices
- To explore the impact of emotional advertising on food choices
- To gain insights from earlier research studies on the complex relationship between food and emotions

INTRODUCTION

“The belly rules the mind”, is a rather apt Spanish proverb that highlights how food affects the mind in addition to satisfying hunger. A study of the relationship between food and emotions helps researchers to find out the causative factors for alterations in human behaviour. This continues to be an area of interest for researchers engaged in studying the impact of food on human behaviour. This relationship varies from person to person according to their emotional stability and routine activities. In the animal kingdom, animals appear calm and relaxed after eating their prey and satiating their hunger pangs. Hunger pangs can irritate an animal and this change in emotion drives the animal to look for food to satisfy itself. The relationship between food and emotion has important implications for public health, as emotional binge eating and unhealthy food

choices can contribute to the development of obesity, eating disorders and onset of other physical and mental health issues. Understanding the factors that shape emotional responses to food can help individuals consciously make healthier food choices, take charge of their eating behaviour, improve their eating habits, avoid harmful foods and develop a more mindful and positive relationship with food.

REVIEW OF LITERATURE

The relationship between food and emotion has been studied from various perspectives, including psychology, neuroscience, and nutrition (Canetti, L., Bachar, E., & Berry, E. M., 2002). Several studies have examined the effects of nutrients on mood and emotional well-being. Essential nutrients like omega-3 fatty acids, found in fish and other seafood, are purported to have antidepressant effects (Polak, M. A. et al, 2015). Functional magnetic resonance imaging (fMRI) is a neuroimaging technique that is used for identifying the specific regions in the brain that are activated during food-related emotions. For example, the amygdala, a brain region that is involved in processing emotional information, has been shown to be activated during food cravings (Castro, D. C., & Berridge, K. C., 2014). Research has found that food is integrated with, is an important part of and is influenced by culture. People from different cultural backgrounds may have different emotional associations with certain foods. Food consumption, food choices and food habits tend to vary across cultures along with

emotional responses. Certain foods invoke positive or negative emotions depending on cultural beliefs, attitudes, values and practices as well as culinary traditions. Some cultural groups provide guidelines to be followed about certain food habits that keeps them included in the community (Eugene, 2020). Emotional advertising is an important promotional technique adopted by marketers and companies to attract new consumers, widen their customer base and promote their products by eliciting an emotional response from the consumer. The emotional reactions to intake of food can be divided into positive emotional appeals and negative emotional appeals. Although consumers may exhibit numerous negative emotions, marketers generally use four types of negative emotions in persuasive and emotionally appealing advertising to establish a connection with their audience: fear, guilt, sadness, and anger (Eugene, 2021).

THEORETICAL FRAMEWORK

The theoretical framework for studying the relationship between food and emotions is based on the concept that food is not just a means to fulfil a physical need, a source of energy and nutrition, to maintain good health and to ease hunger pangs but also a powerful symbol of cultural influences and emotional connections. It is used to celebrate special occasions and many social relationships are often forged over a meal. In **Affective Neuroscience Theory**, emotions, including emotional responses to food, are generated by specific neural circuits in the brain. According to this theory, the brain's reward system includes the mesolimbic dopamine pathway, which is activated by the consumption of comfort food and other pleasurable experiences (Montag & Davis, 2018). In **Social Cognitive**

Theory, individuals learn to associate specific foods with particular emotions through socialization and personal experiences. These associations can be influenced by cultural norms, social context, and individual beliefs (Luszczynska, A., & Schwarzer, R, 2015). **Psychodynamic Theory** suggests that food can be used as an alternative to satisfy emotional needs that are not being met in other areas of life, and to cope with stressful events or difficult circumstances. For example, individuals can use comfort food as a coping mechanism against negative emotions like sadness, fear, anger, anxiety and stress. Food can soothe problems, serve as a distraction or be used to fill an emotional void (Deal, 2007).

RESEARCH METHODOLOGY

This research study examining the interconnectedness of food and emotions is undertaken through laboratory experiments, neuroimaging studies, and cognitive psychology research. Laboratory experiments involve manipulating different aspects of food (e.g., taste, aroma, texture) and measuring changes in mood or brain activity. Neuroimaging studies aid in identifying brain regions that are activated during food-related emotions. Cognitive psychology research assists in investigating the cognitive processes (e.g., attention, memory) that underlie food-related emotions.

DATA COLLECTION AND ANALYSIS

A public survey was conducted using Google forms and circulated amongst the selected study group to solicit unbiased responses to certain questions and obtain a wide range of data. The framed questions, collected responses and analysis of gathered data are shown below.

1. Do you consider yourself to be a connoisseur of good food?

Table 1. Food aficionado chart

Options	No. of Respondents	Percentage
Yes	91	52.6
No	37	21.4
Maybe	45	26
Total	173	100

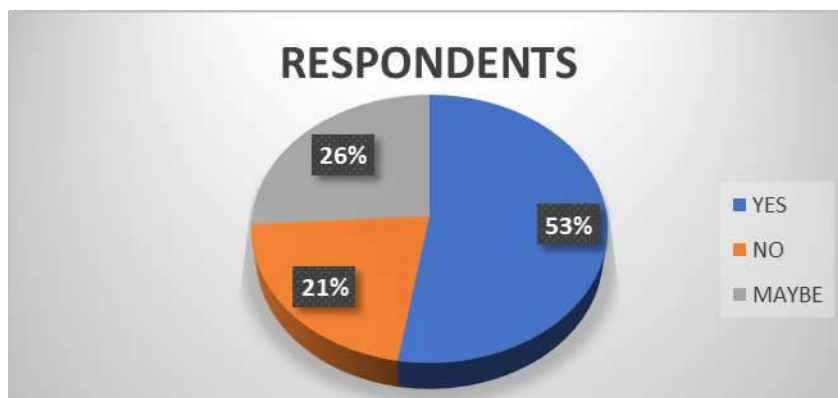


Fig.1 Interest in Food Chart

Most people are eager to expand their palate by trying new foods, tasting diverse dishes, incorporating unusual flavours, attempting fusion cooking and exploring different cuisines. Tried and tested recipes, on the other hand, have their importance for the finicky eaters. Writing food blogs and

posting restaurant reviews on social media along with enticing candid photos is a hobby in itself, dissecting aspects such as quality, quantity, ingredients, price, health quotient, value for money and ambience of the eatery. From the conducted survey, it is evident that more than half the respondents consider

themselves to be very interested in food. And, many are rather keen on food, only not to the extent of the majority. However, a coin has two sides and so there are about 37 of those who

might not be that enamoured of food, looking at it functionally as mere sustenance.

2. Do you believe that the food you consume affects your emotional state?

Table 2. Food affecting emotional state

Options	No. of Respondents	Percentage
Yes	120	69.4
No	14	8.1
Maybe	31	17.9
Always	8	4.6
Total	173	100

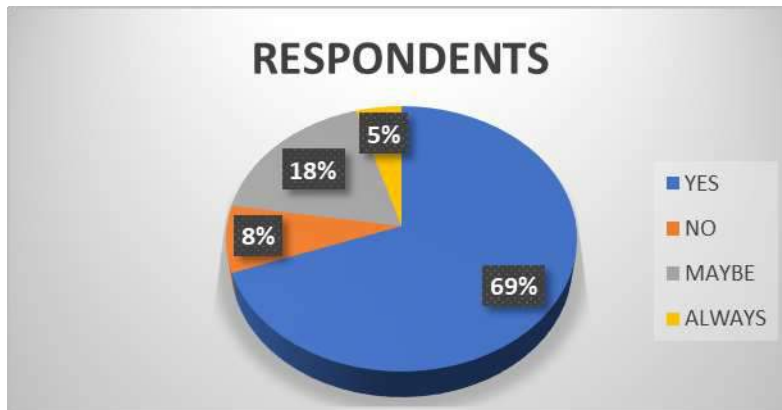


Fig.2 Food Affecting Emotional State

It maybe emphatically stated that food choices can bring about changes in moods, thinking, feelings, emotions or mental health. Bananas, for example, have been found to be a happy fruit as they have the essential amino acid called *Tryptophan*, which gets converted into the feel-good chemical called *Serotonin* in the body. This delicious fruit is packed with nutrients and is considered as a healthy and filling snack. It has proven benefits of being an energizer, keeping one relaxed and upbeat, improving one’s mood and generally making a person feel happier. The obtained data reveals that almost 74% people

{69.4% + 4.6%} have felt an emotional change and behaviour modification after consuming food and can relate to it among which a few are absolutely sure about the interconnectedness of food intake and emotions. Some participants are unsure as to whether the consumed food does affect their emotions and feelings at times and are not too certain that it can be stated as a blanket statement for all the food consumed. A miniscule percentage of respondents believe that they have not experienced any sort of emotional change relating to the food they consumed.

3. Do you often crave a specific food?

Table 3. Food cravings

Options	No. of Respondents	Percentage
Yes	114	65.9
No	34	19.7
Maybe	25	14.5
Total	173	100

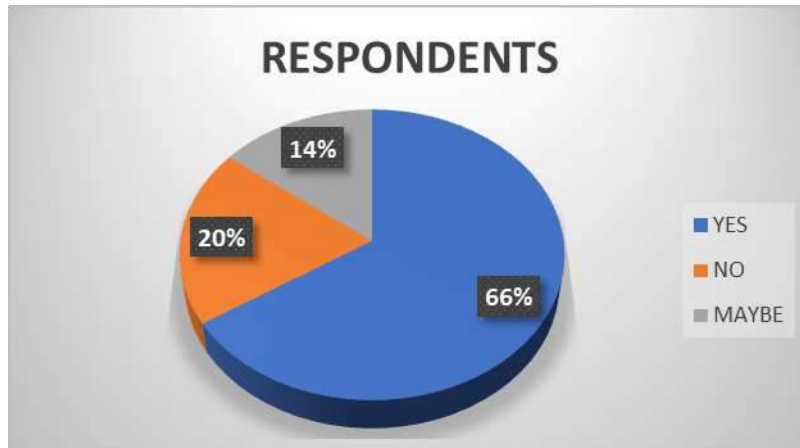


Fig.3 Food longings of the respondents

Food cravings that manifest as an intense need or longing for certain foods is very common among people of all age groups, it is quite often an uncontrollable urge to eat an energy-dense and unhealthy processed food, often with excessive amounts of salt, sugar, oil and fat. Upon analysing the data, it is clear that it corroborates the findings of other experimental studies which have analysed the psychology behind the phenomenon of food craving. Scientific studies have established that almost all men and women do experience food cravings, differences being only in the magnitude and specificity of the craving. As seen in the

above data, more than 65% emphatically state that they do experience intense cravings for specific food, often tantalizing sweet and salty junk foods, and a few among the ‘Maybe’ category too might feel likewise. Although food cravings are common, there are around 19% of people, a minority, who do not experience any sort of craving for food or may not have had any noticeable yearning for unhealthy sugary, salty or fatty foods as such.

4. What type of food do you generally enjoy eating?

Table 4. Food preference

Options	No. of Respondents	Percentage
Spicy	112	64.7
Sweet	45	26
Salty	10	5.8
Sour	4	2.3
Bitter	2	1.2
Total	173	100

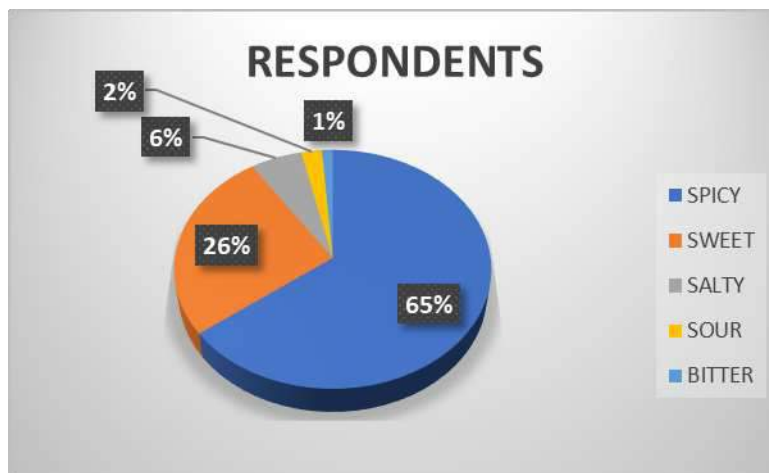


Fig.4 Food taste preference

Humans have receptors in taste buds that detect the five well-recognised, basic taste and flavour elements of food. From the above collected data, it is clear that a huge majority of the population prefer to consume food prepared with pungent

spices like chillies and peppers most of the time to any other kind of food. Sweet food items were chosen by only 26% of the respondents. Surprisingly salty food items, anticipated to be preferred by many, were only chosen by 5.8% of the

respondents. Since potato chips are a hugely popular salt-laden snack consumed by hundreds of people all around the world, it was naturally assumed that a decent percentage would go opt for this category of foods. While salt does enhance the flavour of foods as a vital seasoning, those hardwired with a preference

for salty taste choose to eat foods rich in sodium. Preference for sour food items that have a tangy or tart taste such as fermented and pickled foods, is seen to be almost 2.3%, coming in the second place with bitter food items being chosen the least.

5. Which food type helps uplift your mood or makes you happy?

Table 5. Indicators that denotes happiness through food

Options	No. of Respondents	Percentage
Spicy	67	38.7
Sweet	94	54.3
Salty	8	4.6
Sour	2	1.2
Bitter	2	1.2
Total	173	100

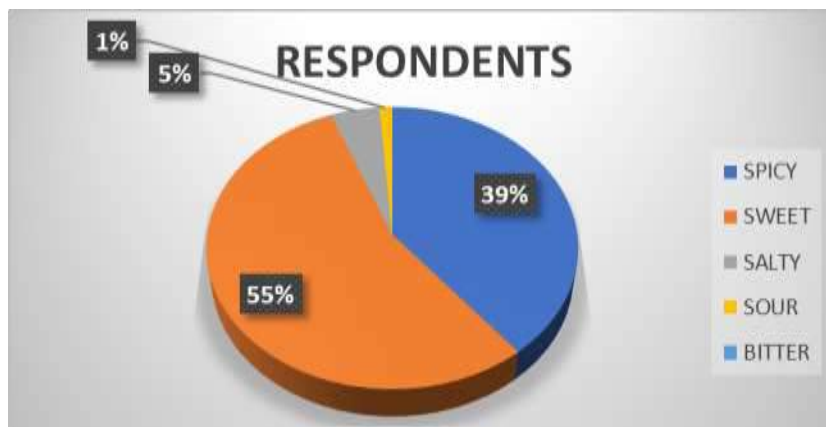


Fig.5 Happy index

The above data clearly shows that most people relate happiness with sweet food with over 54.3% enjoying sweet treats as they boost their mood, and induce positive feelings by releasing happy hormones and feel-good chemicals. Spicy food is not that far behind with 38.7% people choosing it although food items with a high spice quotient can put taste buds on fire and burn the mouth. Salty (4.6%) and sour (1.2%) food items too are preferred by some people but are comparatively very low. It is

surprising that there are people who like bitter tasting food despite a majority disliking it. This category encompasses far more than only vegetables like bitter melon or fenugreek leaves and medication that leaves an unpleasant aftertaste of bitterness. There are a number of food items that are consumed on a regular basis in everyday life despite their bitterness and many adults acquire a taste for and often crave bitter foods, such as alcohol, coffee, dark chocolate, and so on.

6. Do you eat more when you are stressed, angry or bored?

Table 6. Compulsive eating habit

Options	No. of Respondents	Percentage
Yes	96	55.5
No	77	44.5
Total	173	100

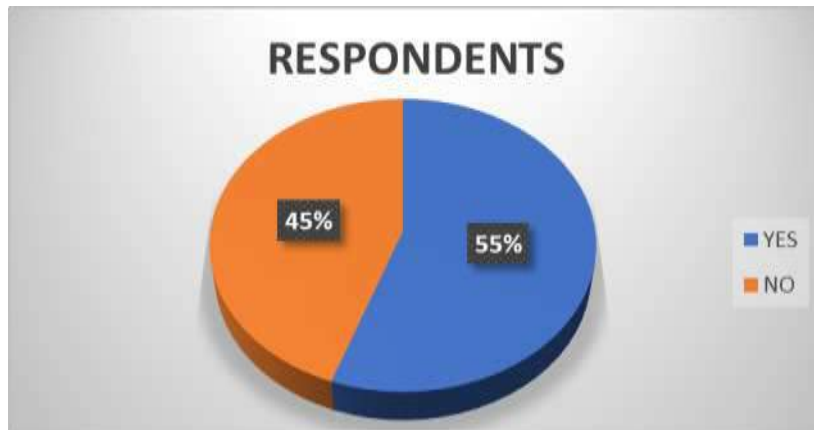


Fig.6 Stressed eating

Very often people tend to eat more when they use food as a coping mechanism against negative emotions such as stress, sadness, worry, anxiety, boredom, fear, nervousness or even to just prolong their duration of joy. In addition to making them feel better, food equips them to manage their emotions and difficult situations. It also serves as a welcome distraction from unpleasant emotions, offers relief from distressing events and serves as a means of escapism. From the above collected data, it is noted that more than half the people have a habit of eating not to satisfy hunger but to suppress, soothe, distract or deal with emotional changes that they feel they cannot handle. The easy

availability of myriad food options has only served to increase consumption levels. It is important to keep in mind that easily available processed food items are generally fried items and other junk food loaded with calories that have negative health effects on the body due to high levels of added salt, sugar, oil, chemicals and saturated fats. So, continuing this psychological eating habit and improper eating behaviour for a prolonged period of time must be halted at the earliest and a corrective method must be devised to avoid binge eating and establish healthy eating habits.

7. Have you ever felt that food has control over you?

Table 7. Food taking control

Options	No. of Respondents	Percentage
Yes	51	29.5
No	92	53.2
Maybe	30	17.3
Total	173	100

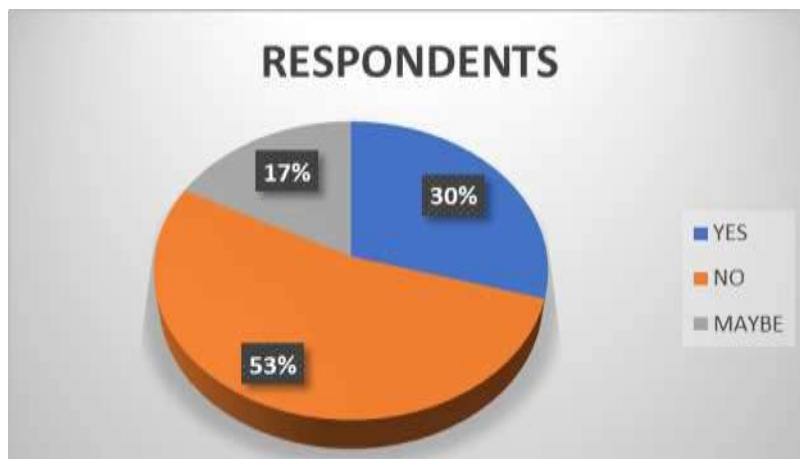


Fig.7 Belief over Food taking control

It is important to control what one eats, how often one eats and the quantity one eats. Eating too little to avoid weight gain, eating too much on a regular basis without regulation and eating without a need to satiate hunger indicates a problem of food consumed taking control over a person and can lead to two types of eating habits:

- One, where the body is deprived of even the basic requirement of food with a severely restricted diet to

keep up with the unrealistic standards of an ideal body image set by the society and with a constant obsessive need to achieve that standard due to dissatisfaction with the body. Eating disorders like anorexia and bulimia, preoccupation with weight loss, fear of putting on weight, skipping meals and restrictive diets are abnormal behaviour that is increasingly prevalent among youngsters nowadays.

- Two, where large portions of food are frequently consumed and eating spirals out of regulatory control into a compulsive behavioural disorder attributed to emotional changes or guilt eating. It reaches a state where the binge eater cannot stop or control himself / herself from overeating.

It is a positive note here from the data that most people do not feel controlled by food. But it must be borne in mind that the issue of losing control over food intake may go unnoticed by many due to metabolic differences between people due to their body types too.

8. Ladies, which food type helps you with your period cramps or cravings?

Table 8. Period cravings

Options	No. of Respondents	Percentage
Spicy	11	7.1
Sweet	35	22.6
Salty	2	1.3
Sour	5	3.2
Bitter	2	1.3
Not Applicable	100	64.5
Total	173	100

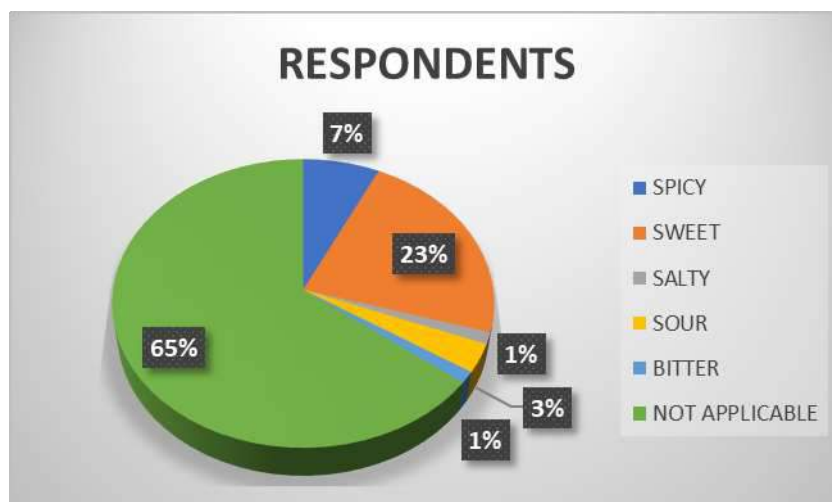


Fig.8 Food cravings of women during periods

Premenstrual syndrome manifests in more than 150 varying symptoms because of fluctuating hormones but the most frequently experienced and reported are increased appetite and food cravings, particularly for carbohydrate, salt and sugar rich foods, which can help boost the mood prior to the menstrual cycle. Since most of the respondents happened to be male, the 'not applicable' option is evidently chosen more. Among the female respondents, most have chosen sweet food items to satiate their craving for sugar. Next comes spicy and a small percentage of women have chosen salty (1.3%) and sour (3.2%) snacks and food items as comfort foods. And, as anticipated, bitter foods are at a low 1.3%.

FINDINGS, SUGGESTIONS AND ANALYSIS

- During the course of collecting all the data needed for the present study and analysing the gathered data, it is clear that people are a bit hesitant to give a clear answer when presented with a question. If there is a possibility to give an answer as neither *Yes* nor *No* which are both close-ended, then everyone prefers to select that option, i.e. *Maybe / Possibly / Don't Know?*
- The study offers insights into the basic food habits and eating behaviour of the selected study group, the

flavours they prefer, the frequency of eating, food consumption pattern, food choices, etc.

- Modern society is obsessed with food, there is a huge demand for exotic cuisine by the upcoming generation who snack often and love experimenting with different flavours of food, and there is greater awareness of the benefits of healthy eating. Food is constantly in the spotlight as there is a perennial search for innovative fusion dishes, creative presentations and new food experiences. Food consumption patterns have undergone a radical change, food trends shape consumer behaviour and there is fresh vitality in the food industry with an evident passion for food. The analysis of the collected data reveals that the elder category of people has a very different view about this topic of discussion.
- It is important to bear in mind that the limitation of the present study is that the ratio of men to women who participated in this study is not the same which indicates that the resulting answers to the posed questions may vary accordingly.



Influence of Molecular Gastronomy

The visual appeal of the presentation of food that is placed on the table has an equally important role as the ingredients that go into the making of the dish. Food plating techniques help to enhance the visual allure of food and entice the appetite with an artistic blend of colour, size, arrangement and texture. The food is first a visual treat for the eyes with an enticing presentation. The aroma that wafts from the dish reaches the nostrils and is captured by the olfactory senses. The brain reacts to sensory inputs and cues received from the sight and smell of food, it anticipates what the food item will taste like and accordingly prepares the taste buds, making the mouth water in anticipation. Lastly, one takes a bite of the dish and the taste buds are stimulated to enjoy its flavour, its texture, the feel of the food in the mouth and the explosion of several flavours with every succeeding mouthful (Giang, 2023).

However, the modern culinary science of molecular gastronomy has changed the traditional and conventional manner of cooking with new techniques exploring ways and devising methods to transform dishes into culinary masterpieces. It involves novel and unexpected ways of creating and presenting food with improved taste and flavour after a thorough study of the interactions between ingredients and an understanding of the chemical and physical processes that occur during cooking. Such experimental futuristic cooking reinvents dishes by exploring aspects like brain imaging and flavour perception to produce gastronomic wonders. The first look can be confusing and deceptive. Skilled practitioners tweak the taste and appearance of dishes in their attempt to offer an entirely new and unexpected culinary experience. Molecular gastronomy is a new field in the food industry that combines technical, artistic, and social elements in the creation of novel foods that are a treat for the senses with a blend of unusual ingredients, textures, taste and flavours.

CONCLUSION

In summary, it can be stated that research on the relationship between food, eating behaviour and emotions is a complex and interdisciplinary field that offers many opportunities for exploration and discovery of how food impacts the brain and behaviour. Scientific studies on eating disorders and the psychological issues triggering food cravings highlight the complex interplay between biology, psychology, and culture in shaping the emotional associations that people have with food. Future research in this area will help to identify effective strategies for fostering a healthy relationship with food and mindful eating, wholesome food choices and improved eating habits for enjoying optimal health and overall sustained emotional wellbeing.

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ARUP KUMAR DUTTA'S NOVEL- THE KAZIRANGA TRAIL, – AS A JUVENILE DETECTIVE NOVEL

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ABSTRACT

Arup Kumar Dutta is a prominent literary figure in English in North East India. He is the first writer who writes juvenile English detective novels from the region. He has achieved many awards- Life Time Achievement Honour by Association of writers and Illustrators for children (2014), Padma Shri by Government of India for children literature in 2014, children book prizes from Children's Book Trust for The Kaziranga Trail which was published in 1978.

In the novel we find child heroes. They are very talented and hard working. They are conscientious and good. They want society to be good and so they take risks in their lives to catch the criminals of various levels. In we find the heroes are Bubul, Dhanai and Jonti who are able to catch the rhino poachers.

In the novel we have seen the role of animals also. In TKT we find Makhani, the elephant who helps the teen heroes to travel through the thick forest.

ABBREVIATION :*I. TKT- The Kaziranga Trail.*

KEYWORDS: *Adventure, teenagers, young -adult, fiction, novels, detective, juvenile, miscreants, criminal.*

In the collection of novels, Adventure Stories of Arup Kumar Dutta there are four detective children's novels-The Kaziranga Trail is the first novel. They are juvenile detective novels or adventure novels where the heroes catch the poachers or criminals. The heroes are teenagers. With the help of elders, they are able to catch some miscreants, unscrupulous people.

Here we find the main characters are only teenagers. They are very ordinary boys but showed their intelligence at the time. In the novel of Arup Kumar Dutta, we find that the characters are real like. They are not those who are hard to imagine. For example, Dhanai, Jonti and Bubul in TKT are like any Assamese boys who live in the village. They are not mere puppets; they are endowed with flesh and blood. The author makes the ordinary boys extraordinary with their insight, intelligence and circumstance. So, the readers accept them without any doubt. Moreover, the author portrays some Police Superintendent, Police Commissioner, and constables who are duty bound, honest and endowed with human qualities.

The novel is truly an enjoyable novel. The tactics are used and explained very nicely. We remember the novels of famous Assamese writer Ranju Hazarika, while we read detective tactics.

Although in all the novels we find juvenile heroes: it does not mean that the elders have little role in the novels. In the novel we find some miscreant adults and opposite to them there are so courageous, duty bound, police officers, constables and some patriotic persons in the novels.

In the novel we find a third person Narrative. We find that the narrator knows all. So, the point of view of the novel is

a third person point of view. The third person point of view is also known as the omniscient point of view. Regarding the point of view, we can see the following lines as guiding lines:

'...the narrator is free to move at will in time and place, to shift from character to character'...

(Abrahams M.H. and Harpham Geoffrey Galt, A Handbook of Literary Terms, P-234.)

Crime and misdirection of the readers are two striking features of detective novels. In almost every detective novel we find such features. The Oxford Companion to English Literature writes about it in the following words:

"Crime has been a staple of storytelling since its beginnings, misdirection of the reader, leading to striking revelations at a late crisis point, has equally had its special position in fiction." (Brich Dinah, The Oxford Companion to English Literature, p-289.)

In the children novel of Arup Kumar Dutta also we find the above two features. The novel is about the crime of killing rhinos by poachers in a National Park of Assam named Kaziranga National Park. The crime against the killing of the rare animal is continuing in the national park. The author tries to nab the poachers in the novel in a fictional way by some teen heroes. Regarding the second element i.e., the 'misdirection', we find this element in this novel also. For instance, in TKT we find that when Mr. Neog and the rescue party went in search of



Bubul and Jonti who were in the hands of the poachers then they went to the deserted bungalow. The poachers got the time to hide. This is an instance of misdirection.

In the novel "Kaziranga Trail" the author raises one of the burning problems of Assam that is the killing of the rhinos in Kaziranga National Park. The novelist writes the novels so impressively that the readers will enjoy reading. The actions are happening so rapidly that readers will not get bored. They keep on reading in curiosity about what will happen next time. How the teenage heroes will be saved, how they will unfurl the misdeeds of the miscreants-these are the major things of the novels.

In the novel we find about the activities of the poachers, their tricks of killing the rhinos and their nexus with their own country and foreigners-smugglers of horns. The rhino's horn is in great demand in the smuggling market. For which some of the guards, because of the greed of money joined with the poachers and secretly helped them to kill the rhino and some of them are also eventually caught.

The poachers are the expert forest men. They know the characteristics of the wild animals. The rhino always goes straight. Therefore, in the path of the rhino they made a big hole and covered the big ditch with herbs. When the rhino falls there, they cannot go out and the poachers cut the horn off from the rhino. The author describes how a rhino is trapped and what actions are to be done by the poachers.

"The poachers had watched the movements of the rhino for a few days. When they were sure of the path it took, they dug a deep pit near a dung heap and covered it with strips of bamboo, mud and grass. Then they built a shelter for themselves at a safe distance and waited for the animal to fall into the trap." (Dutta Arup Kumar, *The Kaziranga Trail*, P-7)

The poachers are merciless. They cut the horn of the precious animal when it was in a state of no self-defence. As soon as the rhino falls into the pit it cannot come out. When the rhino falls into the pit then they promptly execute their action.

"The rhino fought with all its strength. But the men were experts and soon had the ropes all-round the animal's body.....The leader of the gang moved into action.....He lifted the dao and began to hack away at the animal's snout to remove the horn.....His hands were bloody. On his face was a triumphant, fiendish smile." (Dutta, TKT, P-8)

There are some conscious citizens nearby who always protest such action of the poachers. The whole Assam is against rhino killing except the poachers. Dhanai, Jonti and Bubul are such boys who love the Kaziranga and specially know the value of one horned rhino. When they saw the dead animal the next day, they instantly knew about it.

"The horn is gone. 'Dhanai was grim. 'Poachers! There is no time to lose. We must inform the forest authorities at once.'" (Dutta, TKT, p-11)

They informed the District Forest Officer in charge of wildlife Mr. Neog. Poachers seemed to be more cunning and cautious than the forest guards. Mr Neog could find the reason.

"Unfortunately, that is the only conclusion I can draw from the way the poachers have been operating. We all know that the wages our men get are not too high. Perhaps one of them has been tempted with a big sum of money."

(Dutta, TKT, p-24)

Mr Neog's surmise was true. Mr Phukan, another forest officer, was involved in the killing of rhinos. He got a lucrative sum of money from the poachers and horn traders.

While the boys, Dhanai, Jonti and Bubul roam on the elephant back in the Kaziranga, the readers can visualise the National Park and its deftness. Usually there are many sounds of birds, cricket, grunts of a rhino, roar of a tiger etc. The author presents the plot very naturally. In such a natural scenery poachers kill rhinoceros in Kaziranga.

The rhino killing is a menace to Assam. The government even fails to nab the culprit in most of the cases. It is because there are some people who are like Mr. Phukan, as we find in the novel, gets money from the poachers and secretly allows them to kill one of the endangered animals of the earth. Who are appointed as the protectors of the wonderful animals but they serve as the traitors for some extra money. They sell themselves or sell their conscience. So, there should be vigilance on the guards and the officers also.

There are some honest, duty-bound officers and guards also in the department of forest. For their effort only we get the surviving rhinos. One of such officers is Mr. Neog. Such officers always do their duty and try to save the rhinos even when facing grim circumstances.

1. Thus, we can say that the *Kaziranga Trail* of Arup Kumar Dutta is an interesting juvenile detective or mystery novel. It has all the elements of such a novel. It is a gripping novel where readers are captivated by the narrative swiftness of the author.

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UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY IN THE DEVELOPMENT OF KINDERGARTEN LEARNERS UNDER THE NEW NORMAL

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ABSTRACT

The study determined the utilization of Information Communication Technology in the Development of Kindergarten Learning during this new normal. As we are all experiencing this pandemic, it dramatically affects the educational system wherein face-to-face became forbidden and online classes became the alternative way to continue the learning process. There are five utilization of ICT focused in this study: Language arts, Numeracy, Science, Music and arts, and social skills. 1-4 Likert scale questionnaires were used to gather the data needed. A total of 80 respondents, 50 parents and 30 teachers were selected to answer the questionnaire in this descriptive type of research. Weighted mean, frequency count, percentage and Z-Test were among the tools utilized in analyzing the gathered data. The study found that utilization of ICT was very useful ranging 3.25-4.00. Correlational analysis showed that learners can develop their competencies or domain without the utilization of ICT. To improve the utilization of ICT during this pandemic it is important to strengthen the practices of teachers as well as the parents.

KEYWORDS: *development, information communication technology, kindergarten, learners, new normal, utilization*

INTRODUCTION

Information and communication technology or ICT plays a significant role in the young generation's education. Indeed, ICT has become one of the most dominant tool in the area of education. ICT has become one of the basic building blocks of modern society in such a short time due to the unprecedented onslaught of the pandemic. It has brought many countries in apprehension as educators need to master the necessary skills and concepts of ICT as part of the core of education, alongside reading, writing, and numeracy. Education's function is to preserve and provide for change. It must maintain the values, beliefs, and customs yet must also be ready for a change. ICT contributes to that change, specifically in early childhood education.

Early childhood education is, thus, a critical stage of development because the culmination of learning for one generation is embodied at the beginning of one's lifetime. After all, children are the common basis for all sustainable development dimensions that will occur in the coming decades. Early childhood foundations are laid down as the functioning and brain development subsequently lead to lifelong development in which the child is at the stage of vulnerability and sensitivity to external influence. Early exposure of a child to technology may lead to better experience and will help in the development of learning. As modern society brings more opportunity, technology allows children to quickly adapt to multiple learning styles and

provides the flexibility of schedule to meet today learners' various needs. According to Hatzigianni and Margetts (2012), ICT presents a new space for exploration and discovery to young children, offers challenging activities and responds to children's curiosity. On the other hand, some scholars argued that ICT use leads to a lack of exercise, isolated lives, low concentration, impaired language development. This idea has been debated, but ICT proves its most useful way as this pandemic hits the world wherein ICT is used to its fullest to cope up with the "new normal".

The world was caught in a frenzy as this novel coronavirus spreads and brings fear and apprehension to everyone regardless of any status in life. Everything turns out to be a new experience, and one of the most affected is the educational system. The New Normal is the term that has been used in since the onset of this pandemic. Thesaurus dictionary defined new normal as "the current situation, social custom, etc., which is different from what has been experienced or done before but is expected to become usual or typical". ICT then, has a big role in making the learning process continue despite the challenges of this new normal.

This study aims to find out the development of young children learning by utilizing ICT, and how the processes of learning are realized during this new normal.



Theoretical Framework

Information and communications technology (ICT) refers to all technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing, and transmission systems, and network-based control and monitoring functions. Although ICT is often considered an extended synonym for information technology (IT), its scope is broader. Hence, information and communication in education are extending its capacity for the development of children. This study is anchored on the theory of Constructionism which asserts that computers are powerful educational technologies when used as tools for supporting the design, construction, and programming projects. Papert's 'constructionism' sheds light on how people's ideas get formed and transformed when expressed through different media, when actualized in particular contexts, when worked out by individual minds. The emphasis has shifted from general laws of development to individuals' conversation with their own representations, artifacts, or objects-to-think with." (Ackerman, 2004).

Statement of the Problem

This study, entitled "Utilization of Information and Communication Technology to the Development of Kindergarten Learners Under New Normal," aimed to figure out the use of ICT on child's education during the Covid-19 pandemic.

Specifically, it sought to find answers to the following questions:

1. What devices, internet connections and modalities do pupils use at home for on-line learning, specifically the:
 - 1.1. Electronic device,
 - 1.2. Wi-Fi Connection, and
 - 1.3. Modalities for teaching and learning?
2. How may the use of ICT learning be described in the following areas:
 - 2.1. Language Arts,
 - 2.2. Numeracy,
 - 2.3. Science,
 - 2.4. Music and Arts, and
 - 2.5. Social skills
3. How may the development of the children be described using the technology?
4. Is there a significant relationship between the use of gadgets and internet access use at home to the utilization of ICT and to the development of the learners?

Null Hypothesis

The following were the null hypotheses :

1. There are no significant differences between the use of gadgets and internet connections at home to the development of different learning areas among young children.

RESEARCH METHODS

Research Design

This study used the descriptive-correlational research method among parents and teachers of Kindergarten Learners at public schools in Zaragoza, Nueva Ecija. Purposive sampling was employed to get the needed data relevant to the research problem. Creswell (2002) defined correlation as a statistical test to establish patterns in the relationship of the variables under study.

Quantitative research was also used to get the data needed specifically on how technology is being used by children at home. This is defined as a systematic investigation of phenomena by gathering quantifiable data and performing statistical, mathematical, or computational techniques. Quantitative research collects information from existing and potential customers using sampling methods and sending out online surveys, online polls, questionnaires, etc. The results can be depicted in the form of numerical. After careful understanding of these numbers to predict a product or service's future and make changes accordingly.

Research Locale and Sampling Procedure

This study was conducted in public schools in the municipality of Zaragoza. The respondents were selected teachers and parents of Kindergarten learners composed of fifty (50) parents and thirty (30) public school Kindergarten teachers. The respondents were from different public schools of School Division Office of Zaragoza Annex.

To determine the sample size required by the study, the researcher used the purposive sampling technique. The researcher selected the respondents of this study to determine the use of ICT on child's education amidst new normal.

Research Instrument

The researcher used the following instrument and techniques in gathering data:

1. Documentary analysis. The researchers reviewed different related literature and studies.
2. Questionnaire-Checklist. The questionnaire has four parts, the first part queried on the profile of the respondents such as age, sex, civil status, educational attainment and relationship with the children. The second part is the gadgets and internet access use in online classes and distance learning experiences, the third part is the evaluation of utilization of ICT in different learning areas in Kindergarten and the last part is the open-ended questions.

Best practices can be acquired from utilization of ICT in learning different areas in Kindergarten based on the findings of the study. As to validity of the researcher-made questionnaire, the researcher drafted the questionnaire, and was shown to her research adviser and members of the panel for review. After which it was tested to a different sample or group so that vague questions can be deleted, or revised. Then, the questionnaire was revised again and finalized, with corrections incorporated. Then, upon final approval it was administered to the respondents of the study.



The questionnaire-checklist was be rated using four point scale where, 4 Very Useful 3 Useful, 2 little of use, and 1 means No use at all.

3. Interview. The researcher also conducted interviews to some parents and teachers to validate the findings of the study .

Data Gathering Procedure

Before the distribution of the questionnaire, the researcher requested permission from the principals of the public schools concerned. Upon approval, the researcher requested the assistance of the respective advisers to distribute the questionnaires to the parent respondents. The advisers virtually or personally guided the parent respondents in answering the

The scales below were used to verbally interpret the degree of the responses to evaluate the modalities used by the respondents.

Range
3.25-4.00
2.50-3.24
1.75-2.49
1.00-1.74

Verbal Interpretation
Always
Often
Seldom
Never

The scales below were used to verbally interpret the degree of the responses to evaluate the utilization of ICT in different learning areas in Kindergarten.

Range
3.25-4.00
2.50-3.24
1.75-2.49
1.00-1.74

Verbal Interpretation
Very Useful
Useful
Little of Use
No use at all

Z -Test will be employed to compare the assessment of the parents and teachers and to yest the significant differences.

A narrative analysis was also done to the open-ended answers of the respondents.

RESULTS AND DISCUSSION

IA Gadgets/Devices and Internet Connection Pupils Used at Home for On-Line Learning

Gadgets/Devices used at home

Table below presents the gadgets being used by learners at home. where 46 or 57.50 percent used smart phone while 1 or 1.25 percent used desktop as a gadget used at home. It shows that smartphone plays a big role in the education of young children to reach out also with their teachers and to their lessons. Graddol as cited insalmah 2016 commented that “technology lies at the heart of the globalization process, affecting work, education and culture”. With the wide spread presence of phones, computers and mobile devices now affordable in our pockets, it becomes very easy to connect to a variety of information sources and communicate with any one in any place everywhere we go. Today, we are dealing with a new generation of technology.

Wi-Fi Connection being used

As can be seen from the table, 35 or 43.75 percent used Wireless connection and 22 or 27.50 percent used data as Wi-Fi Connection. Internet or Wi-Fi connection is the greatest gift of

questionnaire. The researcher discussed the title and the purpose of the study, and the procedure on how to answer the questionnaire. After gathering all the questionnaire, the researcher tallied the answers for statistical treatment.

Data Analysis

The data gathered were analyzed using the following:

1. Frequency and percentage distribution and rank to present and analyze the profile of the respondents.
2. Weighted Mean was utilized to analyze and assess the progress of the respondents in playing the string instruments. The formula used was:

technology which has made life easier. It is not the only fastest mode of providing information but today it is serving us in various ways. One of the biggest benefits that internet users enjoy is communication; people living in different parts of the world can communicate with each other through the internet. Equipped with most modern interactive tools like emails, chats, SMS, voice SMS, internet provides fastest and most hassle-free communication (Nkum,2011). In the open-ended question, the parents and teachers were asked about the challenges they have met using on-line classes:

The most common challenges that the respondents met using online class are the stability of the internet. Some of them experienced poor/slow internet connectivity or having trouble with the signal which leads them to miscommunication. Children also quickly get distracted, and they say that online class sometimes consume most of their time.

With this, the learners at home need a good WIFI connection in order to learn and communicate with the teachers and other kids. When some of them use data which has a very limited capacity to be useful and to connect, then limitations and problems on connectivity are being experienced by the learners.

Kind of bandwidth/speed

The table shows the kind of bandwidth/speed reveals that majority of the respondents with 50 or 62.50 percent who



used 10mbps while 14 or 17.50 percent used 30 to 50 mbps. According to Rainie (2010) today’s online education has noticeably improved. With faster connection speeds, more classes can be offered online by postsecondary institutions, and more students can participate in online learning.

Internet/Wifi Connection being Used at Home

Table below shows that 45 or 56.25% of the total population used Limited internet/Wi-Fi connection while 35 or 43.75% used unlimited internet/Wi-Fi connection at home.

Online Platform being Used

The proceeding data shows the most common online platform used were 34 or 42.50% of the total population used Google Meet while 17 or 21.25% used Zoom Meeting as online platform. According to Rosen and Beck-Hill (2012) reported on a study programme that incorporated an interactive core

curriculum and a digital teaching platform. The online platform contained teaching and learning tools.

Most common way to communication

Data on above table indicates that majority of the respondents with 74 or 92.50% used Messenger as common way to communication while 1 or 1.25% used Text Messaging. Technological advancements in education have easily and quickly connect with their family and friends inside and outside the country. This quick and easy way of communication has accelerated the demand for the latest mobile gadgets multiple purposes uses like voice calls, texting, chatting, web browsing, multimedia, emails and more platform that can be use in communication. Peter (as cited in Nashwa 2015) stated that the mobility of these devices enables learning both in formal and non-formal settings as we do not need fixed locations for study, and consequently our way of learning becomes different.

Table 2-A Gadgets and Internet Access Use

Gadgets	f	%
Smart Phone	46	57.50
Tablet	30	37.50
Laptop	3	3.75
Desktop	1	1.25
Total	80	100%

Table 7 Wi-Fi Connection being used

Wi-Fi Connection	f	%
Wireless	35	43.75
Fiber optics	23	28.75
Data	22	27.50
Total	80	100

Kind of bandwidth/speed

Bandwidth/speed	f	%
10 mbps	50	62.50
20 mbps	16	20.00
30 to 50 mbps	14	17.50
Total	80	100.00

Internet/Wifi Connection being Used at Home

Internet/Wifi Connection	f	%
Unlimited	35	43.75
Limited	45	56.25
Total	80	100.00

Online Platform being used

Online Platform	f	%
Zoom Meeting	17	21.25
Google Meet	34	42.50
Video Call	29	36.25
Total	80	100.00



Most common way to communication

Common way to communication	f	%
Messenger	74	92.50
Text Messaging	1	1.25
E-mails	5	6.25
Total	80	100

I-B. Common Modalities Used in Teaching-Learning

Modalities scale as shown on Table 3 reveals that the statement “Use of printed modules” reflected the highest mean of 3.81 with a verbal description of Always. While the statement “On-line meeting” accumulated the lowest mean of 2.85 which had a verbal description of Often. The use of a module presents a more flexible learning environment for both instructors and learners, Cheng and Abu Bakar (2017). This means that the teachers during this New Normal were printing the modules coming from the DepEd, having been distributed to be answered by the children through the help of their parents, and their parents

have to submit the modules to the teachers for evaluation. One thing more, the teachers and parents were taking and uploading pictures as evidences of learning using their smartphones and can be easily uploaded through messenger. Aside from the modules and pictures, it also revealed that teachers were preparing pre-recorded lessons that can be watched by the pupils with their parents, they also used educational applications that are appropriate for kindergarten children and do on-line meeting as well to have interaction with the kids while they are at home.

Table 2-B Modalities Used

	Statement	Mean	VD
1	Watch pre-recorded lessons in YouTube	3.09	Often
2	Use of printed modules	3.81	Always
3	Use educational apps in learning	3.14	Often
4	On- line meeting	2.85	Often
5	Taking and uploading pictures	3.44	Always
6	Recording videos for tasks making	3.16	Often
	Weighted Mean	3.25	Always

Legend: 3.25-4.00 – Always 2.50- 3.24- Often 1.75-2.49- Seldom 1.00-1.74- Never

II. Utilization of ICT in Teaching and Learning Language Arts, Numeracy, Science, Music and Arts and Social Skills

Table presents how ICT was being utilized in teaching learning the following:

Utilization of ICT in Language

The utilization of ICT in Language Arts as presented on the table 4 shows that the respondents reflected on the utilization of ICT in Language in this new normal with an overall weighted mean of 3.77 (Very Useful). As indicated on the table, the statement “recognizing letter names and sounds (ABC)” reflected the highest mean of 3.96 (Very Useful) which means that the respondents have seen ICT as very useful in this statement. However, the statement “developing fluency in English communication” got the lowest weighted mean of 3.59 (Very Useful). Using ICT to study English or Language gains a deep understanding of the way the learners experience and perceive ICT use may help “shed light on how best to determine their educational uses” (Fujimoto, 2012, p.165). The Pinterest is an educational application in the internet that provides numerous ideas how to teach reading to young kids. There are free printable instructional materials for reading A-Z which are very colorful and creative. It also provides different learning activities that the children can do both in school and at home. Burnett concentrated on literacy and technology in the infant to eight-year-old age range. Burnett’s (2010) method for locating research articles was

well explained, and it resulted in 36 peer-reviewed articles. These articles were divided into three categories: technology as a literacy delivery system, technology as a site for text-based interactions, and technology as a medium for meaning-making. For the first category, she reported that technology as a literacy delivery system had either a positive or no impact on various language skills, motivation, and engagement. Only a few studies were found in the second category, technology for interaction. These few studies suggested that when children collaborate on digital texts or literacy software, they interact positively with one another. Regarding the third category, she concluded that technology can be successfully used for meaning making with this age group, particularly when it is used to connect with the real world.

Utilization of ICT in Numeracy

The table presents the respondents utilization of ICT in Numeracy. The result shows that the item “counting numbers” reflected the highest weighted mean of 3.85 (Very Useful). The item “telling time” got the lowest mean of 3.55 (Very Useful).

Result also shows an overall weighted of 3.69 (Very Useful) means that the respondents see ICT as very useful in this time of pandemic. According to Higgins et.al (2012). There is a large body of research which has examined the impact of digital equipment, tools and resources on children’s numeracy skills and



mathematical competencies throughout schooling. They found from their meta-analysis that effect sizes of tested gains in knowledge and understanding tend to be greater in mathematics and science than in literacy. ICT can play an essential role in achieving the objectives of the kindergarten curriculum if supported by appropriate software applications embedded in appropriate educational scenarios (Dwyer 2007; Lee 2009; Fisher et al. 2012). Educational applications in Mathematics provide children different games and learning activities that can be downloaded where they can learn to recognize numbers and count objects as well. A Pinterest is free educational link that offer teachers and parents vast creative ideas on how children will learn to count, write numbers, add and subtract numbers. Technology offers different stories, rhymes and songs that integrates teaching and learning numbers.

Utilization of ICT in Science

The table shows the respondents utilization of ICT in Science. The data reveals an overall weighted mean of 3.79 (Very

Useful) considering that ICT utilization is very useful in teaching science. The results reveal that the item "*community helpers*" got the highest weighted mean of 3.89 (Very Useful) while the item "*land forms and water forms*" got the lowest weighted mean of 3.66 (Very Useful).

Trundle and Hobson (2011) investigated young children's understanding of science, and they found that inquirybased science instruction which facilitated technology leads students to develop science process skills such as observing, recording, sharing, predicting, and concluding among learners enrolled in ICT-enabled science classes. Classrooms benefit from both immediate feedback from experiments and from the opportunity for more self-directed and independent learning. Experiments have shown that computer simulations can be just as effective as real-life activities in teaching science concepts and improving scientific understanding across a wide range of topics.

Table 3-A Utilization of ICT

	Statement	Mean	VD
1	naming objects, pictures, places, people, colors, shapes etc.	3.91	<i>Very Useful</i>
2	watching and re-telling good children's stories, songs, poems and rhymes	3.73	<i>Very Useful</i>
3	recognizing letter names and sounds (ABC)	3.96	<i>Very Useful</i>
4	building vocabularies through initial sounds	3.81	<i>Very Useful</i>
5	developing fluency in English communication	3.59	<i>Very Useful</i>
6	beginning reading three-letter words	3.64	<i>Very Useful</i>
7	enjoying early reading through games and creative learning activities	3.74	<i>Very Useful</i>
	Weighted Mean	3.77	<i>Very Useful</i>
Utilization of ICT in Numeracy			
	Statement	Mean	VD
1	enjoying games to distinguish similarities, differences and patterns	3.75	<i>Very Useful</i>
2	counting numbers	3.85	<i>Very Useful</i>
3	identifying greater and lesser numbers/sets	3.76	<i>Very Useful</i>
4	adding and subtracting numbers	3.65	<i>Very Useful</i>
5	telling time	3.55	<i>Very Useful</i>
6	developing problem solving skills	3.59	<i>Very Useful</i>
7	love math with fun through music and movement, stories and creative ideas provided in different learning apps	3.66	<i>Very Useful</i>
	Weighted Mean	3.69	<i>Very Useful</i>



Utilization of ICT in Science

Statement	Mean	VD
1 body parts, their functions and taking care of oneself	3.86	Very Useful
2 members and family values	3.88	Very Useful
3 community helpers	3.89	Very Useful
4 land, water and air transportation	3.73	Very Useful
5 parts, kinds and ways to take care of plants	3.79	Very Useful
6 kinds, habitat, sounds, movement and young animals	3.76	Very Useful
7 land forms and water forms	3.66	Very Useful
8 kinds of weather and season	3.71	Very Useful
9 taking care of the environment	3.80	Very Useful
Weighted Mean	3.79	Very Useful

Utilization of ICT in Music and Arts

Table 3-B reveals that statement “*dance with the music*” with weighted mean of 3.88 and an overall weighted mean of 3.77 which shows that utilization of ICT in music and arts are Very Useful. While the statement “*reciting rhymes, poems and finger plays*” reflected the lowest mean of 3.64 (Very Useful). ICT (Information and Communication Technology) is used either as a tool by children or as an apparatus by researchers to evaluate and measure the music perception, cognition and aesthetics response to music (Paul, 2011). Volioti and Williamon (2017) investigated the use of audio recordings among instrumental learners and discovered that students used them

more than professionals, particularly for elements such as goal setting and developing an interpretive style.

“Respondents encountered that reciting rhymes and most specifically poems and finger plays are the most common activity that learners are having hard time with, they are more active in interactive activity such as singing dancing”.

This means that the respondents were using available educational applications in teaching young children rhymes, songs and musical movement. In fact teachers would download available music that they can play during the circle time, and use for different school activities. There are also numerous arts ideas that teachers and parent can do both at home and at the school.

Table 3-B Utilization of ICT in Music and Arts

Statement	Mean	VD
1 pre-drawing exercises and coloring	3.73	Very Useful
2 providing children’s crafts to do at home and at school	3.71	Very Useful
3 taking pictures and videos	3.81	Very Useful
4 singing songs	3.86	Very Useful
5 reciting rhymes, poems and finger plays	3.64	Very Useful
6 imitating body movements	3.79	Very Useful
7 dance with the music	3.88	Very Useful
Weighted Mean	3.77	Very Useful

Utilization of ICT in Social Skills

Table 3-C reveals that statement “*watching stories and sharing values learned*” reflected the highest weighted mean of 3.86 (Very Useful) while statement “*making friends through social media*” got the lowest weighted mean of 3.55 (Ver Useful). Result shows that the overall weighted mean is 3.74 with verbal description of Very Useful. This table shows that all of the statements were very useful in the utilization ICT in developing the social skills of the learner. Collaborative learning and social-emotional skills can be enhanced with well designed digital technology. Existing studies note, that young children who share computers, work in an equitable and cooperative manner showing a preference for working with peers cooperatively. Moreover, according to O’Hara, when young children use ICT are encouraged to discuss the stories, share their ideas and move characters around using the touch sensitive screen accompanied

by much advice from their peers, Drigas A. & Kokkalia G. (2014). According to McDonald and Howell (2012) discovered that students’ social skills improved, specifically their ability to interact socially with their peers in the form of turn-taking, sharing ideas, and comfort level working in groups assemblages. These findings were based on qualitative observations, teacher and student surveys, and there was no control group.

This means that the available internet resources such as stories for children that they can watch that tell about kindness, respect, obedience, love and humility to mankind and to the environment can help develop their value system. When teachers and parents talked about them by asking questions about the stories they have watched and give the children opportunity to retell the story, the children will be able to develop self-expression, even critical thinking and communication skills. Social media also provide different platforms to connect with



friends and classmates and love ones. These are good opportunities for children to develop their social skills even at this time of pandemic.

Table 3-C Utilization of ICT in Social Skills

	Statement	Mean	VD
1	watching stories and sharing values learned	3.86	Very Useful
2	developing self-expression and feelings	3.80	Very Useful
3	becoming independent learner	3.78	Very Useful
4	making friends through social media	3.55	Very Useful
5	connecting with families and love ones	3.81	Very Useful
6	encouraging play-based activities at home and school	3.69	Very Useful
7	providing interactions within members of the family	3.66	Very Useful
	Weighted Mean	3.74	Very Useful

III. Development of Kindergarten Learners with the Utilization of ICT

Table 4 reveals the development of kindergarten learners score from 69-130. It reveals that the highest score got was 80-119 with a percentage of 66.67% with a verbal interpretation of *Average Development* while the lowest score got 120-129 and 130 above both got 16.67% with the verbal interpretation of *Slightly and Highly Advance*. Result shows the over-all mean that reflects the learners’ development during this new normal. Table shows that the overall mean of learners score was 113 interpreted as *Average Development*. The result indicates that even without the utilization of ICT children continuously developed their skills. According to McManis & Gunnewig et al., (2012), Literature has established a link between educational technology however, it has also stated that technology must be improved. Include tools that assist teachers in implementing technology that are developmentally appropriate. Which should be incorporated into the classroom and curriculum.

When asked what are the observed disadvantages of using ICT, The respondents observed the following disadvantages such as:

- a. *It can limit children's imagination because everything is just one click away. Children may feel overwhelmed and used to virtual learning and feel less excited to study.*
- b. *They spend more time using gadgets.*
- c. *Learners tend to open apps not related to the class during online classes which may distract their interest and attention*
- d. *they are easily distracted on their environment*

These observations validate the average development among young children during this time of pandemic. Nothing can replace a face to face interaction with the teachers and other pupils. Concrete materials and supplies that are manipulative are necessary blended with technology if we want to have a highly advanced development among children. Moreover, if parents are not properly oriented on the effects of gadgets and would not set discipline on its use, children would be addicted and without proper supervision they can open other applications that are not appropriate to young children.

Table 4 Development of Kindergarten Learners

Score	f	%	Interpretation
130 and Above	5	16.67	<i>Highly Advance</i>
120 - 129	5	16.67	<i>Slightly Advance</i>
80 - 119	20	66.67	<i>Average Development</i>
70 - 79	0	0.00	<i>Slightly Delay</i>
69 and Below	0	0.00	<i>Delay</i>
Total	30	100.00	
Mean	113		<i>Average Development</i>

IV. Relationship of Internet Gadget Use at home to Utilization of ICT and to the Development of Learners

Table 7 indicates the data on the significant relationship of internet gadgets used at home to the utilization of ICT and to the development of the learners. Above table shows that language have significant relationship with gadget and kind of bandwidth

with r – value= 0.265 (p- value= 0.017) and r – value= 0.287 (p – value= 0.01). Also it revealed that there is a negligible negative relationship with language and internet/wifi being used at home and online platform with r - value= -0.235 (p – value= 0.036) and r – value= -0.298 (p – value= 0.007) respectively. In terms of numeracy result shows the significant relationship with gadget



with r – value= 0.226 (p – value= 0.044) while it numeracy and online platform has a negligible negative relationship with r – value= 0.279 (p – value = 0.012). A significant relationship was noted with science and gadget with r – value = 0.227 (p – value= 0.043) while science and online platform are negatively correlated with r – value= -0.310 (p – value= 0.005). A

significant relationship was found between social sk gadget with r – value=0.234 and p – value= 0.037. More sophisticated mobile phones, also known as smartphones, can be used to help students access information from the web, transform it, transfer it, collaborate with other students, and create a more media-rich approach to instruction (Ferry, 2019).

Table 7-A. Relationship of Internet gadgets used at home to the utilization of ICT and to the Development of Learners.

Profile of Parents		Utilization of ICT					Development of Learners
		Language	Numeracy	Science	Music	Social Skills	
gadget	r	.265*	.226*	.227*	0.162	.234*	0.338
	p -value	0.017	0.044	0.043	0.15	0.037	0.068
Internet/wifi being use at home	r	-.235*	-0.131	0.043	0.026	-	0.026
	p -value	0.036	0.248	0.708	0.817	0.433	0.893
Kind of bandwidth	r	.287**	0.07	0.149	0	0.098	-0.039
	p -value	0.01	0.536	0.188	0.998	0.389	0.839
Wifi connection being used at home	r	0.168	0.021	-0.023	-0.118	0.089	-0.096
	p -value	0.137	0.852	0.838	0.299	0.43	0.614
Online platform use	r	-.298**	-.279*	-.310**	-0.124	-	0.02
	p -value	0.007	0.012	0.005	0.275	0.582	0.917
Most common way to communication	r	0.022	0.216	0.122	0.166	0.135	0.237
	p -value	0.844	0.055	0.281	0.14	0.231	0.207
Modalities	r	0.04	0.121	-0.046	0.071	0.13	-0.118
	p -value	0.723	0.287	0.684	0.533	0.25	0.536

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

Relationship Between the Utilization of ICT and Development of Kindergarten Learners

Table 8 shows significant relationship between the utilization of ICT and the development of Kindergarten learners. The data indicates that there is no significant relationship between the utilization of ICT and the development of Kindergarten. This

implies that learners can still develop their competencies or domain without using information and communication technology but it can be utilized at different areas and can be used as communication tool for both parents and teachers as well as the learners.



Table 7-B. Relationship between the utilization of ICT and development of Kindergarten Learners

Uses of ICT	Development of Kindergarten Learners	
Language	r	0.159
	p-value	0.4
Numeracy	r	0.033
	p-value	0.863
Science	r	0.047
	p-value	0.805
Music	r	0.141
	p-value	0.459
Social Skills	r	0.182
	p-value	0.335

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Conclusions

Based on the results of the study, the following conclusions were drawn:

1. Teachers and parents are aware of the development of the children during new normal. This means that any platform can be useful as long as both parents and teachers guide and support the needs of young learners.
2. Children/learners developed their skills and achieved learning from different domains using proper modalities that help teachers and parents supply the emerging needs of the learners to develop their skills even in this time of pandemic.
3. In time of pandemic where there are phases of setup of learning, teachers still do their best to cope up with the different challenges and difficulties. Their development is not affected by the technological problems which is brought by the changes in education. However, alternatives such as printed modules still help pupils to feel that education is still in the first line.

Recommendations

1. The result of the study may be disseminated to the kindergarten teachers to serve as a guide and to know the most motivational teaching strategies that may be used to successfully utilize ict in the learners' engagement in different domains/competencies.
2. Online platform can be very useful, although there are no significant relationship with the development of the children. These online platforms can be

used as learning modalities to young children most specifically during this new normal.

3. Choosing an appropriate tool with the integration and utilization of Information and communication technology will help teachers and parents modify the lessons and develop the young children's skills.
4. The school should conduct more seminars about ICT to help teachers develop their knowledge and use it to be creative and be proactive in using technology based lessons or activity in teaching kindergarten.
5. Lessons should be pre-recorded video so that those who don't have unlimited wifi, or poor internet connection they can still watch the lesson. Parents and teachers should also encourage the learner to take online class to learning even in this time of pandemic. Teachers should also provide more learning materials that age-appropriate and accessible for them to use and understand so that they can follow the lessons.

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DISPLACEMENT OF ESTABLISHMENTS AND WORKERS IN CENTRAL VISAYAS IN TIMES OF COVID-19 PANDEMIC

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ABSTRACT

This research paper aims to present the state of establishments and workers in times of COVID-19 pandemic; discuss the implication of the COVID-19 Adjustment Measures Program (CAMP) under the Bayanihan 1; and make recommendation for improvement in the implementation of CAMP to the Department of Labor and Employment. When the national government imposed a nationwide enhance community quarantine or lockdown on March 16, 2020, majority of business establishments resorted to temporary closures or flexible working arrangements. The implementation of the said lockdown caused the displacement of establishments and workers. There are 9,519 establishments with 261,828 workers affected due to COVID 19 in Central Visayas. Displacement was either establishment implemented flexible work arrangement or resorted to temporary closures. Majority of the displacement came from temporary closures with 6,661 affected establishments (70%) and 150,825 affected workers (58%). Most affected establishments belong to Accommodation and Food Service Activities while most affected workers belong to Manufacturing. Mostly, micro and small size businesses were affected of this pandemic which is found in the Tri-Cities of Cebu, Mandaue, and Lapu-Lapu being the center of commerce in Central Visayas. The Department of Labor and Employment being the implementing arm of the National Government in the field of labor and employment made a timely response thru the COVID-19 Adjustment Measures Program (CAMP).

KEYWORDS: *Displacement, Covid-19 Pandemic, Covid-19 Adjustment Measures Program, Philippines*

INTRODUCTION

On March 16, 2020, the Philippine government imposed an enhanced community quarantine (ECQ) with the primary objective of the ECQ is to flatten the curve, corresponding to the daily trend of cumulative cases. Prior to the ECQ, the number of cases was doubling almost every three days. Provinces and cities in Central Visayas also started to impose a lockdown following these developments. One of the consequences on the lockdown was displacement of business establishments and workers. Several displacements in business establishments and workers are being experienced in Central Visayas. It brought tremendous pressures on the government on how to help the workers. Among the problems are how to finance the basic necessities of the families of these workers.

Patrick Patriwirawan Jr.'s article entitled "An Evaluation of DOLE Programs for Displaced Workers: A Critique of the Policy Framework for Worker Displacement in the Philippines," published in the Philippine Journal of Labor Studies, indicated that although DOLE has been addressing the needs of displaced workers since 1997 and has released various department orders related to displacement, there is no official national definition of worker displacement provided by DOLE in both conceptual and operational terms. Also, the Labor Code of the Philippines does not offer a clear definition of worker displacement. In addition, Mr. Patriwirawan showed varying definitions and interpretations of job displacement from different DOLE issuances and programs as quoted below:



DOLE Issuance	Definition/Interpretation
<p><i>Paragraph 1, Article 1</i> DOLE Department Order No. 07-01 Guidelines for the Operation of Quick Response Teams (DOLE QRT RESPONSE: Balik_Trabaho)</p>	Displacement was implicitly referred to “industry closures and retrenchment due to the adverse effects of globalization and economic crises”
<p><i>Section 9, Article II</i> DOLE Department Order No. 137-14 Guidelines in the Implementation of the Department of Labor and Employment Integrated Livelihood and Emergency Employment Programs (DILEEP)</p>	Reasons cited for the displacement of workers are “natural and man-made disasters”.
<p><i>Section 5(f), Article I</i> DOLE Department Order No. 173-17 Revised Guidelines in the Implementation of the Department of Labor and Employment Integrated Livelihood and Emergency Employment Programs (DILEEP)</p>	Displaced workers were referred to as “workers in the formal and informal sectors who became unemployed, underemployed, or have lost their livelihood as a result of closure of establishment, economic crisis, retrenchment, termination, natural disaster/calamities”.
<p><i>Item 1 under Program Coverage</i> DOLE Department Order No. 85-07 DOLE Adjustment Measures Program for the Prevention of Job Losses and Assistance to Displaced Workers</p>	Displacement was implicitly describes through the enumeration of the following reasons for displacement: (1) rightsizing, (2) redundancy, (3) import competition, (4) introduction to technological change and labor-saving devices, and (5) other analogous causes directly or indirectly caused by trade liberalization.
<p><i>Section 2 and 4, Article I</i> DOLE Department Order No. 152-16 Guidelines in the Implementation of K to 12 DOLE Adjustment Measures Program</p>	Displacement was referred to the employment impact of the implementation of Republic Act No. 10533 otherwise known as the Enhanced Basic Education Act of 2016.
<p><i>Section 3(a) and 3(b), Article I</i> DOLE Department Order No. 177-17 Expanding DOLE Adjustment Measures Program for Displaced Higher Institution Personnel due to the Implementation of Republic Act No. 10533</p>	The expanded DOLE AMP defined displacement as the separation of the HEI and its personnel due to the implementation of RA 10533. Due to the peculiarity of education institutions, it also categorized displaced workers into: partially displaced (separated from employment but has other wage employment); totally displaced (separated from employment with no other wage employment); and temporary displaced (temporary suspended with no other wage employment).
<p><i>Section 3(a)(i), Article I</i> DOLE Department Order No. 191-18 Guidelines on the Adjustment Measures Program for Affected Workers Due to the Boracay Island Rehabilitation</p>	Displaced workers were referred to as “workers whose employment is severed by reason of the permanent cessation of operations, or permanent closure of the employer’s business establishment.
<p><i>Item 1, III. Definition of Terms</i> Job Displacement Monitoring System</p>	As a term, displacement was used interchangeable with termination. The term was referred to terminations of workers due to establishment shutdowns/closures or retrenchments due to economic reasons.

According to the research of Maria Isabel D. Artajo and colleagues titled "Leaving No Worker Behind: Evidence from a Participatory Assessment of DOLE Interventions for Displaced Workers," worker displacement can result in a severe crisis for workers and their communities. The impacts of displacement are extensive, and therefore, addressing the issue requires a combination of immediate, medium, and long-term measures to provide support not just during post-shock but also pre-shock

situations. To fulfill its mandate, DOLE has developed various policies and programs aimed at assisting displaced workers since the late 1990s. One of these programs is the COVID-19 Adjustment Measures Program (CAMP), which the DOLE issued Department Order No. 209, Series of 2020, entitled "Guidelines on the Adjustment Measures Program for Affected Workers Due to the Coronavirus Disease 2019." The guidelines outlined the program's objectives, coverage, program assistance,



corresponding requirements, and procedures regarding the provision of financial support as social protection and welfare for affected formal sector workers.

The CAMP is a safety net program that offers financial support to mitigate the adverse economic impacts and reduction of income brought about by the said pandemic. According to Charlotte Justine Diokno-Sicat and Ma. Alma P. Mariano in their research work entitled “A Public Expenditure Review of Social Protection Programs in the Philippines” cited that social safety nets are non-contributory programs, stop-gap mechanisms or urgent responses that address effects of economic shocks, disasters and calamities on specific vulnerable groups. These are measures that target affected groups with the specific objective of providing relief and transition. Measures include emergency assistance, price subsidies, food programs, employment programs, retraining programs and emergency loans. Assistance to Displaced Workers-Adjustment Measures Program (AMP) offers a package of assistance and other forms of intervention to workers displaced by social and economic disruptions. Examples include both local and overseas employment facilitation and livelihood assistance to those who prefer to engage in entrepreneurial activities. In 2007, the DOLE expanded the coverage of AMP to skilled workers in key industries and assisting affected companies that want to restructure and manage their workforce (DOLE 2007). In order to do this, the DOLE formed Quick Response Teams (QRT) in national and regional offices.

“Philippines: Social Protection Review and Assessment” published by International Bank for Reconstruction and Development/The World Bank, mentioned that the AMP provides assistance to (a) workers who have been displaced due to business closures, labor retrenchment, or economic downturn; and (b) agricultural workers who are affected by changes in the local economy. Benefits consist of (i) job-search assistance and counselling (including for overseas reemployment); (ii) entrepreneurship training; (c) provision of seed capital for income generating activities; and/or (iv) retraining to increase employability and competitiveness. The program is operated by DOLE. Further, Md. Ashrafal Alam and Sheikh Abir Hossai in their research work entitled “Effectiveness of Social Safety Net Programs for Poor People in the Government Level of Bangladesh” as published in the International Journal of Social Sciences and Management connotes that the contribution of Social Safety Net Program is now viewed not merely in terms of their impact on challenged families, but their systemic benefits - in enabling higher levels of employment and entrepreneurship, sustaining household consumption and human capital, securing pro-poor growth and promoting social inclusion and national cohesion.

The UNI Global Union-Philippine Liaison Council (UNI-PLC), through Jesus Exequiel Nidea, President, on March 16, 2020, called upon the Philippine government to put in place programs aimed at protecting workers and providing emergency relief for workers affected by the COVID-19 crisis. Specifically, it calls upon the Department of Labor and Employment (DOLE)

to enhance and fast-track the roll out of its COVID-19 Adjustment Measures Program (CAMP) particularly the financial assistance to those workers who have temporarily or permanently lost their jobs or their livelihood.

The Leaders Forum composed of the top-level representatives of business organizations including the Employers Confederation of the Philippines (ECOP), Philippine Chamber of Commerce and Industry (PCCI), Philippine Exporters Confederation (Philexport), Trade Union Congress of the Philippines (TUCP), Federation of Free Workers (FFW), and Sentro ng mga Nagkakaisa at Progresibong Manggawa (SENTRO), jointly issued on April 8, 2020 a recommendation on how to better implement the DOLE COVID-19 Adjustment Measures Program (CAMP). As a quick response, the Department of Labor and Employment has put in place the CAMP to provide temporary relief to workers. However, its enforcement has been encountering policy and programs gaps in terms of the following:

1. Notification: rank and file workers' only form of communication is through text messaging. Many do not have access to internet and thus, cannot use e-mails. Mobile messaging and calls will require additional costs for them.
2. Benefits: no public transportation is available; offices are closed; not all workers have ATMs or bank account.
3. Requirements: payroll and payslips, are confidential and are in offices which are closed.

To ensure that the assistance reach the workers in a timely manner to enable them to weather the economic contraction resulting from the ECQ, the Leaders Forum recommended the following:

1. DOLE to notify employees and/or employer through e-mail and/or text message on the status of a company's application under the CAMP (strictly within three days after submission of requirements, as prescribed in DOLE D.O. 209 series of 2020), stating the expected date/s of release of the benefits to the employees.
2. Government accounting and auditing rules may have to be relaxed and should take a backseat to address the paramount survival needs of our workers.
3. DOLE to release a report on the budget allocated for CAMP per region, with daily updates including amount disbursed, number of workers covered, and number of CAMP applications as against approvals and disapprovals.
4. State the reasons for disapproval of CAMP applications.
5. That only one documents among the following be submitted in lieu of the two documents as required such as establishment report, payslip, logbook, SSS Alpha list, HR-certified list of employees, & certified payroll.
6. That DOLE allows workers to submit requirements directly using an online portal especially created for CAMP applications. Applications may be verified



through the applicants' SSS and/or company IDs or certificate of employment (template should be provided by DOLE in the online portal).

7. That DOLE fast track the procedures by allowing both national and regional DOLE offices to process applications.
8. That distribution of benefits be done through of the following, whichever is most convenient and expedient for the worker to receive the financial assistance:
 - a. Through banks directly to the savings/payroll accounts of the workers;
 - b. By the employer through checks payable to the individual employees, uncrossed and encashable. The employers will take full responsibility and accountability for actual releases to their employees.
 - c. Through money-remittance services (e.g. Pera Padala, Palawan Express, Western Union, etc.)
 - d. Mobile wallets (e.g. Smart money, G-cash, etc.)
9. Since the ECQ has been extended, government will consider increasing allocation to CAMP, as this is clearly insufficient to meet the needs of a formal sector worker, and ensuring income subsidy, through CAMP, on a monthly basis for the duration of the ECQ. Any such income subsidy should be equivalent to the prevailing minimum wage.

The Department of Labor and Employment (DOLE) Regional Office No VII published a press release seeking full understanding from employers and workers, who have not received the COVID-19 Adjustment Measures Program (CAMP) financial assistance as it stopped accepting online application for said program effective 15 April 2020, 5:00 P.M. The DOLE-Central Office, in an official statement said that the labor department has been swamped with volumes of requests that the available fund for the program amounting to P1.6 billion is very close to being depleted.

On May 4, 2020, the Cebu Provincial Board passed a Resolution sponsored by 6th District Board Member Glenn Anthony Soco urging DOLE-7 to be more transparent in the actual status of the application processing for financial aid to displaced workers in both the formal and informal sector. The board asked for the total budgetary allocation received by the office for the program, the list of companies eligible for coverage along with their respective list of employees, the list of all approved companies and their corresponding employees, a breakdown on the total budgetary allocation released as aid to the approved companies' employees, the list of pending companies, a list of companies and their pending approval status and a timeline of the releasing of aid to companies that have submitted requirements prior to April 16, 2020. It was also pointed out that workers have reportedly cried out on the protracted implementation of CAMP. The board also demanded that DOLE-7 should endeavor to include all displaced workers in the financial assistance program as it was devised to assist

every displaced worker and not just those who have submitted applications at an earlier date.

Abad (2020) found that COVID-19 pandemic has significantly impacted the Philippine economy, leading to a contraction in economic activity, a decline in consumer and business confidence, and disruptions in global trade and supply chains. Alba (2021) pointed out that the COVID-19 pandemic has significantly affected small and medium enterprises (SMEs) in Cebu, Philippines, with many experiencing reduced sales, disrupted supply chains, and decreased profitability. The author also identified the challenges faced by SMEs in adapting to the pandemic, such as limited financial resources, inadequate digital infrastructure, and a lack of access to information and support services. Moreover, Calara (2020) investigated the impact of COVID-19 on small and medium-sized enterprises (SMEs) in the Philippines and identifies the challenges and opportunities that emerged during the pandemic. The author found that the pandemic has had a significant adverse impact on SMEs in the Philippines, with many facing decreased sales and revenue, disrupted supply chains, and difficulty in accessing financing.

Cielo (2021) investigated the impact of the COVID-19 pandemic on tourism workers in Cebu City, Philippines, and found that the pandemic has resulted in significant job losses and income reductions for workers in the tourism sector. The author noted that tourism businesses, such as hotels, resorts, and restaurants, have been severely affected by the pandemic, with many closing down or reducing their operations. This has resulted in the displacement of thousands of workers, particularly those in low-skilled and informal jobs. Also, Gorgonio (2020) examined the negative impact of the COVID-19 pandemic on the tourism and hospitality industry in the Philippines. The study revealed that the pandemic has led to a significant decline in tourist arrivals and revenues, resulting in many hotels and tourist attractions shutting down or limiting their operations.

In his article "The impact of COVID-19 pandemic on Philippine manufacturing," Labios (2020) examined the effects of the COVID-19 pandemic on the manufacturing industry in the Philippines. He highlighted the decrease in production and sales in the first half of 2020 due to lockdown measures and decreased consumer demand. Likewise, in his article "The impact of COVID-19 pandemic on Philippine transport sector," Mariano (2020) examined the effects of the pandemic on the transport industry in the Philippines. The author highlighted the decrease in passenger traffic and revenue for all modes of transportation due to the implementation of quarantine measures and reduced mobility.

The study conducted by Montecillo (2020) revealed that the COVID-19 pandemic has had a significant negative impact on micro, small, and medium enterprises (MSMEs) in the Philippines. The study found that MSMEs experienced a decline in sales and revenue due to various factors such as the implementation of community quarantine measures, which disrupted supply chains and restricted mobility, as well as a decrease in consumer demand. Meanwhile, Pineda's (2020)



study investigated the effects of the COVID-19 pandemic on the retail industry in the Philippines. It showed that the pandemic has caused significant disruptions in the retail industry, including reduced consumer demand, supply chain disruptions, and store closures. Also, Sy (2020) investigated the impact of COVID-19 on the food and beverage industry in the Philippines and identified the challenges and opportunities that emerged during the pandemic. The author cited challenges the need to comply with health and safety protocols and the increasing competition from online platforms. Based on the findings, Sy suggested several policy recommendations, including providing financial support to affected businesses, improving access to digital technology, and strengthening government support for the industry.

Bejarin et al. (2020) conducted a rapid assessment of the Client Experience under the COVID-19 Adjustment Measures Program (CAMP), a program of the Philippine government that provides financial assistance to workers who have lost their jobs or experienced a reduction in their income due to the pandemic. The authors found that the program has provided much-needed financial relief to affected workers and their families. The authors also identified several challenges and areas for improvement, such as the slow processing time and limited coverage of the program, as well as the need for better communication and information dissemination to beneficiaries. Based on the findings, the authors suggested several policy recommendations, including improving the targeting and coverage of the program, streamlining the application and processing procedures, and strengthening the monitoring and evaluation of the program. The study provided insights into the implementation of social protection programs during the pandemic and highlighted the importance of ensuring that such programs are accessible, efficient, and responsive to the needs of beneficiaries.

This research will give the government agencies and other stakeholders on the massive status on the displacement of establishments and workers in Central Visayas for proper planning. This problem is so urgent and timely that needs a prompt action on the government.

The main objective of this study is to present the state of establishments and workers in times of COVID-19 pandemic with specific objectives:

1. Identify the displacement rate of affected establishments and affected workers in Central Visayas;
2. Identify the concerns of affected workers in relation to the implementation of COVID-19 Adjustment Measures Program (CAMP) under the Bayanihan 1;
3. Discuss the implication of the COVID-19 Adjustment Measures Program (CAMP) in Region VII under the Bayanihan 1;

METHODOLOGY

This research is quantitative and descriptive in nature. Quantitative research is the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect. It is used in a wide variety of natural and social sciences, including physics, biology, psychology, sociology and geology (Wikipedia Encyclopedia, 2005). Descriptive, on the other hand, aims to illustrate a phenomenon.

The primary data was derived from the Establishment Data submitted by the displaced establishments from March to April 2020.

DATA GATHERING

This research would utilize data mining in the conduct of study. Data mining is defined as the process of extracting useful information from large data sets through the use of any relevant data analysis techniques developed to help people make better decisions.

Phase 1 Conceptualization Phase

Step 1: In line with the Department of Labor & Employment's mandate to formulate policies, implement programs and services, and serve as the policy-coordinating arm of the Executive Branch in the field of labor and employment, this research will look into the displacement of establishments and workers in Central Visayas in times of the COVID-19 pandemic.

Step 2: As early as 2007, the Department of Labor and Employment already issued D.O. No. 85, series of 2007 (DOLE Adjustment Measures Program for the Prevention of Job Losses and Assistance to Displaced Workers. In times of the pandemic, the DOLE issued Department Order No. 209, Series of 2020 entitled "Guidelines on the Adjustment Measures Program for Affected Workers due to the Corona Virus Disease 2019".

Step 3: The research will present the displacement of establishments and workers in Central Visayas and the implication of the COVID-19 Adjustments Measures Program under Bayanihan 1.

Phase 2 Design Phase

Step 1: The study employed a research design which is quantitative and descriptive in nature. Quantitative research is used to find patterns and averages, make predictions, and generalize results to wider populations.

Step 2: It will also be a descriptive research which aims to accurately and systematically describe a population, situation or phenomenon.

Step 3: The tabulated data of displacement of establishments and workers will be collected and analyzed. These data will be described into a phenomenon.

Phase 3 Data Gathering Phase

Step 1: The primary data was derived from the Establishment Report Forms on COVID-19 submitted by the displaced establishments from March to April 2020.

Step 2: The primary data was tabulated by the Department of Labor & Employment Regional Office No. VII



thru the Technical Services & Support Division – Labor Relations and Standards.

Step 3: The tabulated data is utilized and presented in this research.

Phase 4 Analysis Phase

There are 9,519 affected establishments submitted their Establishments Report Form on COVID-19 with 261,828 affected workers. Out of this number, there are 6,661

establishments that resorted to temporary closures while 2,858 were implementing Flexible Working Arrangement. There are 150,825 affected workers in the temporary closures and 111,003 affected workers in the Flexible Working Arrangement. The establishments were also segregated per provinces, industries, business sizes

RESULTS AND DISCUSSION

Table No. 1.

Number of Establishments and Number of Workers Affected due to COVID-19.

Form of Displacement	No. of Establishments	Percentage	No. of Workers Affected	Percentage
Implemented FWA	2,858	30%	111,003	42%
Temporary Closures	6,661	70%	150,825	58%
Total	9,519	100%	261,828	100%

Source: DOLE RO-VII Report Monitoring on Covid-19 under Bayanihan 1

The table shows that a total of 9,519 establishments were affected by the pandemic, with 30% implementing Flexible Work Arrangements (FWA) and 70% temporarily closing. Of the total number of affected workers, 42% were under the FWA while 58% were affected by temporary closures.

Flexible Work Arrangements, such as work from home, reduced work hours, or rotating work schedules, are implemented to help companies operate and maintain employment while minimizing contact and transmission of the

virus among employees. Temporary closures, on the other hand, were implemented due to quarantine restrictions and reduced demand for goods and services.

The data indicates that the pandemic has affected a significant number of businesses and workers in the country. It also highlights the importance of government interventions, such as the Bayanihan 1 law, which provides financial assistance to affected workers and businesses to alleviate the economic impact of the pandemic.

Table No. 2.

Number of affected establishments and affected workers implemented flexible work arrangement (FWA) per province.

Field Offices	Total Establishments	Percentage	Total Workers	Percentage
Bohol	600	21%	19,067	17%
Cebu Province	339	12%	11,721	11%
Negros Oriental	384	13%	13,061	12%
Siquijor	130	5%	1,578	1%
Tri Cities (Cebu, Mandaue, & Lapu-Lapu)	1,405	49%	65,576	59%
Total	2,858	100%	111,003	100%

Source: DOLE RO-VII Report Monitoring on Covid-19

The table provides information on the number of establishments and workers in each Field Offices in Central Visayas that implemented Flexible Work Arrangements (FWA) in response to the COVID-19 pandemic.

In total, there were 2,858 establishments that implemented FWA, which accounts for 100% of the establishments included in the report. These establishments had a total of 111,003 affected workers who implemented FWA, which represents 100% of the affected workers in the report. Looking at the breakdown by province, the Tri Cities (Cebu, Mandaue, & Lapu-Lapu) had the highest percentage of

establishments (49%) and affected workers (59%) that implemented FWA. This is likely due to the high number of businesses and workers in these urban areas. Bohol had the second highest percentage of establishments (21%) and Negros Oriental had the third highest (13%). Cebu Province had the lowest percentage of establishments (12%) and Siquijor had the lowest percentage of affected workers (1%).

Overall, the table suggests that a significant number of establishments and workers in the region have implemented FWA as a response to the COVID-19 pandemic. This may have



helped to mitigate the spread of the virus by reducing the number of people who are physically present in workplaces.

Table No. 3

Number of affected establishments and affected workers implemented temporary closure per provincial field office.

Field Offices	Total Establishments	Percentage	Total Workers	Percentage
Bohol	1,207	18%	17,751	11%
Cebu Province	809	12%	15,934	11%
Negros Oriental	987	15%	15,270	10%
Siquijor	176	3%	1,349	1%
Tri Cities	3,482	52%	100,521	67%
Total	6,661	100%	150,825	100%

Source: DOLE RO-VII Report Monitoring on Covid-19 under Bayanihan 1

The table provides information on the number of establishments and workers affected by temporary closures in different provinces, as reported by the Department of Labor and Employment Regional Office VII under the Bayanihan 1 program in response to the COVID-19 pandemic.

The data shows that the Tri Cities, which may refer to the cities of Cebu, Mandaue, and Lapu-Lapu, have the highest number of affected establishments and workers, accounting for 52% and 67% respectively of the total for all the provinces listed. This indicates that the impact of the pandemic on businesses and employment in these cities has been significant. Bohol and Negros Oriental follow with 18% and 15% of the affected establishments respectively, while Cebu Province has

12%. Siquijor has the lowest number of affected establishments, accounting for only 3% of the total. In terms of the number of affected workers, the percentages are relatively lower than those for establishments, with the highest being in the Tri Cities at 67%. Bohol and Cebu Province follow with 11% each, while Negros Oriental has 10%. Siquijor has the lowest percentage at only 1%.

Overall, the table provides a snapshot of the impact of the COVID-19 pandemic on businesses and employment in different provinces in the region. It highlights the need for government support and interventions to mitigate the economic impact of the pandemic, particularly in areas where the impact has been most severe.

Table No. 4

Number of affected establishments and number of affected workers per industry.

Industry	Total Establishments	Percentage	Total Workers	Percentage
Accommodation and Food Service Activities	2,382	25.02%	46,854	17.89%
Administrative and Support Service Activities	930	10.00%	27,959	10.67%
Agriculture, Forestry, and Fishing	35	0.37%	1,239	0.47%
Arts, Entertainment, and Recreation	170	1.78%	2,870	1.09%
Construction	261	2.74%	13,896	5.30%
Education	367	3.85%	12,720	4.85%
Electricity, Gas, Steam and Air Conditioning Supply	30	0.32%	748	0.28%
Financial and Insurance Activities	475	5.00%	8,832	3.37%
Human Health and Social Work Activities	477	5.00%	8,366	3.19%
Information and Communication	74	0.78%	1,422	0.54%
Manufacturing	533	5.60%	63,099	24.10%
Mining and Quarrying	9	0.10%	324	0.12%
Other Service Activities	699	7.34%	8,336	3.18%
Professional, Scientific and Technical Activities	271	2.84%	7,349	2.80%



Real Estate Activities	281	2.95%	3,917	1.49%
Transportation and Storage	296	3.1%	9,753	3.72%
Water Supply, Sewerage, Waste Management, and Remediation Activities	20	.21%	468	0.17%
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	2,209	23.00%	43,676	16.68%
Total	9,519	100%	261,828	100%

Source: DOLE RO-VII Report Monitoring on Covid-19 under Bayanihan 1

The table shows the number of affected establishments and workers in various industries due to the COVID-19 pandemic.

The accommodation and food service activities industry has been the most affected, with 2,382 establishments or 25.02% of the total affected establishments, and 46,854 workers or 17.89% of the total affected workers. This is not surprising since the pandemic has significantly reduced the demand for travel and leisure activities, resulting in the closure of hotels, resorts, and restaurants. The manufacturing industry has the highest number of affected workers, with 63,099 or 24.10% of the total affected workers. This could be because manufacturing involves a large number of workers who are required to work closely with each other, making it difficult to maintain physical distancing measures. Wholesale and retail

trade, including the repair of motor vehicles and motorcycles, have the most affected establishments, with 2,209 or 23.00% of the total affected establishments. However, the percentage of affected workers in this industry is slightly lower than the overall average at 16.68%. It is also interesting to note that some industries such as agriculture, forestry, and fishing, as well as mining and quarrying, have a relatively low percentage of affected establishments and workers, possibly due to the nature of their work being less susceptible to the impacts of the pandemic.

Overall, the data in the table provides valuable insights into the industries most affected by the pandemic in terms of their establishments and workers, which can help policymakers and stakeholders in making informed decisions regarding support and assistance to these industries.

Table No. 5

Number of affected establishments and number of affected workers which implemented flexible working arrangement per industry.

Industry	Total Establishments	Percentage	Total Workers	Percentage
Accommodation and Food Service Activities	755	26.41%	20,927	18.85%
Administrative and Support Service Activities	332	11.61%	16,361	14.73%
Agriculture, Forestry, and Fishing	15	0.52%	815	0.73%
Arts, Entertainment, and Recreation	24	0.84%	828	0.74%
Construction	67	2.34%	4,563	4.11%
Education	125	4.40%	5,459	4.91%
Electricity, Gas, Steam and Air Conditioning Supply	21	0.73%	613	0.55%
Financial and Insurance Activities	128	4.50%	4,205	3.79%
Human Health and Social Work Activities	95	3.32%	3,325	3.00%
Information and Communication	42	1.50%	944	0.85%
Manufacturing	144	5.00%	18,703	16.90%
Mining and Quarrying	5	0.20%	241	0.22%
Other Service Activities	144	5.00%	2,014	1.81%
Professional, Scientific and Technical Activities	93	3.25%	3,958	3.56%
Real Estate Activities	92	3.21%	2,073	1.87%
Transportation and Storage	135	4.72%	6,236	5.62%



Water Supply, Sewerage, Waste Management, and Remediation Activities	5	0.20%	63	0.06%
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	636	22.25%	19,675	17.72%
Total	2,858	100%	111,003	100%

Source: DOLE RO-VII Report Monitoring on Covid-19 under Bayanihan 1

The table shows the number of affected establishments and affected workers by industry who implemented flexible working arrangements due to the COVID-19 pandemic.

The industry with the highest number of affected establishments is the Accommodation and Food Service Activities, with 755 establishments or 26.41% of the total establishments. It is followed by Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles, with 636 establishments or 22.25% of the total. Limited transportation and difficulty of the customers to go out from residences due to strict implementation of the lockdown prompted these businesses to implement a flexible work arrangement. These establishments also require close contact with the customers. On

the other hand, the industry with the highest percentage of affected workers is the Manufacturing industry, with 18,703 workers or 16.90% of the total affected workers. This is followed by Accommodation and Food Service Activities, with 20,927 workers or 18.85% of the total. It is worth noting that some industries have a low percentage of affected establishments and workers, such as Agriculture, Forestry, and Fishing, and Water Supply, Sewerage, Waste Management, and Remediation Activities.

Overall, the data in the table highlights the impact of the COVID-19 pandemic on different industries and the implementation of flexible working arrangements as a response to the crisis.

Table No. 6

Number of affected establishments and number of affected workers which implemented temporary closure per industry.

Industry	Total Establishments	Percentage	Total Workers	Percentage
Accommodation and Food Service Activities	1,627	24.43%	25,927	17.20%
Administrative and Support Service Activities	598	8.98%	11,598	7.69%
Agriculture, Forestry, and Fishing	20	0.30%	424	0.28%
Arts, Entertainment, and Recreation	146	2.19%	2,042	1.35%
Construction	194	2.91%	9,333	6.19%
Education	242	3.63%	7,261	4.81%
Electricity, Gas, Steam and Air Conditioning Supply	9	0.14%	135	0.09%
Financial and Insurance Activities	347	5.21%	4,627	3.07%
Human Health and Social Work Activities	382	5.73%	5,041	3.34%
Information and Communication	32	0.48%	478	0.32%
Manufacturing	389	5.84%	44,396	29.44%
Mining and Quarrying	4	0.06%	83	0.06%
Other Service Activities	555	8.33%	6,322	4.20%
Professional, Scientific and Technical Activities	178	2.67%	3,391	2.25%
Real Estate Activities	189	2.83%	1,844	1.22%
Transportation and Storage	161	2.42%	3,517	2.33%
Water Supply, Sewerage, Waste Management, and Remediation Activities	15	0.23%	405	0.27%
Wholesale and Retail Trade; Repair of Motor Vehicles and	1,573	23.62%	24,001	15.91%



Motorcycles

Total	6,661	100%	150,825	100%
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Source: DOLE RO-VII Report Monitoring on Covid-19 under Bayanihan 1

The table provides information on the number of affected establishments and workers in the Philippines that implemented temporary closure due to the COVID-19 pandemic.

According to the table, a total of 6,661 establishments implemented temporary closure, affecting 150,825 workers. The industry with the highest number of affected establishments was the Accommodation and Food Service Activities with 1,627 establishments, accounting for 24.43% of the total affected establishments. However, this industry had a lower percentage of affected workers compared to other industries, with only 17.20% of the total affected workers. The industry with the highest percentage of affected workers was the Manufacturing industry with 29.44% of the total affected workers, despite having only 5.84% of the total affected establishments. The

Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles industry had the second-highest percentage of affected establishments with 23.62% and the second-highest percentage of affected workers with 15.91%. Limited customers or no customers prompted these hotel and restaurant owners to temporarily close their establishments. The highest affected workers belong to the Manufacturing since these businesses are large size establishments with more than 200 workers.

It is important to note that the data only includes establishments that implemented temporary closure, and does not include those that implemented other measures such as reduced operating hours or workforce. The data also does not account for the long-term effects of the pandemic on the industries and the workers, which may have further impacted their operations and livelihoods.

Table No. 7

Number of affected establishments and number of affected workers per size of the establishments.

Establishment Sizes	Total Establishments	Percentage	Total Workers	Percentage
Large	235	2.47%	92,123	35.18%
Medium	253	2.66%	32,480	12.41%
Small	4,181	43.92%	111,093	42.43%
Micro	4,836	50.80%	26,123	9.98%
No Data Supplied	14	0.15%	9	0.003%
Total	9,519	100%	261,828	100%

Source: DOLE RO-VII Report Monitoring on Covid-19 under Bayanihan 1

The table provides information on the number of establishments and workers affected by the COVID-19 pandemic, categorized by establishment sizes.

There are a total of 9,519 establishments included in the report, with 235 (2.47%) categorized as Large, 253 (2.66%) as Medium, 4,181 (43.92%) as Small, and 4,836 (50.80%) as Micro establishments. Additionally, there are 14 establishments (0.15%) with no data supplied. In terms of affected workers, there are a total of 261,828 workers affected by the pandemic in the establishments included in the report. Of these, 92,123 (35.18%) are from Large establishments, 32,480 (12.41%) are from Medium establishments, 111,093 (42.43%) are from Small

establishments, and 26,123 (9.98%) are from Micro establishments. There are also 9 workers (0.003%) from establishments with no data supplied.

The data presented in the table indicates that the majority of establishments affected by the pandemic are small and micro establishments, which also employ a significant portion of the affected workers. Meanwhile, large establishments, although comprising only a small percentage of the total establishments, employ a large number of affected workers. This information can be useful for policymakers and stakeholders in developing targeted interventions and support for the affected establishments and workers.

Table No. 8

Number of establishments benefited and number of workers benefited per sizes.

Establishment Sizes	Establishments	Percentage	Workers	Percentage
Large	15	1.07%	5,421	17.14%
Medium	42	3.00%	5,592	17.69%
Small	661	47.11%	17,261	54.59%
Micro	685	48.82%	3,344	10.58%
Total	1,403	100%	31,618	100%

Source: DOLE RO-VII Report Monitoring on Covid-19 under Bayanihan 1

The table shows that small and micro establishments received the majority of the benefits, accounting for 47.11% and 48.82% of the establishments respectively. In contrast, large establishments only accounted for 1.07% of the total establishments that received benefits.

In terms of workers benefited, small establishments also had the highest percentage at 54.59%, while large establishments had the lowest percentage at 17.14%. This indicates that the Bayanihan 1 program was more focused on providing support to small and micro establishments and their



employees who were more vulnerable to the economic impact of the pandemic. It is important to note that while the number of establishments and workers benefited in each category is provided, there is no information on the specific types of benefits provided to them. This limits the insights that can be drawn from the data.

Overall, the data on the table highlights the importance of providing targeted support to small and micro businesses during times of crisis to ensure that their employees are not disproportionately affected. Under the CAMP Guidelines, among the priority establishments must belong to the Micro and Small Size Establishments.

Table No. 9

Number of establishments benefited and number of workers benefited per industry				
Industry	Total Establishments	Percentage	Total Workers	Percentage
Accommodation and Food Service Activities	457	32.57%	9,970	31.53%
Administrative and Support Service Activities	115	8.20%	1,833	5.80%
Agriculture, Forestry, and Fishing	1	0.07%	360	1.14%
Arts, Entertainment, and Recreation	23	1.64%	775	2.45%
Construction	34	2.42%	2,389	7.56%
Education	52	3.71%	1,568	4.96%
Electricity, Gas, Steam and Air Conditioning Supply	0	0.00%	0	0.00%
Financial and Insurance Activities	39	2.78%	722	2.28%
Human Health and Social Work Activities	95	6.77%	1,363	4.31%
Information and Communication	3	0.21%	36	0.11%
Manufacturing	85	6.06%	2,934	9.28%
Mining and Quarrying	1	0.07%	47	0.15%
Other Service Activities	63	4.50%	638	2.02%
Professional, Scientific and Technical Activities	40	2.85%	744	2.35%
Real Estate Activities	39	2.78%	758	2.40%
Transportation and Storage	32	2.28%	1,464	4.63%
Water Supply, Sewerage, Waste Management, and Remediation Activities	1	0.07%	50	0.16%
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	323	23.02%	5,967	18.87%
Total	1,403	100%	31,618	100%

Source: DOLE RO-VII Report Monitoring on Covid-19 under Bayanihan 1

This table shows that the majority of the benefited establishments and workers belong to the Accommodation and Food Service Activities. Being the most affected industry, DOLE RO VII prioritized the said industry to be the recipient of CAMP assistance.

The table shows the number of establishments and workers that benefited from the government's Bayanihan 1

program in various industries in the Philippines. The Bayanihan 1 program was designed to provide financial assistance to workers affected by the COVID-19 pandemic. The Accommodation and Food Service Activities industry had the highest number of establishments benefited, with 457 or 32.57% of the total establishments. This industry also had the highest number of workers benefited, with 9,970 or 31.53% of the total



workers. This may indicate that the hospitality industry was hit the hardest by the pandemic and needed the most support. The Wholesale and Retail Trade industry had the second-highest number of establishments benefited, with 323 or 23.02% of the total establishments. This industry also had the second-highest number of workers benefited, with 5,967 or 18.87% of the total workers. This suggests that the retail industry was also significantly affected by the pandemic. The Manufacturing industry had the third-highest number of establishments benefited, with 85 or 6.06% of the total establishments. This industry also had the third-highest number of workers benefited, with 2,934 or 9.28% of the total workers. This may indicate that the manufacturing industry also experienced a significant impact from the pandemic.

Overall, the table suggests that the pandemic had a significant impact on the employment and financial stability of workers in various industries in the Philippines. The Bayanihan 1 program provided necessary support to affected workers and establishments, with the most assistance provided to those in the Accommodation and Food Service Activities, Wholesale and Retail Trade, and Manufacturing industries.

CONCLUSION

There are 9,519 establishments with 261,828 workers affected due to COVID 19 in Central Visayas. Displacement was either implemented flexible work arrangement or resorted to temporary closures. Majority of the displacement came from temporary closures with 6,661 affected establishments (70%) and 150,825 affected workers (58%). Most affected establishments belong to the Accommodation and Food Service Activities while most affected workers belong to the Manufacturing. Mostly, micro and small size businesses were affected of this pandemic which is found in the Tri-Cities of Cebu, Mandaue, and Lapu-Lapu.

There were 1,403 establishments with 31,618 workers accommodated of the CAMP with a total disbursement of P158,090,000.00. Majority of the benefited establishments and workers belong to the Accommodation and Food Service Activities. However, manufacturing which had the highest number of affected workers had only 2,934 benefited workers or 9.28% share of the total disbursed amount. The workers received a one-time P5,000.00 thru the M. Lhuillier Kwarta Padala. This is a social safety net which is a non-contributory program and an urgent response. This assistance to displaced workers offers a package of assistance and other forms of intervention to workers displaced by the COVID 19. The financial assistance can help the workers to tide over in a short term and to mitigate the immediate adverse economic impact of the community quarantine or lockdown. This Adjustment Measures Program is only for short term and not for long term solution.

However, there were 8,116 establishments with 230,210 workers who were not given financial assistance due to limited budget of the Department of Labor and Employment. There was a big difference between the numbers of benefited

establishments vis-à-vis the affected establishments and the benefited workers in relation to affected workers.

There were also administrative issues that cropped up during the implementation of the CAMP as follows:

1. Form of notification to the workers is through text or call and many of them do not have an updated cell numbers;
2. Submission of requirements such as payroll/payslip and Establishment Report Form thru online by the employers is challenging;
3. No prioritization of the affected establishments and employees.

Based on the Guidelines on the Adjustment Measures Program, CAMP Assistance has two components such as Financial Support and Employment Facilitation. However, there was no intervention in the employment facilitation of the affected workers.

Recommendation

Department of Labor and Employment (DOLE):

1. Additional funds for the affected establishments and workers who were included in the cut off.
2. Review the administrative concerns particularly on the release and claims of the workers in the financial institutions.
3. Review on the criteria of the affected establishments and workers.
4. Transparency of the benefited establishments and those who applied that were included in the cut-off.
5. Provide employment facilitation on the affected workers.

Public Administrators

1. This will be the benchmark for all public managers or administrators who will implement social safety net program of the government.

Future Researchers

1. This will pave the way for more studies in the field of social safety net programs of the government and non-governmental organizations.

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A CASE REPORT OF PATHADI TAILA MARSHA NASYA AND LAGHUSUTASHEKHARA RASA ON APEENASA-CHRONIC ALLERGIC RHINITIS

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ABSTRACT

28 Nasagata rogas stated in susruta Samhita . Among these Nasagata rogas features of Pootinasya, Dushtha Pratishyaya and Apeenasa are similar to the clinical features of Chronic Allergic Rhinitis (AR). Apeenasa is a condition in which vitiated vata and kapha causes aabadhha nasa associated with either shoshana or prakledana ,nasa dhoomayana and gandha and rasa ajnanatha with some clinical features of vatakaphaja pratishaya.This condition can be corelated to CHRONIC ALLERGIC RHINITIS.. In Ayurveda many treatments are being described for Urdhwajatrugata Rogas and for Nasagata rogas. Among them Nasya karma is the special line of treatment for urdhwajatruvikara. The complete procedure of Nasya includes Poorva Karma (Snehana and Swedana), doshas are mobilised and vasodilation occurs which helps to eliminate doshas and provides better channel for absorption of the Oushadhi.In Pradhana Karma doshas are elimintaed. Kavala as Paschat Karma eliminates the remaining Doshas and better absorption of the medicine which ultimately reduces the symptom of disease. A clinical observation has shown effective result in the treatment of Chronic Allergic Rhinitis with Pathadi marsha Taila Nasya and Lahusutashekhara Rasa. A case report of a male patient , aged 35years with complain of nasal obstruction, foul smell from nose, heaviness of head, nasal discharge, continuous sneezing and generalised weakness has been presented here.

KEYWORDS: Apeenasa, chronic Allergic Rhinitis, Pathadi Taila Nasya, dhoomapana

INTRODUCTION

Chronic Allergic Rhinitis is an acute IgE mediated type 1 hypersensitivity reaction of nasal mucosa in response to antigenic substance [allergen]associated with episodic attacks of sneezing ,watery rhinorrhea and watering of eyes.Patient may also present with lightness of chest due to sub clinical.This condition can be correlated with Apeenasa which is explained under Nasagata Roga with characteristic features like nasal obstruction, running nose, Dryness of nose, anosmia, and loss of taste.The treatment modalities include attention to general hygiene ,nasal irrigations with alkaline solution help to keep nose free from viscid secretions and remove superficial infection ,nasal decongestants to relieve nasal obstruction and improve sinus ventilation. Ayurvedic treatment like Sodhana Nasya, Dhoomapana and Rasayana. “Nasa hi Siraso Dwaram Tena Tadvyapya Hanti Taana”². Hence pathadi Taila marsha nasya and laghu sutashekhara rasa internally was selected for this study.

Case Report : A 35 Years male with mucopurulent nasal discharge, heaviness of headache, continuous sneezing in early morning , generalised weakness ,nasal obstruction came for consultation in our opd

Past History : Patient took antibiotics, antiallergics, nasal decongestants,systemic steroids; got symptomatic relief but the symptoms reoccur again.

Patient were treated with pathadi Taila marsha Nasya followed by Dhoomapana for 1week

The details of the procedure are shown below

Procedures Administered to the Patient :

Poorva Karma	Mukha Abhyanga, Swedana
Pradhana Karma	Instilled 12 drops of pathadi Taila in each nostril
Paschat Karma	Dhoomapana and kavala

Laghusutashekhara rasa 1BD before food with luke warm water for 30 days.Advised to follow the Pathyapathya like laghu ahara ,avoid sheetaambupana ,atyambupana,atiswapna, sirasnana ,dadhi at night

Treatment duration : marsha nasya with pathadi taila followed by dhoomapana for 7 days total 30 days treatment .

RESULT

First sitting: The patient got mild reduction in nasal obstruction and episode of sneezing .



Second sitting: Patient feels better, nasal obstruction reduced markedly. Heaviness of head were absent and no fresh complaints were observed. Perception¹ of smell was quiet good. Third sitting: Patient got marked improvement and comfortable

DISCUSSION

Allergic rhinitis is an atopic disease presenting with symptoms of sneezing,nasal congestion ,clear rhinorrhea,and nasal pruritis¹.The etiological factors comes under two headings¹ :precipitating factor and predisposing factor. Precipitating factor includes aerobiological flora and nasal physiology whereas predisposing factor includes age ,sex, industrialization and urbanization ,genetic predisposition, focal sensitivity ,IgAdeficiency ,psychological factor , living conditionsenvironmental factors .

Pathogenesis¹
 1.Primary response which is also called ‘priming’.after initial exposure to the allergen [antigen],in genetically predisposed individual ,specific antibody is produced which gets fixed to the mast cells and basophils .This sensitizes the nasal mucosa. Allergic challenge occurs in less than 24hrs and the reversal starts 48 hrs after .It is mainly mediate by histamine.

2.Local phenomenon occurs in response too the chemical mediators leading to mucosal oedema associated with sneezing.
 3.It occurs due to non specific stimuli like pollutants ,salicylates,cold weather ,air conditioning ,etc .this can initiate a response similar to priming and can precipitate symptoms.

Clinical Features IncludesSymptoms¹

The symptoms may be seasonal or perennial.All symptoms are simply a manifestation of the bodys defense mechanism to the allergen.

Classical:mainly seen in seasonal allergic rhinitis .this include paroxysmal allergic rhinitis.This includes paroxysmal bouts of sneezing, watery rhinorrhea and nasal obstruction with itching of the nose on exposure to known or unknown allergen .this may be associated by non nasal manifestation like watering and itching of the eyes,itching of the palate and skin and in some it may be associated with bronchospasm,which may be subclinical .patient may complain of hyposmia or anosmia depending on the severity of the disease.

In perennial allergy the symptoms are less severe and may present as recurrent cold or nasal stuffiness with sneezing and watery rhinnorrhea.

Signs

- Pale bluish edematous nasal mucosa
- Bulky edematous turbinates with bluish/purplish tinge of the mucosa
- Mucosa coated with clear/mucoid secretions
- In advanced cases the mucosa of the middle turbinate may be polypoidal and frank polyposis
- Septum may be thickened due to mucosal swelling

Treatment

- Avoidance of allergen
- Pharmacotherapy

[a]anti histaminic

- [b]steroids]
- [c]sodium chromoglycate
- [d]decongestant
- [e]saline irrigation
 - Immunotherapy

The clinical feature of Apeenasa, Pootinasa and Dusthapatishyaya are related to the chronic allergic rhinitis. Apeenasa – dryness of nose , sticky nasal discharge,burning sensation in the nose, loss of smell and taste, Nasal obstruction,pale nasal mucosa

Pootinasa- foul smell through the nasa and mukha .^{5,6}mouth⁷
 Dusthapatishyaya- sometimes obstructed and sometimes open nose, sometimes wet and dry nose and the other symptom is the loss of smell sensation.⁸

The treatment of these Nasagata Rogas includes Snehana, Swedana, ubhaya shodana , Dhoomapana, and Nasya. Out of the above modalities the Tikshna Nasya with pathadi Taila, which is Kaphahara is selected along with laghu sutashekara rasa internally is chosen.

Probable Mode of Action

Deepana Pachana Oushadhi modulate the digestive power and morbid doshas pakwa state is rendered so later it can be expelled easily by nasya . Mukhaabhyanga-by this blood circulation is increased and mobilises the doshas from site of morbidity to elimination site Swedana -from the affected site it helps to eliminate dosas by marsha nasya. Sodhana Type of Nasya : doshas collected ain urdwanga are expelled out through nasa .By the drug property it gets absorbed in nasal mucosa and helps to remove doshas and it does santarpana of tissues and rejuvenates the nasal mucosa.

Mode of action Nasya Drug

The pathadi Taila instilled in Nasal cavity shows two effects local effect and systemic effect. In local effect by irritating drugs stimulation of olfactory neurons ,sneeze reflex occurs and expulsion of secretions from paranasal sinuses .In systemic effects absorption of nasya drugs ,stimulation of hypothalamus,release of certain neurochemical transmitters which inturn alleviates symptoms of disease

Paschat Karma

The dhumavarti helps to remove kapha after marsha nasya karma. Kavala causes vasodilation after Dhoomapana ,so remained dosas are expelled out and better absorption of medicines.

CONCLUSION

Apeenasa is a disease which causes abaddha nasa associated with palness of nasal mucosa, nasal obstruction and heaviness of head,sneezing due to vitiated Vata and Kapha Dosha. By Nasya karma helps to eliminate of doshas ,reduce nasal obstruction and sneezing , reduction of foul smell of nose. The Dhoomapana completely reduces heaviness of head and laghusutashekara rasa modulate the action of pathadi taila and dhumapana also eliminates the residual doshas. Thus this combination of the medicine can be taken for Apeenasa or chronic Allergic Rhinitis (AR).

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CONTRACT CANCELLATION BASED ON MISUSE OF CIRCUMSTANCES FACTOR

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ABSTRACT

The purpose of this study is to analyze (1) the factors that determine the existence of a misuse of circumstances in a contract; and (2) the basis for the judge's consideration in canceling an agreement containing a factor of misuse of circumstances. The research method used is normative legal research. The results of the study show that (1) The determination of the factors of misuse of circumstances in a contract can be seen from (a) the presence of a defect of will in the making of the contract; (b) there are conditions in the agreement that are actually unreasonable or inappropriate or contrary to humanity; (c) the weak party is under pressure; (d) if there are circumstances where the weaker party has no choice but to enter into a contract with onerous terms contained in the contract; and (e) the party is weak, the value of the reciprocal rights and obligations of the two parties is very unequal; (2) The basis for the judge's consideration in canceling an agreement that contains a factor of misuse of circumstances by using jurisprudence and a sense of justice, considering that misuse of circumstances in contracts/agreement has not been strictly regulated in the Civil Code or other laws and regulations. Arrangements for misuse of circumstances can also be applied in the event that the agreement contains errors, or oversight (dwaliing), coercion (dwang) and fraud (bedrog), which the weak party feels is very burdensome and contrary to a sense of justice and humanity.

KEYWORDS: *Accountability, Notaries, PPAT, Sale and Purchase of Land, Fake Evidence*

INTRODUCTIONS

The most important characteristic of an agreement is the mutual consent of the parties. This collective agreement is not only a characteristic in making agreements, but it is important as an intention expressed to other parties. In addition, it is very possible that a valid agreement was made without a mutual agreement. (Arthur s' Hartkamp & Marianne M.M. Tillema, 2013)

Agreements must be formed based on free will and in a free atmosphere as well. The agreement was born ex nihilo, namely the agreement as a manifestation of the free will of the parties making the agreement. The agreement is the result of free choice. No one is bound by an agreement as long as it is not carried out on the basis of a free choice to carry out a contractual obligation that can only be created by the intent and will of the parties. The agreement is exclusively the free will of the parties making the agreement (Ridwan Khairandy I, 2014). Thus, the agreement must be based on the agreement of the parties to the agreement. Agreements must be formed based on free will and a free atmosphere as well.

The agreement in the formation of the agreement is a "round" agreement and is an agreement that is mutually beneficial (mutual benefit). In practice, agreements are often the result of coercion, error, or fraud. The agreement did occur, but in the agreement, for example, contained factors of fraud or coercion. Such agreements contain defects of will. (Ridwan Khairandy II, 2013)

Defect of will (*wilsgebreken* or defect of consent) is a defect in forming an agreement in an agreement. The defect of this will is the imperfect agreement. If the agreement contains a flawed will, it does appear as if there is an agreement, but the agreement was formed not based on free will. This volitional defect usually occurs in the pre-contract period or phase. (Ridwan Khairandy II, 2013)

The agreement in the formation of an agreement should be a unanimous agreement and is a mutually beneficial agreement. In practice, often the agreement obtained is the result of coercion, fraud, error, or misuse of circumstances. Agreements that happen due to the presence of one of these factors are called agreements that contain defects of will. (Ridwan Khairandy II, 2013)

In this regard, Article 1321 of the Indonesian Civil Code (hereinafter referred to as the Civil Code) states that no agreement has force if it is given due to an oversight, or obtained due to coercion or fraud. Thus the defects of will mentioned in Article 1321 of the Civil Code include error or oversight (*dwaling*); coercion (*dwang* or *bedreiging*); and Fraud (*bedrog*). The defect of will mentioned in Article 1321 of the Civil Code is called a classic defect of will. In addition to the defect of will referred to in Article 1321 of the Civil Code, in judicial practice as reflected in jurisprudence there is also a fourth form of defect of will, namely misuse of circumstances (*misbruik van omstandigheden*). (Ridwan Khairandy II, 2013)



The legal institution (*rechtsfiguur*) of misuse of circumstances (*mishruik van omstandigheden*) is a new form of handicapped will in the legal system of Dutch legal agreements. Dutch Treaty Law adopted this institution of misuse of circumstance from English law (J.M. Van Dunne, 2011). Initially, the misuse of this situation in Dutch law developed in jurisprudence. Now this institution is regulated in Article 3.44.4 *Nederland Burgerlijk Wetboek* (commonly referred to as *Nieuwe Burgerlijk Wetboek* (Bw), New Bw) (Ridwan Khairandy I, 2014). In Indonesia, this institution has not yet been regulated in the Civil Code, but it has been accepted in jurisprudence as the fourth form of handicapped will.

Misuse of circumstances can result in an agreement having no legal force, if the agreement is made based on a cause that is contrary to good morality and the use of circumstances which results in the opposing party being unable to make an independent decision. In legal developments, misuse of circumstances can be used as a reason to cancel an agreement, although this is expressly not regulated in the Civil Code (blank norm), especially in the articles which state the reasons for cancellation, namely Article 1322 of the Civil Code concerning oversight, Article 1323 of the Civil Code concerning coercion and Article 1328 of the Civil Code concerning fraud, as reasons for canceling the agreement. From this, it can be concluded that agreements made with the factors of *dwaling* (mistakes/oversights/ misguidance), *dwang* (coercion) and *bedrog* (fraud) as well as agreements made based on unbalanced economic conditions, can be canceled by the Judge because they fulfill factors of state misuse.

Based on the description above, it can be stated that the laws and regulations in Indonesia have not thoroughly regulated the misuse of circumstances in making agreements (empty norms), as a result the courts in deciding cases of misuse of these conditions are based more on the jurisprudence of judges, both judges at district courts, high court or a judge at the Supreme Court or even just based on the judge's consideration alone.

Based on the background of the problems described above, the formulation of the problem in this study can be stated in the research questions are (1) What factors that determine the existence of a misuse of circumstances in a contract? and (2) What is the basis for the judge's consideration in canceling an agreement that contains a factor of misuse of circumstances?

Research Methodology

The research method used in this research is normative legal research. Normative legal research is research conducted by examining the laws and regulations that apply or apply to a particular legal issue. Normative legal research examines law from an internal perspective with the object of research being legal norms (I Made Pasek Diantha, 2017). Normative research is often referred to as doctrinal research, namely research whose object of study is documents of laws and regulations and library materials (Peter Mahmud Marzuki, 2011). Normative legal research is also called research that is focused on examining the application of rules or norms in positive law (Johny Ibrahim, 2012). According to I Made Pasek Diantha, normative legal

research has a role in defending the critical aspects of his legal science as a normative science. (I Made Pasek Diantha, 2017)

DISCUSSION

FACTORS WHICH DETERMINE THE MISUSE OF CIRCUMSTANCES IN A CONTRACT

The principle of consensualism as contained in Article 1320 (1) of the Civil Code, means that the agreement has been born simply by having an agreement (Dian Fitriana, 2013) and therefore has created obligations for one or more parties to the agreement, as soon as these people reach an agreement or consensus, even if such agreement has been reached verbally. This means that in principle an agreement that is binding and acts as an agreement for the parties who promise does not require formalities, however, to protect the interests of the party who is obliged to fulfill the achievements, forms of formalities are held, or certain concrete actions are required (R.Subekti, 2016). What is emphasized here is the meeting of mind as the core of contract law. The principle of consensualism is the "spirit" of an agreement, but in certain situations there are agreements that do not reflect the actual form of the agreement. This is due to a defect of will (*wilsgebreken*) which affects the emergence of an agreement. (Sudikno Mertokusumo, 2017)

Therefore, in the existence of a contract where there is an indication of a factor of misuse of circumstances, the contract can be requested for cancellation. In its development, a factor of defective will appears which is called misuse of circumstances (*misbruik van omstandigheden*). Thus the principle of consensualism as inferred from the provisions of Article 1320 of the Civil Code number 1 concerning agreement (*toestemming*), which states that an agreement has been born simply by having an agreement, should also not be interpreted purely grammatically. Understanding the principle of consensualism which emphasizes the "agreement" of the parties, departs from the idea that the person dealing with the agreement is a person who upholds commitment and responsibility in traffic law, a person with good intentions, who is based on "one word and one deed".

So, with the assumption that the "gentleman" who is dealing in the contract will also manifest a "gentleman agreement" between them. If the agreement given by the parties is not within the actual framework, in the sense that there is a defect in the will, then this will threaten the existence of the agreement itself. In the end the understanding of the principle of consensualism is not limited to just basing it on an agreement, but other conditions in Article 1320 of the Civil Code are considered to have been fulfilled so that the agreement becomes valid.

One thing that must be remembered, misuse of circumstances from the start cannot be considered as something that can be justified by law. Misuse of circumstances has long been included as a general condition or good habit (*goede zeden*). On that basis an agreement can be declared invalid, either in whole or in certain parts. Thus, there is an assumption that the forbidden "cause" is the same as the "content" of the agreement which is not justified. Even though the misuse of circumstances is not solely related to the contents of the agreement. The contents may not be prohibited, but there is something else that happened at the time the agreement was



born, which caused losses to one of the parties. This is what is called misuse of circumstances. The teaching on misuse of circumstances concerns the realization of the principle of freedom of contract, because it involves misuse to interfere with the existence of free will to enter into agreements or pure consensualism in an agreement.

If you pay attention to the descriptions that have been stated above, the relationship between the misuse of circumstances and the principle of consensualism can be said to be a relationship that is closely related to one another, but this linkage has bound one of the parties. The developments in contract law have confirmed the misuse of circumstances to be one of the factors limiting the application of the principle of freedom of contract (Setiawan, 2012). In contrast to the rules of contract law in force in Indonesia, which do not yet regulate the misuse of circumstances, but still use the rubric of coercion, deception, and erroneous as a basis for declaring the defect of the agreement, then the new Dutch Civil Code contained in the NBW (*Nieuw Burgerlijk Wetboek*) has determined misuse of circumstances to be one of the reasons for canceling the contract. (Herlien Budiono, 2017)

As regulated in the Civil Code, defects of will affect the terms of the validity of the agreement, namely regarding the agreement of the parties. Starting from this, the misuse of circumstances is then included as a matter that can affect the agreement as a subjective condition for the validity of the agreement. One of the characteristics of the misuse of the condition of having a disability as stipulated in Article 1321 of the Civil Code is that there is an oversight (*dwang*), coercion (*dwaling*), and fraud (*bedrog*).

J.M. van Dunne and Gr. Van den Burght in a Diktat Course on Legal Engagement Part III in 1987 which was translated by Sudikno Mertokusumo, responding to several opinions of legal experts stated that "misuse of Circumstances is not solely related to the contents of the agreement, but relates to what has happened at the time the agreement was born, namely the misuse of circumstances which causes the statement of will and automatically one party's agreement without blemish". (Bambang Poerdyatmono, 2015)

The teaching of misuse of circumstances itself contains two factors, namely (1) factor of misuse of circumstances (opportunities) by other parties; and (2) The factor of loss for one party. Furthermore, Van Dunne distinguishes the first factor into two, namely the misuse of economic advantage and the misuse of psychological advantage, which are described as follows:

- 1) Requirements for misuse of economic advantage, namely one party must have an economic advantage over another and the other party is forced to enter into an agreement
- 2) Requirements for misuse of psychological advantage, namely (a) One party misuses relative dependence, such as a special trust relationship between parents and children, husband and wife, doctor and patient, pastor and congregation; and (b) One of the parties misuses the special mental condition of the opposing party, such as having a mental disorder, inexperience, rashness, lack of

knowledge, bad physical condition, and so on. (Henry P. Panggabean, 2011)

BASIS OF THE JUDGE'S CONSIDERATIONS IN CANCELING THE AGREEMENT THAT CONTAIN MISUSE OF CIRCUMSTANCES FACTOR

The misuse of circumstances in the Maonah case against Herman Santoso occurred because Herman Santoso concealed the real situation that the land purchased from Maonah was not for his own interests, but that the land would be purchased by the City Government of Magelang c.q. Mayor of Magelang with many times higher prices. This act was carried out with the aim of seeking personal gain for Herman Santoso and harming Maonah. This act was an act of misusing the actual situation which was intended to seek personal gain which resulted in a great loss to Maonah, and was an illegal act.

Unlawful act in the form of misuse of circumstances by hiding the purpose of the purchase made by Herman Santoso, namely Herman Santoso's legal act of buying land from Maonah and selling it to the City Government of Magelang c.q. The mayor of Magelang is not in accordance with decency and decency and acts against the law are arguments that are not based on strong evidence and are mutually inconsistent.

Regarding the lawsuit, the Magelang District Court has made a decision, namely decision No. 24/PDT/G/2008/PN.MGL., dated 11 June 2009, stated that Herman Santoso had misused the situation/opportunity to buy land SHM No. 86 on behalf of Maonah so that he decided to cancel the private sale and purchase between Maonah and Herman Santoso on land SHM No. 86 in the name of Maonah which is located in Dukuh Sanden, Kelurahan Kramat, Kecamatan Magelang Utara, Kota Magelang.

The District Court's decision has been upheld by the Semarang High Court with Decision No. 288/Pdt/2009/PT.Smg, dated 10 November 2009. This decision was also upheld by the Supreme Court in Decision No. 1992 K/Pdt/2010. In this case, both the judges at the Magelang District Court, the judges at the Semarang High Court and the Supreme Court were of the opinion that Herman Santoso had committed an act of misuse of circumstances, which fulfilled the factors of *dwang*, *dwaling* and *bedrog* considering the legal conditions for misuse of circumstances had been determined if first special circumstances such as an emergency, dependency, carelessness, mental insanity and inexperience, secondly there must be something real such as being required to know that the other party due to special circumstances is moved (his heart) to conclude an agreement, thirdly misuse, here it is emphasized that one of the party has carried out the agreement even though he or should have understood that he should not have done so and knew, the four causal relationships. The most important thing is buying and selling land in this case based on bad faith to gain excessive profits.

The judge's decision in the Maonah case against Herman Santoso was based on the consideration of one of the reasons for canceling the agreement, namely the defects of the classic will of Article 1321 of the Civil Code, namely oversight (*dwang*), coercion (*dwaling*), and fraud (*Bedrog*). As stated in



the Civil Code, this defect of will affects the terms of the validity of the agreement, namely regarding the agreement of the parties. Starting from this, the misuse of circumstances is then included as one of the things that can affect the agreement as a subjective condition for the validity of the agreement.

Misuse of circumstances as a factor that limits freedom of contract, related to the occurrence of the contract, not because of a cause that is not permissible. The misuse of circumstances is not only related to the contents of the agreement, but also related to what has happened at the time the agreement was born because it is not free to determine its will in the contract. Misuse of circumstances relates to circumstances that play a role in the occurrence of contracts, namely enjoying other people's conditions does not cause the contents or intent of the contract to be prohibited, but causes the will that is misused to become not free. The real disease does not lie in the cause of what is not permissible, but lies in the defect of the will. (Sudikno Mertokusumo, 2017)

Someone who has an advantage in bargaining position will be able to dominate and influence the will of the other party in a contract, so that the other party is forced to enter into the contract. More or less there must be a forced position on the part of the needy, in which case there is no real alternative to entering into a contract with another person, and thus there is also no possibility of holding a real contract (Sudikno Mertokusumo, 2017). Unbalanced advantages can give birth to unequal agreements, thus giving birth to contracts based on pseudo agreements, which are made because of the compulsion of the weaker party to fulfill their needs. At first glance, the event is protected by the principle of freedom of contract, and therefore has binding force, but because the agreement given is not based on free will, but because of coercion, the contract can be canceled on the basis of misuse of circumstances. Presumably it can be said, that freedom of contract that is not responsible will tend to lead to misuse of circumstances. By admitting that misuse of circumstances is one of the reasons for canceling a contract, it simultaneously functions as a limiting factor against the practice of freedom in making contracts.

In misuse of circumstances the problem is regarding the superiority of one party over the other. This advantage is not only economic, but also psychological advantage or both, both economic advantage and psychological advantage. When there is a misuse of advantage, there is a misuse of circumstances (Sudikno Mertokusumo, 2017). Misuse of circumstances happens because there is an inequality of bargaining power which cannot be avoided by the weaker party and the stronger party misuses it by forcing the contents of the contract which gives him an unequal advantage.

Cases of misuse of circumstances that occur based on economic imbalances occur in the interconnection cooperation agreement between Telkomsel and PT. Naprindo Ponsel Cellular (NTS) as stated above. A misuse of circumstances can be identified by checking the conditions or certain conditions regarding whether there is a misuse of circumstances. As previously described. Thus, the fulfillment of the factors of these terms and conditions indicates that there has been a misuse of circumstances. This case is based on the Decision of the Commission for the Supervision of Business Competition Case Number: 26/KPPU-L/2007.

In order to prove that there was misuse in the Telkomsel-NTS Interconnection Cooperation Agreement, it is necessary to link it to Van Dunne's statement which stated that this misuse of circumstances could happen due to economic or psychological advantages. The party with a special position takes unfair advantage of the weaker party. This was done without coercion or fraud. Here there is an imbalance in the relationship between the processes of the contract. In addition, existing facts will also be included to prove whether there was such misuse. The existence of economic advantage alone does not result in misuse of circumstances. Still other conditions are needed to show the existence of a misuse of circumstances. But this factor is still needed to prove it. Telkomsel's market dominance shows its superiority compared to other cellular operators. Based on these matters, it has been proven that Telkomsel has an economic advantage over NTS before the creation of the Tekomsel-NTS Interconnection PKS. The factor of economic advantage in this case is fulfilled. Telkomsel is proven to have an economic advantage compared to NTS. Because of this, Telkomsel is considered as the economically more powerful party and the party considered as the counter party is NTS.

In terms of fighting for customers, the incumbent will certainly be superior. Prospective customers will prefer the incumbent as an operator that has advantages in network and subscribers because these prospective customers can communicate with many subscribers in the network (Agus Tjahayana, 2012). This certainly does not apply to NTS as an operator with a small network and subscribers. Prospective customers, of course, will carefully consider choosing a new operator. Prospective customers, of course, do not want if they can only communicate with a few customers who are covered by the new operator's network. This makes it very difficult for new operators to develop.

To be able to overcome this, NTS requires interconnection with Telkomsel, which has a wide network and many subscribers. With this interconnection, NTS subscribers can communicate with Telkomsel subscribers so that NTS subscribers are not limited to only being able to communicate with fellow NTS subscribers. This effort has opened up more opportunities for NTS to acquire potential customers and compete with other cellular operators to penetrate the market by utilizing the interconnection with the Telkomsel network.

Telkomsel, in this case, must have known that due to the special circumstances it experienced, NTS was moved to close the Interconnection Agreement. If this is not the case, Telkomsel should know about this condition because it is a real thing (Henry P. Panggabean, 2011). This condition is of course unbalanced. NTS does not have equal bargaining power with Telkomsel. So, like it or not, NTS must follow these provisions. If not, the interconnection will not be provided by Telkomsel (take it or leave it contract). Basically, NTS never took the initiative from the start in an agreement to fix the c price.

The signing of the Interconnection Cooperation Agreement and the Addendum by the NTS Directors at that time was solely to protect business interests (business necessity) so that NTS could immediately obtain interconnection with Telkomsel's network. In fact, if the minimum tariff for Short Message Service is not set in the



Telkomsel-NTS Interconnection Cooperation Agreement, it is hoped that NTS will be able to carry out a marketing strategy by selling short message services at low prices. The strategy is basically to increase NTS's market shares, only previously only around 0.015% of the cellular market share.

Based on this description, there is a real imbalance that actually benefits Telkomsel. Although in principle the agreement was made regarding interconnection, the terms for setting the price of the Short Message Service became a part that also had to be agreed upon. Even though there is no regulation regarding the price of the Short Message Service, NTS is not free to negotiate it due to the condition of inequality of bargaining power.

The principle of *iustum pretium* in this case is used in connection with losses suffered by NTS as a result of lack of free will. The fact is, Telkomsel actually benefited. The losses suffered by NTS were in the form of economic losses which although they were not directly experienced, the potential economic losses actually occurred due to the delays in obtaining customers due to the Short Message Service pricing clause. Thus, the conditions or conditions of imbalance/bias and the benefits of the party with more economic power are fulfilled. (Kim Min Soo, 2015)

Even though one of the parties has an advantage in circumstances, this is not a reason for that party to use it in making an agreement. The advantage of using circumstances tends to be done so that it results in misuse. This will eventually result in a one-sided situation (Kim Min Soo, 2015). This condition, of course, cannot be justified. In this case, even though Telkomsel has an economic advantage, Telkomsel cannot misuse this advantage to make or determine a one-sided clause. Utilization of such advantages interferes with the freedom of NTS in rendering its agreements. Telkomsel as a party with a strong economic position may not require a clause on the basis of an imbalance in the conditions that occur. NTS's need for interconnection has increasingly supported Telkomsel in determining this one-sided clause.

The factor of misuse (*misbruik*) itself has been seen. Telkomsel basically knows or should understand that Telkomsel should not enter into an agreement that contains a pricing clause for the Short Message Service. In fact, Telkomsel should not have carried out the contents of the agreement containing this clause which in fact was one-sided and benefited Telkomsel personally. There is no justification for this condition.

Between the misuse and the making of the agreement there is a causal relationship (*causaal verband*). Without such misuse, agreements with pricing clauses will not be made and approved by NTS. According to NBW, the misuse of circumstances that lead to one-sided circumstances is included in things that can damage the agreement. In Indonesia itself, there have been several decisions stating that the misuse of this situation cannot be justified so that agreements containing these factors were canceled in several of these decisions. Thus, this kind of condition cannot be justified and therefore this factor is fulfilled. (Ridwan Khairandy II, 2013)

Based on the analysis associated with the decomposition of factors taken from Van Dunne's previous statement, Telkomsel was proven to have misused the circumstances in

making PKS Interconnection with NTS. The existence of one-sided clauses and the absence of power from one of the parties to negotiate clauses has basically shown misuse (Sudikno Mertokusumo, 2017). In summary, the terms or conditions that constitute a factor of the misuse of economic conditions by Telkomsel against NTS are:

- 1) There is an economic advantage for Telkomsel compared to NTS, seen from the breadth of its network, infrastructure, market share, and technology.
- 2) There is an urgent need for NTS to enter into a contract/agreement with Telkomsel considering the economic market and market position of NTS. NTS requires interconnection with Telkomsel to maintain its business and develop it considering NTS' limitations and NTS's weak position in the cellular telecommunications market.
- 3) The Interconnection Cooperation Agreement and the First Addendum that have been approved contain unbalanced and favorable terms for Telkomsel so that the agreement is one-sided. Telkomsel's "forced" SMS pricing clause hindered NTS's rate of acquiring subscribers but this actually benefited Telkomsel because it would be difficult for its competitors to develop. Such an agreement is one-sided.
- 4) Such a one-sided situation cannot be justified by Telkomsel's superior circumstances. Even though Telkomsel has such advantages, this is not a reason for Telkomsel to enter into a one-sided agreement.

CONCLUSION

Based on the discussion that has been described above, it can be concluded the following matters

1. The determination of the existence of factors of misuse of circumstances in a contract can be seen from (a) the existence of defects of will in the making of the contract; (b) there are unreasonable or inappropriate terms or conditions that are contrary to humanity (unfair contract terms); (c) the weak party is under pressure; (d) if there are circumstances where the weaker party has no choice but to enter into a contract with onerous terms contained in the contract; and (e) the party is weak, the value of the reciprocal rights and obligations of the two parties is very unequal.
2. The basis for the judge's consideration in canceling an agreement that contains a misuse of circumstances factor by using jurisprudence and a sense of justice, considering that misuse of circumstances in contracts/agreement has not been explicitly regulated in the Civil Code or other laws and regulations. Consideration of justice is needed considering that the misuse of circumstances that often occurs is the misuse of economic conditions, the substance of which is that one of the parties who have a dominant position misuses their dominant position either psychologically or economically so as to influence the other party to agree to the agreement. The regulation on misuse of economic conditions is intended to protect parties with a weak position in agreeing to an agreement against parties who have many advantages. In addition, arrangements for



misuse of circumstances can also be applied in the event that the agreement contains errors, or oversight (*dwaliing*), coercion (*dwang*) and fraud (*bedrog*), which the weak party feels is very burdensome and contrary to a sense of justice and humanity.

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LOCAL GOVERNMENT UNITS' (LGUs) SERVICES LINK TO GOVERNMENT FINANCIAL INSTITUTIONS' (GFIs) ONLINE AND CUSTOMER TOUCHPOINTS IN SELECTED MUNICIPALITIES OF FOURTH DISTRICT OF LAGUNA PROVINCE: FOR DIGITAL TRANSFORMATION

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ABSTRACT

This study aimed to compare service quality and challenges faced by Local Government Units (LGUs) linked with Government Financial Institutions (GFIs) and those that are not. One hundred seventy-nine (179) LGU employees from the Fourth District of Laguna Province, were surveyed via purposive sampling. Results showed that out of the 14 municipalities included, five had linked up with LANDBANK, a GFI, while the remaining nine still needed to start linking up with GFIs, representing 64.29% of the total municipalities. The study's results found that the lack of funding for ICT infrastructure, absence of an IT officer, poor internet connectivity, and lack of knowledge in digitalization were significant challenges encountered in implementing e-payment touchpoints. The study also found that the linked LGUs scored significantly higher in the efficiency of services, fiscal benefits, process improvement, and business-friendliness than non-linked LGUs, suggesting that linking up with GFIs positively impacts service quality perceptions. The study provides insights for the GFIs sector and LGUs in improving their e-payment services and overall service quality.

KEYWORDS: *Government Financial Institutions, Digital Transformation, Local Government Units, Online Touchpoints, Service Quality*

INTRODUCTION

Amidst the pandemic in 2020, the Philippines rapidly adopted digital payments, which is expected to continue even as in-person transactions become more common. With the closure of businesses, online transactions rose significantly, leading to an increase in contactless payment methods. To help Filipinos adjust to this new reality, Senator Win Gatchalian sponsored a bill, Senate Bill No. 1793, which aims to provide access to integrated e-Government services by the end of 2022. This bill requires all government agencies, GOCCs, instrumentalities, and LGUs to implement a digitization strategy that is compatible with the Philippine Digital Transformation Strategy 2022. The bill is also known as the "Full Digital Transformation Act of 2020."

The Executive Order No.170 promotes financial inclusion through the adoption of digital payments for government transactions. The government servicing bank facilitates electronic fund transfers, while GFIs like LANDBANK and DBP offer fintech solutions to aid LGUs. LGUs are encouraged to utilize online payment facilities and electronic services for business registration, renewal, and tax collection. This integration of LGU services with GFIs' internet payment gateway sets a safe, efficient, and convenient transaction model for the new normal, as mandated by Department of Finance Circular No. 001-2015. While the national government is pushing for digital transformation in local government units (LGUs), not all LGUs have the necessary infrastructure and investment to link up with government financial institutions (GFIs), leading to inefficiencies in their services. Challenges such as high costs, poor internet connectivity, and lack of acceptance to online payment modes also hinder LGUs from adopting digital payment systems, which may result in missed opportunities for economic growth and development.



OBJECTIVE OF THE STUDY

This study holds great timeliness and relevance, aligning with the continuous efforts of both past and present administrations to digitalize government processes. Moreover, it bears significant implications in light of the Mandanas Ruling, particularly with regard to the low-income municipalities situated within the Laguna Province. The researcher firmly believes that this study is essential for comprehending the challenges faced by local government units (LGUs) when it comes to integrating with Government Financial Institutions (GFIs). By conducting this study, valuable insights can be gained regarding the service quality provided by both linked and non-linked LGUs to the local business sector. As a result, the study furnishes evidence-based data that can be effectively utilized in crafting a well-designed action plan aimed at enhancing linking up of LGUs. Furthermore, it offers an opportunity to address the specific needs of low-income municipalities within the Laguna Province, contributing to their socioeconomic development.

MATERIALS AND METHODS

This study utilized the Descriptive Quantitative Research Method to gather data from respondents using a survey questionnaire. The Descriptive Quantitative Research method is a type of research that focuses on describing and analyzing a population or phenomenon using numerical data. It involves collecting and analyzing data using statistical techniques to identify patterns, trends, and relationships. Using descriptive research, the researcher can design pre-structured questionnaires tailored to the specific research questions. This method is associated with describing, maintaining, questioning, and interpreting existing states, emphasizing exploring and testing relationships between variables. The overall procedures for this research involved data gathering through a survey questionnaire, classification, interpretation, and assessment of the data gathered.

Population and Sampling Technique

This study aimed to statistically determine whether the Fourth District of Laguna municipalities have adopted or plan to adopt linking up with GFIs. The required data was gathered from a sample of one hundred seventy-nine (179) LGU employees from selected departments. To collect the required data, the researcher used the purposive sampling method for the LGU employees regarding the nature of their work.

Data Collection Procedure

In this study, the researcher used a self-formulated questionnaire to gather information and achieve the study's objectives. The questionnaire was divided into three sections. Section A gathered demographic information about the LGU. Section B assessed the LGU's status regarding its connection with GFIs. Section C evaluated the perceptions of LGU employees regarding service quality indicators like efficiency, fiscal matters, process improvement, and business-friendliness. The questionnaire utilized a five-point rating scale, allowing participants to provide their responses and opinions on specific criteria or variables. The collected data was then analyzed using various statistical tools such as frequency, weighted mean, and independent t-test to establish relationships among the data and obtain research results.

RESULTS AND DISCUSSION

Demographic Profile of the respondents

Table 1.: Frequency Distribution of LGU Respondents According to Assigned Department

Department	<i>f</i>	%
Others	71	39.66%
Treasury	70	39.11%
Accounting	34	18.99%
Cashiering	2	1.12%
Bookkeeping	2	1.12%
Total	179	100.00%

Table 1 provides information on the departments to which the LGU respondents belong. Of the 179 respondents, 39.11% belonged to the Treasury Department, 18.99% belonged to the Accounting Department, and only 1.12% belonged to the Cashiering or Bookkeeping Departments. At 39.66%, most respondents belonged to other departments, such as the Administrative Office, Assessors Office, or Budget. This aligns with previous research conducted by Dela Cruz, J. et al. (2021)[1] on the Cabanatuan City Treasurers Office, where a similar study was conducted focusing on digital payments for business-related taxes.

**Table 2: Frequency Distribution of LGU Respondents According to Municipality**

Municipality	<i>f</i>	%
Paete	21	11.73%
Siniloan	19	10.61%
Kalayaan	17	9.50%
Luisiana	17	9.50%
Famy	16	8.94%
Sta. Maria	16	8.94%
Magdalena	12	6.70%
Majayjay	11	6.15%
Pakil	11	6.15%
Mabitac	11	6.15%
Lumban	10	5.59%
Pangil	7	3.91%
Pagsanjan	6	3.35%
Pila	5	2.79%
Sta. Cruz	0	0.00%
Cavinti	0	0.00%
Total	179	100.00%

Table 2 provides the distribution of respondents across different cities. The table indicates that the municipality with the highest number of respondents is Paete, with 21 respondents representing 11.73% of the total number of respondents. Siniloan, Kalayaan and Luisiana have the second and third highest number of respondents, respectively, with 19 for Siniloan and 17 respondents each for Kalayaan and Luisiana. Famy and Sta follow this Santa Maria with 16 respondents each. Most of the LGUs in the study are from lower-class municipalities, which indicates insufficient funding for the ICT infrastructure due, which is a common obstacle in developing nations (Pedersen, K., 2018)[2].

Table 3: Frequency Distribution of LGU Respondents According to Municipality Income Class

Income Class	<i>f</i>	%
Fourth Class (P25,000,000 to P35,000,000)	84	46.93%
Third Class (P35,000,000 to P45,000,000)	38	21.23%
Fifth Class (P15,000,000 to P25,000,000)	38	21.23%
Second Class (P45,000,000 to P55,000,000)	19	10.61%
First Class (at least P55,000,000 above)	0	0.00%
Total	179	100.00%

Based on Table 3, out of the 179 respondents, the 84 respondents or 46.93% belonged to the fourth income class, with a range of P25,000,000 to P35,000,000. The third- and fifth-income classes had similar numbers of respondents, with 38 or 21.23% of respondents in each group. The second income class, with a range of P45,000,000 to P55,000,000, had 19 or 10.61% of respondents. The findings that most of the respondents are from the fourth- and third-class municipalities are indicative of the capacity of the LGUs to fund or invest in Information and Communication Technology (ICT) infrastructure which is a common challenge in developing countries (Ngulube, M., & Herselman, M., 2014[3]; Sultana et al., 2019)[4].

Table 4: Frequency Distribution of LGU Respondents According to Local Economy Sector

Sector	<i>f</i>	%
Agricultural Crops	174	97.21%
Livestock and Poultry	73	40.78%
Personal Services	65	36.31%
Fisheries	51	28.49%
Wholesale and Retail Trade	49	27.37%
Electricity, Water and Mining	34	18.99%
Manufacturing	29	16.20%
Construction	26	14.53%

Note. Percentage calculated based on $N=179$.



Of the 179 respondents, 174, or 97.21%, belonged to the Agricultural Crops sector. Other significant industries included Livestock and Poultry with 73 or 40.78%, Personal Services with 65 or 36.31%, Fisheries with 51 or 28.49%, Wholesale and Retail Trade with 49 or 27.37%, and Electricity, Water and Mining with 34 or 18.99%. Construction and Manufacturing had lower response rates, with 26 or 14.53%, and 29 or 16.20% respondents, respectively. One specific issue mentioned in the study of Vibora, E., & Mandigma, B. S. (2022)[5] is the unavailability of physical payment facilities. These difficulties in payment facilities and delays in reflecting payments can impact both taxpayers and the LGUs.

Table 5: Frequency Distribution of LGU Respondents According to Revenue Collected from Business Registration Fees

Revenue Collected	<i>f</i>	%
₱1,000,000 and above annually	120	67.04%
₱500,000 to ₱1,000,000 annually	26	14.53%
₱300,000 to ₱500,000 annually	18	10.06%
₱ 100,000 and below annually	15	8.38%
Total	179	100.00%

Based on Table 5, out of the 179 respondents, 120 or 67.04% answered collecting ₱1,000,000 and above annually. The second largest group of respondents, 26 or 14.53%, answered collecting between ₱500,000 to ₱1,000,000 annually. Smaller percentages of respondents responded, collecting between ₱300,000 to ₱500,000 annually with 18 or 10.06%, and ₱100,000 and below annually with 15 or 8.38%. This finding highlights the need for LGUs to support small and medium-sized enterprises (SMEs) in their jurisdictions, as they play a crucial role in the economy (Goel, R. K., and Mazzanti, M.,2019)[6].

Table 6: Frequency Distribution of LGU Respondents According to Availability of Telecommunication Facilities

Telecommunication Facility	<i>f</i>	%
Landline telephone service	142	79.33%
Mobile phone network coverage	116	64.80%
High-speed internet services	115	64.25%
Cable Television	51	28.49%
Website Platforms	25	13.97%
Satellite equipment	15	8.38%
Point of Sale (POS) machines	4	2.23%
Tap card machine	4	2.23%

Note. Percentage calculated based on $N=179$.

The 142 or 79.33% of the respondents responded that having access to landline telephone service. A slightly lower percentage of respondents responded that having access to mobile phone network coverage with 116 or 64.80% responses and high-speed internet services with 115 responses or 64.25%. A smaller percentage of respondents, precisely 28.49% (51 respondents), reported having access to cable television, while an even lower percentage, 8.38% (15 respondents), mentioned having access to satellite equipment. Moreover, only a limited number of respondents, 2.23% (4 respondents) each, indicated access to the point of sale (POS) and tap card machines. These findings align with previous studies conducted by Chen and Liang (2018)[7] and Kesharwani and Bisht (2020)[8], highlighting the correlation between lower income or limited funding from the national government and reduced access to computers and poor internet connectivity among LGUs.

Status of the LGU

Table 15: List of municipalities which are already linking up with GFIs

List of Municipalities Which are Already Linking Up with GFIs specifically LANDBANK ($n=5$, 35.71%)	List of Municipalities Which are Not Yet Linked Up with GFIs ($n=9$, 64.29%)
Pagsanjan	Famy
Majayjay	Kalayaan
Pila	Pangil
Luisiana	Pakil
Paete	Lumban
	Mabitac
	Sta.Maria
	Siniloan



Table 15 shows the number of municipalities already linking up with Government Financial Institutions (GFIs), specifically LANDBANK, with a sample size of 5 or 42%. The municipalities that have already linked up with LANDBANK are Pagsanjan, Majayjay, Pila, Luisiana, and Paete. The United States Agency for International Development (RCC, 2022)[9] conducted a study supporting the slow adoption of online or digital payments in the Fourth District of Laguna. Meanwhile, municipalities that have yet to start linking up with GFIs, which is 9 out of the total 14 municipalities in the study. These municipalities are Famy, Kalayaan, Pangil, Pakil, Lumban, Magdalena, Mabitac, and Sta. Maria and Siniloan. The percentage of municipalities that have yet to start linking up with GFIs is 64.29% (9 out of the 14). Despite the numerous studies that e-government helps improve the quality of services to citizens, the study by Luciano E. M. et al. (2018)[10] cited a limited government initiative about adopting digital payments.

Table 16: Frequency of Distribution of Challenges encountered by the non-linked LGUs on linking up with the GFIs

Challenges	<i>f</i>	%
Lack of funding for acquisition of Information and Communication Technology (ICT) infrastructure	54	45.38%
No available Information Technology Officer to handle the maintenance and daily operations of the e-payment touchpoints	45	37.82%
Poor internet connection and lack of knowledge in digitalization	20	16.81%
Total	119	100.00%

The findings presented in Table 16 shows that 45.38% of the respondents responded that more funding for acquiring Information and Communication Technology (ICT) infrastructure is a major challenge. This finding is consistent with the studies showing that more funding for ICT infrastructure is a common challenge in developing countries (e.g., Ngulube, M. & Herselman, M., 2014)[11]; Sultana et al., 2019)[12]. Another critical factor influencing the success of e-payment touchpoints is the availability of dedicated personnel to handle ICT infrastructure and maintenance, which 37.82% of respondents answered as a major challenge. This finding is supported by previous research emphasizing the importance of having trained personnel to manage and maintain ICT systems (Norouzi et al., 2019)[13]; Rashid & Ahsan, 2016)[14]. Similarly, 16.81% of the respondents responded that a lack of digital literacy and knowledge could limit the adoption of e-payment systems, especially among users who are less familiar with the technology. These findings are consistent with previous studies highlighting the importance of reliable internet connectivity and digital literacy in promoting the adoption of e-payment systems (Chen & Liang, 2018)[15]; Kesharwani & Bisht, 2020)[16].

Service Quality of Linked LGU on Four Service Quality Indicators

Table 17: Level of Efficiency of Service of Linked LGUs

Efficiency of Services	<i>M</i>	<i>SD</i>	Interpretation
1. How well your LGU administration support the adoption of technology specifically on the digital payment link up with the GFIs.	4.32	0.65	Very Highly Efficient
2. The inefficiencies were reduced in the process when the LGU adopted the linking up of online payments with the GFIs.	4.23	0.77	Very Highly Efficient
3. The LGU has benefited from the streamlining of the business registration and renewal fees payments processes.	4.23	0.67	Very Highly Efficient
4. The linking up with GFIs significantly improved the overall productivity of the employees.	4.32	0.68	Very Highly Efficient
5. The time spent on the administrative tasks related to the collection of business registration and fees significantly decreased.	4.32	0.68	Very Highly Efficient
Overall	4.28	0.62	Very Highly Efficient

Note. *N*=60. The mean is interpreted as follows: 4.21-5.00=Very Highly Efficient (VHE), 3.41-4.20=Highly Efficient, 2.61-3.40=Moderately Efficient, 1.81-2.60=Low Efficiency, 1.00-1.80=Very Low Efficiency.

The results in Table 17 suggest that the respondents positively perceive the Efficiency of the LGU's services in implementing e-payment touchpoints. The responses to the first statement, "How well your LGU administration supports the adoption of technology specifically on the digital payment link up with the GFIs", indicate a very high efficiency ($M=4.32$, $SD=0.65$). For the second statement, "The inefficiencies were reduced in the process when the LGU adopted the linking up of online payments with the GFIs", the response



shows a very high efficiency ($M=4.23$, $SD=0.77$). The third statement, "The LGU has benefited from the streamlining of the business registration and renewal fees payments processes, " indicates a very high efficiency ($M=4.23$, $SD=0.67$). Similarly, the statement "The linking up with GFIs significantly improved the overall productivity of the employees" shows a very high efficiency ($M=4.32$, $SD=0.68$). Lastly, the statement "The time spent on the administrative tasks related to the collection of business registration and fees significantly decreased" also signifies a very high efficiency ($M=4.32$, $SD=0.68$). Generally, there is a very high-efficiency rating for the Efficiency of LGU's services ($M=4.28$, $SD=0.62$). For example, a study by Cruz and De Vera (2020)[17] found that e-payment systems improved the Efficiency and accuracy of financial transactions in LGUs.

Table 18: Level of Local revenue generation and savings on operational cost (Fiscal) of Linked LGUs

Local revenue generation and savings on operational cost (Fiscal)	<i>M</i>	<i>SD</i>	Interpretation
1. With significant increase in the collection of business tax and fees since the start of linking up	4.12	0.74	High Profitability
2. The LGU's savings increase in terms of operational cost (decrease defrayal of expenses from in-person transactions)	4.17	0.76	High Profitability
3. The LGU is able to improve its annual total revenue.	4.20	0.71	High Profitability
4. The LGU has been awarded with Seal of Good Financial Housekeeping.	4.42	0.74	Very High Profitability
5. The LGU has been awarded with Seal of Good Local Governance.	4.32	0.83	Very High Profitability
Overall	4.24	0.64	Very High Profitability

Note. $N=60$. The mean is interpreted as follows: 4.21-5:00=Very High Profitability, 3.41-4.20=High Profitability, 2.61-3.40=Moderately Profitable, 1.81-2.60=Low Profitability, 1.00-1.80=Very Low Profitability.

The first statement, "With the significant increase in the collection of business tax and fees since the start of linking up", indicates high Profitability ($M=4.12$, $SD=0.74$). The second statement, "The LGU's savings increase in terms of operational cost (decrease defrayal of expenses from in-person transactions)", also shows high Profitability ($M=4.17$, $SD=0.76$). Similarly, the third statement, "The LGU is able to improve its annual total revenue", indicates high Profitability ($M=4.20$, $SD=0.71$). The fourth statement, "The LGU has been awarded Seal of Good Financial Housekeeping", shows very high Profitability ($M=4.42$, $SD=0.74$). Lastly, "The LGU has been awarded Seal of Good Local Governance" indicates high Profitability ($M=4.32$, $SD=0.83$). The LGU's receipt of the Seal of Good Financial Housekeeping and the Seal of Good Local Governance suggests that using e-payment systems has also contributed to improved financial management and governance practices (Al-Tarawneh et al., 2019)[18]. Overall, the LGU's fiscal matters, specifically local revenue generation and savings on operational costs, show very high Profitability ($M=4.24$, $SD=0.64$).

Table 19: Level of In-person transactions and more streamlined process (Process Improvement) of Linked LGUs

In-person transactions and more streamlined process (Process Improvement)	<i>M</i>	<i>SD</i>	Interpretation
1. Decrease in foot traffic, daily walk-ins and face-to-face transactions	4.15	0.71	High Improvement
2. Decrease in inquiries on the payment process of business tax and fees	4.12	0.76	High Improvement
3. The LGU's process on the payment of business registration and renewal and collections has simplified.	4.25	0.65	Very High Improvement
4. The LGU staff spends lesser time on tasks that involves payment and collection of business tax and fees.	4.25	0.70	Very High Improvement
5. The LGU finds it easier to comply with the reporting guidelines of the Commission of Audit and declared its financial reports online.	4.15	0.68	High Improvement
Overall	4.18	0.62	High Improvement

Note. $N=60$. The mean is interpreted as follows: 4.21-5:00=Very High Improvement, 3.41-4.20=High Improvement, 2.61-3.40=Moderate Improvement, 1.81-2.60=Low Improvement, 1.00-1.80=Very Low Improvement.

The responses to the first statement, "Decrease in foot traffic, daily walk-ins and face-to-face transactions", specifies significant Improvement ($M=4.15$, $SD=0.71$). It is consistent with the findings of Storper and Venables (2004)[19], who noted that adopting digital technologies by government agencies has led to a decrease in in-person transactions, as electronic communication can reduce the fixed costs associated with face-to-face interactions. Similarly, the second statement, "Decrease in inquiries on the payment process of business tax and fees", indicates the same high Improvement ($M=4.12$, $SD=0.76$). Meanwhile, the third statement, "The LGU's process on the payment of business registration and renewal and collections has simplified", shows a very high improvement ($M=4.25$, $SD=0.65$). Likewise, the fourth statement, "The LGU staff spends less time on tasks that involve payment and collection of business tax and fees,



" also shows a significant improvement ($M=4.25$, $SD=0.70$). Lastly, the fifth statement, "The LGU finds it easier to comply with the reporting guidelines of the Commission of Audit and declared its financial reports online", stipulates a high improvement ($M=4.15$, $SD=0.68$). Overall, Process Improvement indicates a significant improvement in in-person transactions and more streamlined processes ($M=4.18$, $SD=0.62$).

Table 20: Level of Business registration/renewal (Business-friendliness) of Linked LGUs

Business registration/renewal (Business-friendliness)		<i>M</i>	<i>SD</i>	Interpretation	
1.	Increase in businesses that pay tax and business registration/renewal fees on time.	4.08	0.74	High	Business-friendliness
2.	Increase in the number of businesses which transacts (register and renew) online.	4.03	0.78	High	Business-friendliness
3.	Encourages new businesses to register.	4.22	0.72	Very High	Business-friendliness
4.	Increase in the number of businesses which are compliant in paying their taxes on time.	4.07	0.76	High	Business-friendliness
5.	Improve LGU's business friendliness and competitiveness.	4.27	0.76	Very High	Business-friendliness
Overall		4.13	0.68	High	Business-friendliness

Note. $N=60$. The mean is interpreted as follows: 4.21-5.00=Very High Business-friendliness, 3.41-4.20=High Business-friendliness, 2.61-3.40=Moderate Business-friendliness, 1.81-2.60=Low Business-friendliness, 1.00-1.80=Very Low Business-friendliness.

The first statement regarding the increase in businesses paying taxes and registration/renewal fees on time shows high business-friendliness ($M=4.08$, $SD=0.74$). Similarly, the second statement on the increase in businesses transacting online also signifies high business-friendliness ($M=4.03$, $SD=0.748$). The third statement, which encourages new businesses to register, reflects high business-friendliness ($M=4.22$, $SD=0.72$). The fourth statement, related to the increase in businesses compliant with tax payments, shows high business-friendliness ($M=4.07$, $SD=0.76$). These findings are consistent with the study of Abdulwahab et al. (2020)[20], which found that adopting online tax payment systems resulted in increased timely tax payments and reduced time and cost associated with tax compliance. Lastly, the fifth statement on improving LGU's business friendliness and competitiveness indicates very high business-friendliness ($M=4.27$, $SD=0.76$). Overall, the business registration/renewal process, reflecting LGU's business-friendliness, shows high business-friendliness ($M=4.13$, $SD=0.68$).

Service Quality of the Non-Linked LGUs on Four Service Quality Indicators

Table 21: Level of Efficiency of Service of Non-Linked LGUs

Efficiency of Services		<i>M</i>	<i>SD</i>	Interpretation	
1.	I believe that linking up with GFIs support the adoption of technology specifically on the digital payment.	4.03	0.74	Highly Efficient	
2.	I believe that inefficiencies will be reduced in the process if the LGU adopts the linking up of online payments with the GFIs.	3.82	0.76	Highly Efficient	
3.	I believe that the LGU will benefit from the streamlining of the business registration and renewal fees payments processes.	3.92	0.79	Highly Efficient	
4.	I believe that the linking up with GFIs will significantly improve the overall productivity of the employees.	3.91	0.72	Highly Efficient	
5.	I believe that the time spent on the administrative tasks related to the collection of business registration and fees will significantly decrease.	3.90	0.76	Highly Efficient	
Overall		3.91	0.65	Highly Efficient	

Note. $N=119$. The mean is interpreted as follows: 4.21-5.00=Very Highly Efficient (VHE), 3.41-4.20=Highly Efficient, 2.61-3.40=Moderately Efficient, 1.81-2.60=Low Efficiency, 1.00-1.80=Very Low Efficiency.

Table 22 displays the responses of LGU respondents from the non-linked LGUs. The first statement, "I believe that linking up with GFIs supports the adoption of technology specifically on the digital payment", indicates highly efficient ($M=4.03$, $SD=0.74$). This finding aligns with the Digital Payments Transformation Roadmap for 2020 to 2023 (BSP, 2020)[21], in which the GFIs are tasked to aid in the realization of a cash-lite society. The second statement, "I believe that inefficiencies will be reduced in the process if the LGU adopts the linking up of online payments with the GFIs, " indicates highly efficient ($M=3.82$, $SD=0.76$). Likewise, the third statement, "I believe that the LGU will benefit from the streamlining of the business registration and renewal fees payments processes", shows



highly efficient ($M=3.92$, $SD=0.79$). The fourth statement, "I believe that the linking up with GFIs will significantly improve the overall productivity of the employees", also shows highly efficient perception ($M=3.91$, $SD=0.72$). Lastly, "I believe that the time spent on the administrative tasks related to the collection of business registration and fees will significantly decrease", indicates a highly efficient perception ($M=3.90$, $SD=0.76$). Overall, the perception of the respondents about the Efficiency of services offered is highly efficient ($M=3.91$, $SD=0.65$).

Table 22: Level of Local revenue generation and savings on operational cost (Fiscal) of Non-Linked LGUs

Local revenue generation and savings on operational cost (Fiscal)		<i>M</i>	<i>SD</i>	Interpretation
1.	I believe that linking up with GFIs will bring a significant increase in the collection of business tax and fees since the start of linking up.	3.82	0.71	High Profitability
2.	I believe that the LGU's savings will increase in terms of operational cost (decrease defrayal of expenses from in-person transactions).	3.80	0.71	High Profitability
3.	I believe that the LGU will be able to improve its annual total revenue.	3.82	0.77	High Profitability
4.	I believe that the LGU will pass or will be awarded with Seal of Good Financial Housekeeping	3.94	0.73	High Profitability
5.	I believe that the LGU will be awarded with Seal of Good Local Governance.	3.88	0.80	High Profitability
Overall		3.85	0.64	High Profitability

Note. $N=119$. The mean is interpreted as follows: 4.21-5.00=Very High Profitability, 3.41-4.20=High Profitability, 2.61-3.40=Moderately Profitable, 1.81-2.60=Low Profitability, 1.00-1.80=Very Low Profitability.

The responses to the first statement, "I believe that linking up with GFIs will bring a significant increase in the collection of business tax and fees since the start of linking up", show high Profitability ($M=3.82$, $SD=0.71$). As same with the second statement, "I believe that the LGU's savings will increase in terms of operational cost (decrease defrayal of expenses from in-person transactions)", signifies a high profitability perception ($M=3.80$, $SD=0.71$). The first and second findings are supported by the study of Ramos, T. (2021)[22], in which it was found that using mobile platforms provides a new source of revenue and facilitates the settlement of government transactions. The third statement, "I believe that the LGU will be able to improve its annual total revenue", indicates high Profitability ($M=3.82$, $SD=0.77$). The fourth statement, "I believe that the LGU will pass or will be awarded Seal of Good Financial Housekeeping", also signifies high Profitability ($M=3.94$, $SD=0.73$). Lastly, the fifth statement, "I believe that the LGU will be awarded Seal of Good Local Governance", also indicates ($M=3.88$, $SD=0.80$). Overall, the perceived responses of respondents from the non-linked LGUs indicate high Profitability ($M=3.85$, $SD=0.64$).

Table 23: Level of In-person transactions and more streamlined process (Process Improvement) of Non-Linked LGUs

In-person transactions and more streamlined process (Process Improvement)		<i>M</i>	<i>SD</i>	Interpretation
1.	I trust that there will be a decrease in foot traffic, daily walk-ins and face-to-face transactions.	3.89	0.73	High Improvement
2.	I trust that there will be a decrease in inquiries on the payment process of business tax and fees.	3.66	0.68	High Improvement
3.	I trust that the LGU's process on payments and tax collections will be simplified.	3.91	0.74	High Improvement
4.	I trust that the LGU staff will spend lesser time on tasks that involves payment and collection of business tax and fees.	3.92	0.73	High Improvement
5.	I trust that the LGU will find it easier to comply with the reporting guidelines of the Commission of Audit and declared its financial reports online.	3.95	0.65	High Improvement
Overall		3.87	0.59	High Improvement

Note. $N=119$. The mean is interpreted as follows: 4.21-5.00=Very High Improvement, 3.41-4.20=High Improvement, 2.61-3.40=Moderate Improvement, 1.81-2.60=Low Improvement, 1.00-1.80=Very Low Improvement.

The first statement, "I trust that there will be a decrease in foot traffic, daily walk-ins and face-to-face transactions", indicates a high improvement ($M=3.89$, $SD=0.73$). The second statement, "I trust that there will be a decrease in inquiries on the payment process of business tax and fees", also shows a significant improvement result ($M=3.66$, $SD=0.68$). The third statement, "I trust that the LGU's process on payments and tax collections will be simplified, " also shows a significant improvement report ($M=3.91$, $SD=0.74$). The fourth statement, "I trust that the LGU staff will spend less time on tasks that involve payment and collection of business tax and fees,



" shows a significant improvement result ($M=3.92$, $SD=0.73$). The fifth statement, "I trust that the LGU will find it easier to comply with the reporting guidelines of the Commission of Audit and declare its financial reports online", shows a considerable improvement result ($M=3.95$, $SD=0.65$). Generally, the survey resulted in a high improvement ($M=3.87$, $SD=0.59$), linking up with GFIs drives economic growth (DICT, 2019)[23].

Table 24: Level of Business registration/renewal (Business-friendliness) of Non-Linked LGUs

Business registration/renewal		<i>M</i>	<i>SD</i>	Interpretation	
1.	I believe that there will be an increase in businesses that pay tax and business registration/renewal fees on time.	3.82	0.71	High friendliness	Business-
2.	I believe that there will be an increase in the number of businesses which transacts (register and renew) online.	3.76	0.74	High friendliness	Business-
3.	I believe that it will encourage new businesses to register.	3.75	0.74	High friendliness	Business-
4.	I believe that it will increase the number of businesses which are compliant in paying their taxes on time.	3.82	0.77	High friendliness	Business-
5.	I believe that it will improve LGU's business friendliness and competitiveness.	3.84	0.75	High friendliness	Business-
Overall		3.79	0.66	High friendliness	Business-

Note. $N=119$. The mean is interpreted as follows: 4.21-5.00=Very High Business-friendliness, 3.41-4.20=High Business-friendliness, 2.61-3.40=Moderate Business-friendliness, 1.81-2.60=Low Business-friendliness, 1.00-1.80=Very Low Business-friendliness.

Table 24 shows the perception of LGU respondents on the business-friendliness of those from the non-linked LGUs. The first statement, "I believe that there will be an increase in businesses that pay tax and business registration/renewal fees on time", indicates a high business-friendliness ($M=3.82$, $SD=0.71$). The second statement, "I believe that there will be an increase in the number of businesses which transact (register and renew) online", also shows a high business-friendliness result ($M=3.76$, $SD=0.74$). Likewise, the third statement, "I believe that it will encourage new businesses to register", also yielded a high business-friendliness ($M=3.75$, $SD=0.74$). This finding is in line with the study of Škorić (2020)[24], in which online payment encourages businesses to register. The fourth statement, "I believe that it will increase the number of businesses which are compliant in paying their taxes on time", also resulted in a high business-friendliness ($M=3.82$, $SD=0.77$). The fifth statement, "I believe that it will improve LGU's business-friendliness and competitiveness", also produced a high business-friendliness result ($M=3.84$, $SD=0.75$). Overall, the responses of the LGU respondents from the non-linked LGUs yielded high business-friendliness ($M=3.79$, $SD=0.66$).

Table 25. Differences Between Linked and Non-Linked LGUs on Four Service Quality Indicators

	Linked		Non-linked		<i>df</i>	<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Efficiency of services	4.28	0.62	3.91	0.65	177	3.69	<.001	0.58
Local revenue generation and savings on operational cost (Fiscal)	4.24	0.64	3.85	0.64	177	3.84	<.001	0.61
In-person transactions and more streamlined process (Process Improvement)	4.18	0.62	3.87	0.59	177	3.34	.001	0.53
Business registration/renewal (Business-friendliness)	4.13	0.68	3.79	0.66	177	3.20	.002	0.51

Note. This table shows the mean (*M*) and standard deviation (*SD*) for the responses of LGU respondents from both linked and non-linked LGUs in four service quality indicators: efficiency of services, local revenue generation and savings on operational cost (fiscal), in-person transactions and more streamlined process (process improvement), and business registration/renewal (business-friendliness). The table also includes the results of an independent-samples *t-test*, which compares the means of the two groups and calculates a *p*-value. The table also contains *Cohen's d*, a measure of effect size, which is interpreted as small ($d=0.2$), medium ($d=0.5$), and large ($d=0.8$).

These findings suggest that linking up with GFIs positively impacts the perceptions of LGU respondents in terms of Efficiency of services, fiscal benefits, process improvement, and business-friendliness. The results of the independent-sample *t-tests* indicate that



these differences are statistically significant, with p -values of less than .01, which suggests that the differences are unlikely to be due to chance. Further, the moderate effect size (*Cohen's d*=0.51 to 0.61) confirms a significant difference between the perceptions of the linked and non-linked LGUs regarding the benefits of linking up with GFIs. Overall, the results of the present study align with the research of Casinillo and Abad (2019)[25], highlighting the potential benefits of electronic payment systems in government transactions and services. In conclusion, these findings suggest that the study is relevant and essential for understanding the potential benefits of linking up LGUs with GFIs.

CONCLUSION AND RECOMMENDATION

The study showed that five (5) out of 14 municipalities linked up with LANDBANK. In contrast, nine had yet to link up due to a lack of funds, no IT officer, and unfamiliarity with digitalization. The study examined the differences between linked and non-linked LGUs on four service quality indicators: efficiency of services, local revenue generation and savings on operational cost (fiscal), in-person transactions and more streamlined process (process improvement), and business registration/renewal (business-friendliness). The results showed that linked LGUs had significantly higher mean scores for all four indicators than non-linked LGUs. Based on these conclusions, it was inferred that linking up with GFIs has a positive impact in terms of service quality. Hence, the findings rejected the hypothesis and denied that there is no significant difference in the service quality indicators of linked LGUs compared to the non-linked LGUs. In conclusion, there is a significant difference in the four service quality indicators of linked LGUs compared to that non-linked LGUs.

For the future researchers, they may conduct larger-scale research with more diverse municipalities, including 1st class municipalities and cities in Laguna, and large corporations in outer cities' industrial parks to better compare small businesses. Lastly, the future researchers may also conduct a follow-up study that may explore the reasons behind the hesitations and concerns of LGUs in adopting new payment systems and the measures that can be taken to address them.

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AutOSINT: GUI-Based Foot printing Software with AI and OSINT

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ABSTRACT

Our paper presents AutOSINT, a cutting-edge Footprinting software that leverages AI and Machine Learning techniques to extract valuable information about target victims using OSINT (Open Source Intelligence) APIs. The software provides a user-friendly GUI (Graphical User Interface) developed with Python Tkinter, enabling users to interact and input their requirements to obtain essential details about the target victims. These details include location information, phone numbers, domain information, and more. AutOSINT offers a powerful and efficient solution for gathering crucial intelligence, aiding in investigations and data analysis.

KEYWORDS: OSINT, AI & ML, GUI, Python Tkinter.

I. INTRODUCTION

In today's digital age, the need for efficient and comprehensive information gathering is paramount. Open-Source Intelligence (OSINT) plays a crucial role in extracting valuable insights from publicly available data sources. However, the process of manually collecting and analyzing this data can be time-consuming and labor-intensive. To address these challenges, we present AutOSINT, a powerful software application that leverages OSINT APIs to streamline and enhance the information gathering process.

The unmet need for a user-friendly and efficient OSINT tool arises from the growing demand for quick and reliable data retrieval. Traditional methods often involve navigating through multiple sources and manually compiling information, leading to inefficiencies and potential inaccuracies. AutOSINT bridges this gap by providing a user-friendly graphical user interface (GUI) that simplifies the data gathering process, empowering users to effortlessly input specific parameters and retrieve targeted information.

The impact of the problem is significant, particularly for individuals, organizations, and investigators who rely on timely and accurate intelligence. The inability to gather relevant data efficiently can hamper investigations, hinder decision-making processes, and delay critical research. AutOSINT addresses these challenges by automating the data gathering process and integrating with a wide range of OSINT APIs, enabling users to access comprehensive information promptly.

The benefits of AutOSINT are manifold. Firstly, the GUI interface eliminates the need for complex programming skills, making it accessible to users with varying technical backgrounds. Secondly, the integration with diverse OSINT APIs ensures a broad range of data sources, enhancing the depth and accuracy of the gathered information. Additionally, AutOSINT provides a streamlined workflow, saving time and

effort compared to manual data collection methods. By facilitating efficient information retrieval, AutOSINT empowers users to make well-informed decisions, conduct thorough investigations, and uncover valuable insights.

We analyze existing research works [1-46] techniques and methodology to develop AutOSINT solution. In summary, AutOSINT addresses the unmet need for a user-friendly and efficient OSINT tool, with a significant impact on investigations, decision-making processes, and research. The software's benefits lie in its user-friendly GUI, integration with diverse OSINT APIs, and streamlined workflow, offering users a powerful and efficient solution for comprehensive information gathering.

This paper makes several contributions in the field of Open-Source Intelligence (OSINT) and information gathering.

- **AutOSINT Development:** The primary contribution of this paper is the development of AutOSINT, a sophisticated software application that utilizes AI and Machine Learning techniques to extract valuable information about target victims. The integration of OSINT APIs and the creation of a user-friendly graphical user interface (GUI) using Python Tkinter enhance the efficiency and usability of the tool.
- **Streamlined Information Gathering:** AutOSINT significantly streamlines the process of information gathering by automating the retrieval of data from various sources. By integrating with diverse OSINT APIs, the software provides users with a consolidated platform to access comprehensive and relevant information promptly. This streamlining of data collection saves time, effort, and resources compared to manual methods.
- **Improved Accessibility:** The development of AutOSINT with a user-friendly GUI makes it accessible



to users with varying technical backgrounds. The intuitive interface eliminates the need for complex programming skills, allowing individuals and organizations to leverage the power of OSINT without extensive technical expertise.

- **Enhanced Data Analysis:** The incorporation of AI and Machine Learning techniques within AutoSINT enables advanced data analysis capabilities. By leveraging these technologies, the software can extract meaningful insights from the gathered information, providing users with a deeper understanding of the target victims and aiding in investigations, research, and decision-making processes.
- **Practical Applications:** The paper highlights the practical applications of AutoSINT in various domains, including but not limited to cybersecurity, law enforcement, intelligence agencies, and research organizations. The software's ability to gather comprehensive information about target victims, including location, phone numbers, domain information, and more, makes it a valuable tool in investigative processes and intelligence gathering.

Overall, the contributions of this paper lie in the development of AutoSINT as a powerful and user-friendly OSINT tool, its streamlined information gathering process, improved accessibility, enhanced data analysis capabilities, and its practical applications in multiple domains.

II. METHODOLOGY

The methodology employed in the development of AutoSINT encompasses several key steps to ensure effective information gathering and user interaction:

- **Utilizing OSINT APIs:** AutoSINT leverages OSINT APIs to gather information based on the user's input. The application interfaces with these APIs to extract relevant data, including location information, phone numbers, domain details, and more. By utilizing APIs, AutoSINT ensures access to diverse and comprehensive data sources.
- **Graphical User Interface (GUI) Development:** AutoSINT features a user-friendly GUI developed using the Python tkinter library. The GUI provides an intuitive interface where users can input their desired parameters and initiate the information gathering process. The design of the GUI is aimed at simplifying user interaction and enhancing the overall user experience.
- **Input Validation:** To ensure accurate and meaningful results, AutoSINT incorporates input validation. The application verifies that all required fields are filled out and validates the entered information to ensure it is in the correct format. This validation step minimizes errors and ensures the reliability of the gathered data.
- **Displaying Results:** Once the OSINT gathering process is complete, AutoSINT displays the results within the GUI. The gathered information, including data related to the target victim's location, phone numbers, domain details, and more, is presented in an organized and easily accessible format. This allows users to review and analyze the obtained results conveniently.

- **Exporting Results:** AutoSINT provides users with the option to export the gathered results to external files, such as CSV or JSON formats. This feature enables users to further analyze and manipulate the data for their specific requirements or share it with others seamlessly.
- **Fetching Fake Domains:** In addition to the primary OSINT gathering functionality, AutoSINT includes a feature that fetches domains similar to the target domain. This capability expands the scope of information available to users and helps identify potential fake or malicious domains related to the target.

By following this methodology, AutoSINT ensures efficient and reliable information gathering while providing a user-friendly experience. The integration of OSINT APIs, GUI development, input validation, result display, result export functionality, and the fetching of fake domains collectively contribute to the effectiveness and versatility of AutoSINT as a powerful OSINT tool.

III. MODELING AND ANALYSIS

AutoSINT is a system that collects open-source intelligence (OSINT) by leveraging APIs from a list of providers. The system has a graphical user interface (GUI) that allows users to enter optional fields like phone number, name, organization name, domain, IP address, email, and upload files to initiate the data collection process. The GUI also has a "Go!" button that users can click to begin the data collection process.

Once the user clicks on the "Go!" button, the system uses the provided information to query the selected APIs and collect data relevant to the search parameters. The system then compiles the data collected from various sources into a report that is displayed to the user. The goal of AutoSINT is to provide users with an efficient and comprehensive way to gather OSINT on various subjects of interest. By leveraging multiple APIs, the system can collect a broad range of data points, making it an invaluable tool for conducting research, investigations, and threat intelligence analysis.

- **Input:** The system provides a GUI interface with a form that allows the user to input information such as phone number, name, uploaded file, organization name, domain, IP address, email, etc. The form also has an optional field to upload files. Once the user has entered the required information, they can click the "Go!" button to initiate the search using the selected APIs. The system then gathers and presents the relevant OSINT information to the user.
- **Output:** This tool can be useful for individuals and organizations looking to gather intelligence on a specific individual or entity for investigative, research, or security purposes.
- **System architecture:** Here is a basic system architecture for AutoSINT:
- **GUI layer:** The GUI layer is the front-end of the system, which provides the user interface to interact with the system. It will have a form with optional fields for phone number, name, upload file, organization name, domain, IP address, email, etc. and a "Go!" button. When the user enters information into the form and clicks the "Go!" button, the system will start processing the information.



- **API layer:** The API layer is responsible for gathering OSINT from the given information. It will use APIs from a list like <https://github.com/cipher387/API-s-for-OSINT> to collect information about the provided input. The API layer will interact with these APIs to collect and process data.
- **Processing layer:** The processing layer is responsible for processing the data gathered from the APIs. It will analyze and correlate the data to produce meaningful insights. This layer will use data analytics and machine learning techniques to extract relevant information from the data.
- **Storage layer:** The storage layer is responsible for storing the processed data. The processed data can be stored in a database or a data warehouse.
- **Reporting layer:** The reporting layer is responsible for presenting the processed data to the user in a meaningful way. It will generate reports, visualizations, and dashboards to provide insights to the user.
- **Security layer:** The security layer is responsible for ensuring the security and privacy of the data. It will use various security mechanisms such as encryption, access control, and authentication to protect the data from unauthorized access.

Overall, Autosint is a system that integrates various OSINT APIs to gather and analyze data about a given entity. The system provides a user-friendly interface for the user to input information and generates insights in a meaningful way. The system architecture ensures the security and privacy of the data and provides a scalable and extensible system.

IV. RESULTS AND DISCUSSION

The development of AutoOSINT has yielded several significant results and contributions, enhancing the effectiveness and accessibility of open-source intelligence gathering. The following key outcomes and features highlight the value and capabilities of AutoOSINT:

- **Enhanced Accessibility and User-Friendliness:** AutoOSINT provides an efficient and user-friendly approach to open-source intelligence gathering, making it accessible to a wider range of users. The intuitive graphical user interface (GUI) simplifies the process of inputting search queries, ensuring that users can easily navigate and interact with the application.
- **Typo Squatting and DNSTwist:** AutoOSINT incorporates features such as Typo Squatting and DNSTwist, allowing users to identify potential fake or malicious domains related to the target. This capability adds an additional layer of analysis and expands the scope of information available to users.
- **License Plate Information:** AutoOSINT enables the retrieval of license plate information related to the target victim. This feature can be particularly useful in investigations or research scenarios where license plate data is crucial.
- **Phone Number Information:** AutoOSINT allows users to gather information associated with a given phone number. This capability enables users to uncover valuable

details, such as social media profiles or other online registrations linked to the phone number.

- **Email-based Information Retrieval:** By providing the victim's email address, AutoOSINT fetches information regarding the applications or services the victim has registered with the same email. This feature aids in understanding the online presence and activities of the target victim.
- **Web Scraping and Domain-IP Mapping:** AutoOSINT offers web scraping functionality by providing domain names along with their corresponding IP addresses in image format. This capability allows users to analyze the relationship between domains and IP addresses, facilitating deeper investigations and research.

The discussion of AutoOSINT's results emphasizes the successful implementation of key features and functionalities, addressing various aspects of open-source intelligence gathering. The development of a user-friendly GUI, integration of diverse APIs, incorporation of advanced search techniques, and attention to system security and documentation all contribute to the robustness and reliability of AutoOSINT.

Future directions for AutoOSINT include continuous improvement through the addition of new APIs and updates to existing ones to ensure the retrieval of up-to-date information. Furthermore, ongoing efforts will focus on optimizing system performance, handling a large number of queries, and further enhancing the accuracy and comprehensiveness of the gathered OSINT.

In conclusion, the results and features of AutoOSINT demonstrate its value as an efficient and user-friendly open-source intelligence gathering tool. The incorporation of various functionalities, such as typo squatting, license plate information retrieval, phone number analysis, and web scraping, further enhance the capabilities of AutoOSINT. The continuous development and improvement of AutoOSINT will ensure its relevance and usefulness in investigations, research, and decision-making processes that rely on comprehensive and reliable OSINT.

V. CONCLUSION

In conclusion, this paper introduced AutoOSINT, a cutting-edge software application designed to revolutionize the process of Open-Source Intelligence (OSINT) and information gathering. By leveraging AI and Machine Learning techniques, AutoOSINT streamlines the data retrieval process, providing users with a user-friendly graphical user interface (GUI) and integration with diverse OSINT APIs.

The development of AutoOSINT addresses the unmet need for a more efficient and accessible OSINT tool. Its intuitive GUI eliminates the requirement for complex programming skills, making it accessible to users with varying technical backgrounds. The integration with OSINT APIs ensures comprehensive and reliable data from multiple sources, enhancing the depth and accuracy of the gathered information. The impact of AutoOSINT is significant, with practical applications in domains such as cybersecurity, law



enforcement, intelligence agencies, and research organizations. The software's ability to extract valuable insights about target victims, including location information, phone numbers, domain details, and more, empowers investigators, researchers, and decision-makers with the necessary intelligence to make informed decisions and conduct thorough investigations.

The contributions of this paper lie in the development of AutoSINT, its streamlined information gathering process, improved accessibility, enhanced data analysis capabilities, and practical applications in various domains. By providing a powerful and efficient solution for OSINT, AutoSINT not only saves time and resources but also enhances the quality and reliability of the gathered information.

In summary, AutoSINT represents a significant advancement in the field of OSINT and information gathering. The software's features and capabilities offer a transformative approach to accessing comprehensive intelligence, benefiting individuals and organizations alike. With its user-friendly interface and AI-driven functionality, AutoSINT stands as a valuable tool for investigators, researchers, and decision-makers, enabling them to harness the power of OSINT and make informed decisions based on reliable data.

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A STUDY ON CUSTOMER SATISFACTION TOWARDS FAST FOOD CENTRES DURING COVID-19 WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

In today's ever-increasing globalization of services and brands, service – oriented businesses need to concentrate towards the satisfaction of these customers. Customer Satisfaction is a strategic asset. It is one of the most important indicators of purchase intentions and customers loyalty, so that it helps to predict business growth and revenue. As there are many services provided by various industries, fast food centres have been developed tremendously. Since pandemic the consumption of fast foods have increased more. In today's world the habit of taking fast food is very fast. Especially, since pandemic the consumption of fast foods has increased more. The study focuses on preference and satisfaction level towards fast food centres during Covid-19 with special reference to Coimbatore city. The fast-food industry is booming and there are certain factors that people look for while eating out at fast food items, which needed to be highlighted. Hence the researcher made an attempt to gain knowledge about the customer satisfaction and preference of fast-food centres during Covid-19. The sample size of the study is 120 respondents and Judgmental sampling is used. The data collected through this study was analyzed by using simple percentage analysis and Chi - square Test.

KEY WORDS: Customer Satisfaction, Covid-19, Fast Food Centres

INTRODUCTION

The Pandemic of corona virus disease (Covid-19) and lockdown measures which were implemented in many countries in order to control the virus transmission, had negatively influenced the lifestyle of millions of people worldwide. Fast-Food restaurants are responding to changing consumer tastes during the corona virus pandemic. Some restaurants are focusing on expanding their takeout and drive-through businesses, while others are betting on delivery services amid a recent surge in new infections and changing regulations. And many except these efforts to pay off longer-term as the pandemic shows no signs of fading and some consumer habit could change permanently.

Consumer preferences on fast food are very strong in some societies. This is because of the parallel changes in working and social life and habits of dining out. In social context, gradually the numbers of working families are increasing worldwide. The study of consumer preferences on fast food items is so much important as it investigates the trend and patterns of fast-food consumption and the importance of various factors affecting the choice of fast food among consumers. Before Pandemic the fast-food industry enjoyed the benefits of globalization and had a CAGR rate of approximately 5 percent from 2014 to 2019. However, due to the global pandemic, the sector has lost the benefits of globalization due to the regulation limiting the cross-border flow of people and commodities.

Edelweiss estimates that while the entire food services market plunged in 82% year on year in the first half of FY 2, the contraction that organized chains such as Domino's, Burger king, MC Donald was restricted to 45 percent. With the Covid-19 shuttering in- person dining experiences and limiting restaurants from offering sit-down services to encourage social distancing, many businesses are struggling to keep a float especially the ones who do not have a larger share in the pie. Although some fast-food outlets have tried to integrate technology and drive through windows in their operations, many have not adapted to the new normal and experience a new financial struggle

During pandemic the fast-food restaurants lead the restaurant segment into a digitally improved and automated tomorrow. Amid the global pandemic, the fast-food outlets have to change their strategies to cope with Zero - contact food demand. The availability of food and snacks at low prices and selling methods tailored by manufacturers of such foods has triggered an evolution whereby, consumption of foods that require neither the structure nor the preparation of a proper meal.

OBJECTIVE OF THE STUDY

- To study the satisfaction level of the customers on fast- food centres during Covid-19.



RESEARCH METHODOLOGY

This study is based on empirical research by conduction survey. It is purely primary data based on primary data from 120 respondents following Judgement sampling method, Simple

Percentage Analysis have been used a research tool. A well-structured questionnaire was administered to analyze the Customer satisfaction towards the fast-food centres in Coimbatore during Covid-19.

ANALYSIS AND INTERPRETATION

**TABLE 1
FAVOURITE FAST FOOD OF THE RESPONDENTS**

S. No	Favourite Fast Food	Respondents	Percentage
1	Chaat Items	39	32.5
2	Pizza	22	18.3
3	Burgers	32	26.7
4	Others	27	22.5
	Total	120	100

Interpretation

The above table shows that 32.5% of the respondents favorite fast food is Chaat items, 18.3% is Pizza, 26.7% is Burger and

22.5% is others.

It is inferred that maximum of the respondents favorite fast food is Chaat items

**TABLE 2
THE TIME PERIOD OF CONSUMING FAST FOOD**

S. No	Particulars	Respondents	Percentage
1	Once a day	11	9.2
2	Twice in a Week	47	39.2
3	Once in a month	62	51.7
		120	100

Interpretation

The table shows that 9.2% of the respondents consume fast food once a day,39.2% consumes a few times a week, 51.7%

consumes a few times a month.

It is inferred that majority of the respondent consumes fast food once in a month.

**TABLE 3
THE SAFETY NORMS HAS BEEN FOLLOWED IN THE FAST-FOOD CENTRES DURING COVID-19**

S. No	Particulars	Respondents	Percentage
1	Safety norms are followed	94	78.3
2	Safety norms are not allowed	26	21.7%
		120	100

Interpretation

The table shows that 78.3% of the respondents says that the safety norms has beenfollowed in fast food centres during covid-19, 21.7% of them says that safety norm are not

followed.

It is inferred that majority of the respondents agrees that the safety norms have beenfollowed in fast-food centres.

**TABLE 4
MAINTENANCE OF SOCIAL DISTANCING DURING COVID-19 INFAST FOOD CENTRES**

S. No	Maintenance of Social Distance	Respondents	Percentage
1	Maintained	77	64.2%
2	Not Maintained	43	35.8%
		120	100

Interpretation

The table shows that 64.2% of the respondents agrees that fast food center hasmaintained social distance, 35.8% disagrees.

It is inferred that the majority of the respondents agrees that consumption of fast-food center hasmaintained social distance.



TABLE 5
THE OVERALL RATING OF THE FAST-FOOD CENTRES DURING COVID-19 OF THE RESPONDENTS

S.no	Overall ratings	Respondent	Percentage
1	Excellent	26	21.7
2	Good	60	50
3	Average	31	25.8
4	Poor	3	2.5
	Total	120	100

Interpretation

The table shows that 21.7% of the respondents give excellent rating for facilities in fast food centres, 50% gives good rating,

25.8% gives average rating and 2.5% gives poor rating. So, it is inferred that majority of the respondents gives good rating for facilities in fast food centres.

TABLE 6
SATISFACTION LEVEL FOR FAST FOOD CENTRES DURING COVID-19

S.no	Satisfaction Level	Respondent	Percentage
1	Very satisfied	28	23.3
2	Satisfied	78	65
3	Dissatisfied	12	10
4	Strongly Dissatisfied	2	1.7
	Total	120	100

INTERPRETATION

The table shows that 23.3 % of the respondents very satisfied with fast foodcentres during covid-19 satisfied, 10% dissatisfied and 1.7% strongly dissatisfied. It is inferred that majority of the respondents satisfied with the fast-food centres during covid-19.

would more likely to come from close contact with the worker in the fast-food restaurant. So that the social distancing and safety norms have to be followed correctly in fast food restaurant.

CONCLUSION

It is concluded that the respondents are least concerned about the price for consuming the fast food. This study used multiple regression analysis to test the effects of four independent variables (Taste, Price, Ambience and Location) on the consumer preference for consuming the fast-food items. The customers preference are mainly influenced by the taste of the food items, attractive and comfortable ambience and accessible location to consume the fast food. At the time of pandemic, the virus was not likely to transmit through food itself. Any risk

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DEEP LEARNING MODEL FOR FRUIT QUALITY DETECTION AND EVALUATION

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ABSTRACT

Ensuring the excellence of fruits holds paramount significance in safeguarding human well-being. The automated identification process assumes particular prominence within the realm of food industry and agriculture, offering time-saving benefits and shielding individuals from potential health complications. Fruit quality plays a crucial role in safeguarding human health, making automated detection especially significant in the food industry and agriculture. By leveraging machine learning algorithms, this system offers the potential to save time and mitigate health risks, which is made of CNN (Convolutional Neural Network). The major goal is to make it more accurate with less loss percentage and also predict fruit quality rather than only predicting the fruit. For that we have tried various pre-trained models and found their respective accuracy and loss percentage like Xception, VGG16, Resnet, Inception V3. Fruits used in the project are Apple, Banana, Guava, Lemon, Pomegranate, Orange. For our project, the ResNet model is the most suitable choice. ResNet, short for Residual Network, is a deep convolutional neural network architecture that is known for its effectiveness in image recognition tasks. It has achieved significant success in various computer vision applications. One of the key advantages of the ResNet model is its ability to handle deep networks by utilizing skip connections or residual connections. These connections allow the model to bypass certain layers, enabling the flow of information from earlier layers directly to the later layers. This approach helps alleviate the vanishing gradient problem and enables training of much deeper networks.

KEYWORDS : Deep learning Algorithms, Convolutional Neural Network, Fruit quality detection, Machine Learning, Computer Vision, Fruit Classification, ResNet 50

1. INTRODUCTION

India cultivates a diverse range of primary fruits such as Mangoes, Grapes, Apples, Apricots, Oranges, Fresh Banana, Avocados, Guava, Litchi, Papaya, Sapota, and Watermelons. The country's rich blend of climate and geographical conditions provides an ideal environment for nurturing a wide assortment of fresh fruits. When it comes to fruit cultivation, India holds the second position globally, just behind China. As per the National Horticulture Database (Second Advance Estimates) published by the National Horticulture Board, India achieved a remarkable production of 102.48 million metric tonnes of fruits during the 2020-21 timeframe. The total area under cultivation for fruits in India stood at 9.6 million hectares. Fruits are highly valued worldwide due to their nutritional value, taste, and versatility. They are not only consumed directly but also used as ingredients in various industries, including the culinary industry, where they are incorporated into dishes, desserts, juices, jams, and many other food products. India's reputation as the "fruit basket of the world" is due to its abundant production and diverse range of fruits, which are made available throughout the year due to the country's different climatic zones. This enables India to meet domestic demands and also export fruits to various countries, contributing significantly to the global fruit market. It is true that the quality of fruits plays a critical role in the health of consumers. Manual inspection of fruits can be challenging and time-

consuming, leading researchers to explore automated image processing techniques to address these issues. By utilizing computer vision and image processing algorithms, the quality of fruits can be assessed more efficiently, benefiting both customers and market establishments. Appearance factors such as size, shape, surface texture, surface color, and external defects are important indicators of fruit quality and significantly influence consumers' purchasing decisions. Computer vision techniques can be employed to evaluate these factors and categorize the image quality of fruits. Algorithms like Faster R-CNN, implemented using the TensorFlow library, can be utilized for reliable fruit quality detection. India's vibrant bazaars are known for their bustling atmosphere, with numerous vendors selling their wares, including crates upon crates of fresh fruits. The cultivation and availability of specific fruits vary across different regions of India. Here are some insights into the cultivation of certain fruits: India predominantly cultivates apples in the regions of Jammu & Kashmir, Himachal Pradesh, and the hilly areas of Uttar Pradesh and Uttarakhand. While the majority of apples are consumed in their fresh form, a portion of the harvest undergoes processing to create delectable juices, delightful jellies, and convenient canned slices.

Bananas: India and China are the world's largest producers of bananas, accounting for approximately 38% of total production.



Major banana-growing states in India are located in the northeastern and southern parts of the country, with Tamil Nadu having the largest area followed by Maharashtra and Karnataka.

Guava: Guava is an important commercial fruit in India, with the "Allahabad safeda" variety being one of the best cultivated in the country.

Indian lemons flourish in subtropical to tropical zones and find their optimal growth conditions in states like Gujarat, Andhra Pradesh, Maharashtra, Karnataka, Tamil Nadu, Bihar, Rajasthan, and Assam. These regions serve as prominent cultivators of lemons within India. Remarkably, India plays a significant role in the global lemon production, accounting for around 17% of the total output worldwide.

Pomegranate: Pomegranate is produced throughout the year in India, with the peak season from February to May. Maharashtra

2. LITERATURE SURVEY

Here is additional information on the current developments in autonomous vision-based technology for fruit detection and classification. The studies and approaches mentioned highlight the use of image processing techniques, machine learning algorithms, and computer vision methods for fruit quality assessment, fault detection, disease identification, and classification.

Shital.A[1] discussed the use of autonomous vision-based technology for fruit grading, sorting, and fault detection, specifically focusing on bananas. OpenCV and edge detection techniques were employed for image preprocessing and masking to detect flaws in bananas.

Sushree[2] applied image processing techniques for fault detection in mango fruits, including image preprocessing, segmentation, and feature extraction using the SFTA algorithm. The dataset was trained using a deep neural network (DNN) approach.

Ananthi.N[3] explored image preprocessing, feature extraction, and denoising techniques for the analysis of fruit infections. Median filtering, blob detection, and K-Means segmentation were utilized to detect and classify fruit diseases using a DNN classification method.

Meshwa Patel[4] used image processing and an SVM classifier to identify the quality of orange fruits. Image preprocessing, feature extraction using the GLCM method, and morphological image processing techniques were employed.

Yogesh[5] employed various machine learning algorithms, such as CNN, ANN, and SVM, for fruit classification and analysis of apple, mango, pear, and strawberries. The models were developed, tested, and configured for accurate results.

is the major pomegranate-producing state, accounting for a significant portion of the total area and production.

Mandarin Oranges: Among the citrus family, mandarin oranges hold a prominent place in Indian agriculture, encompassing a substantial portion (approximately 40%) of the overall citrus cultivation acreage.

Oranges: Within the realm of citrus fruits, oranges enjoy extensive cultivation in India, claiming a significant share of nearly 50% in the overall citrus cultivation expanse.

These fruits are not only vital for the domestic market but also contribute to India's export of fresh fruits, showcasing the country's diverse agricultural capabilities.

Deepthi.C[6] aimed to develop a non-destructive technology for detecting artificially ripened fruits using a CNN algorithm and system requirements analysis.

RashmiPriya[7] suggested using image processing techniques for disease detection in orange fruits, including picture preprocessing, filtering, segmentation using the OTSU method, and cluster analysis with the K-Means approach.

Additionally, the "FruitNet" dataset consists of high-quality images of popular Indian fruits. This dataset serves as a foundation for the development of more efficient and accurate systems in fruit classification and recognition.

These studies and dataset creation contribute to the advancement of fruit quality detection and classification techniques, utilizing image processing, machine learning, and computer vision algorithms.

3. PROJECT BACKGROUND

Our envisioned framework for fruit recognition and quality detection through deep learning strives to construct a model capable of precisely identifying fruits based on their size, shape, and color, while effectively disregarding extraneous factors such as environmental conditions, noise, and background interference. The system's core focus lies solely on the fruit image, aiming to deliver precise and accurate identification outcomes.

The utilization of pre-existing models, such as the ResNet50 model, for classification purposes showcases remarkable efficiency and proficiency, yielding highly accurate results. Leveraging the expertise and learned features of these pre-trained models substantially enhances the system's performance.

By adopting a deep learning approach and harnessing the power of pre-trained models, the framework facilitates progressive



model development. This adaptive approach enables the extension or fine-tuning of the model to accommodate new fruit types or variations as they arise, ensuring its adaptability and flexibility.

Additionally, the framework prioritizes the ease of maintenance and management throughout the project's lifespan. Deep learning models can be continually updated and refined by incorporating new data and enhancing the training process. This dynamic nature ensures the system's continuous evolution, enabling it to remain up to date with emerging fruit varieties and evolving quality detection requirements.

In essence, our proposed framework for fruit recognition and quality detection, empowered by deep learning, aspires to deliver an accurate, efficient, and manageable solution for fruit identification based on size, shape, and color attributes. By leveraging pre-trained models and employing an incremental development approach, the system exhibits the capacity to enhance its performance and adapt to emerging challenges within the realm of fruit identification.

4. PROPOSED METHOD

The ResNet architecture is a popular deep neural network architecture commonly used for various computer vision tasks,

including image classification. The ResNet models, such as ResNet-18, ResNet-34, ResNet-50, ResNet-101, ResNet-110, ResNet-152, ResNet-164, and ResNet-1202, differ in the number of layers they contain.

In the case of ResNet-50, it is composed of 50 layers. The ResNet architecture introduces the concept of residual learning, which helps to alleviate the vanishing gradient problem and enables the training of very deep networks.

The bottleneck building block is used in the 50-layer ResNet, also known as a bottleneck residual block. It incorporates three convolutional layers: a 1x1 convolution layer to reduce the dimensionality of the input, a 3x3 convolution layer for feature extraction, and another 1x1 convolution layer to restore the dimensionality before adding the original input. This bottleneck structure reduces the number of parameters and computational complexity compared to a plain convolutional layer, making training more efficient.

By utilizing the ResNet-50 model, which has demonstrated strong performance in image classification tasks, you can leverage its pre-trained weights or train it on your specific dataset to achieve accurate fruit classification and recognition in your system.

Table 1: ResNet Model Architecture

layer name	output size	18-layer	34-layer	50-layer	101-layer	152-layer
conv1	112×112	7×7, 64, stride 2				
		3×3 max pool, stride 2				
conv2.x	56×56	$\begin{bmatrix} 3 \times 3, 64 \\ 3 \times 3, 64 \end{bmatrix} \times 2$	$\begin{bmatrix} 3 \times 3, 64 \\ 3 \times 3, 64 \end{bmatrix} \times 3$	$\begin{bmatrix} 1 \times 1, 64 \\ 3 \times 3, 64 \\ 1 \times 1, 256 \end{bmatrix} \times 3$	$\begin{bmatrix} 1 \times 1, 64 \\ 3 \times 3, 64 \\ 1 \times 1, 256 \end{bmatrix} \times 3$	$\begin{bmatrix} 1 \times 1, 64 \\ 3 \times 3, 64 \\ 1 \times 1, 256 \end{bmatrix} \times 3$
conv3.x	28×28	$\begin{bmatrix} 3 \times 3, 128 \\ 3 \times 3, 128 \end{bmatrix} \times 2$	$\begin{bmatrix} 3 \times 3, 128 \\ 3 \times 3, 128 \end{bmatrix} \times 4$	$\begin{bmatrix} 1 \times 1, 128 \\ 3 \times 3, 128 \\ 1 \times 1, 512 \end{bmatrix} \times 4$	$\begin{bmatrix} 1 \times 1, 128 \\ 3 \times 3, 128 \\ 1 \times 1, 512 \end{bmatrix} \times 4$	$\begin{bmatrix} 1 \times 1, 128 \\ 3 \times 3, 128 \\ 1 \times 1, 512 \end{bmatrix} \times 8$
conv4.x	14×14	$\begin{bmatrix} 3 \times 3, 256 \\ 3 \times 3, 256 \end{bmatrix} \times 2$	$\begin{bmatrix} 3 \times 3, 256 \\ 3 \times 3, 256 \end{bmatrix} \times 6$	$\begin{bmatrix} 1 \times 1, 256 \\ 3 \times 3, 256 \\ 1 \times 1, 1024 \end{bmatrix} \times 6$	$\begin{bmatrix} 1 \times 1, 256 \\ 3 \times 3, 256 \\ 1 \times 1, 1024 \end{bmatrix} \times 23$	$\begin{bmatrix} 1 \times 1, 256 \\ 3 \times 3, 256 \\ 1 \times 1, 1024 \end{bmatrix} \times 36$
conv5.x	7×7	$\begin{bmatrix} 3 \times 3, 512 \\ 3 \times 3, 512 \end{bmatrix} \times 2$	$\begin{bmatrix} 3 \times 3, 512 \\ 3 \times 3, 512 \end{bmatrix} \times 3$	$\begin{bmatrix} 1 \times 1, 512 \\ 3 \times 3, 512 \\ 1 \times 1, 2048 \end{bmatrix} \times 3$	$\begin{bmatrix} 1 \times 1, 512 \\ 3 \times 3, 512 \\ 1 \times 1, 2048 \end{bmatrix} \times 3$	$\begin{bmatrix} 1 \times 1, 512 \\ 3 \times 3, 512 \\ 1 \times 1, 2048 \end{bmatrix} \times 3$
	1×1	average pool, 1000-d fc, softmax				
FLOPs		1.8×10^9	3.6×10^9	3.8×10^9	7.6×10^9	11.3×10^9

Table 2: Accuracy using different pre-trained models.

	Accuracy%	Loss%
VGG16	86	31
ResNet	85	45
Xception	98	4
Inception	-	-

We have experimented with different models and found ResNet-50 to be the most reliable and accurate for our fruit classification task. Each of the models mentioned, including Xception, VGG16,

ResNet50, and Inception-v3, have their unique characteristics and architectural design choices that contribute to their performance.



Xception represents an expansion of the Inception framework, implementing the filtering process initially on each depth map. Subsequently, it employs 1x1 convolutions across the depth to effectively reduce the input space. This approach bears resemblance to the long-standing utilization of depth separable convolutions in the design of neural networks. Notably, Xception diverges from Inception by introducing variations in the presence or absence of a non-linearity following the initial operation.

In contrast, ResNet stands as a profound neural network architecture that revolutionized the notion of residual learning. It incorporates skip connections or shortcuts, enabling the network to leap over certain layers, thus facilitating the training of exceptionally deep networks. By introducing these skip connections, ResNet effectively addresses the vanishing gradient issue, empowering the training of deeper models that exhibit enhanced performance.

VGG16 is a widely used object detection and classification algorithm. It is known for its simplicity and uniform architecture. VGG16 consists of thirteen convolutional layers, five max pooling layers, and three dense layers. The name VGG16 comes from the fact that it has sixteen weight layers, despite having a total of twenty-one layers.

Within the Inception lineage, Inception-v3 emerges as an additional convolutional neural network architecture. It integrates various enhancements, including label smoothing, factorized 7x7 convolutions, and the implementation of an auxiliary classifier to propagate label information effectively. Notably, Inception-v3 garners recognition for its commendable computational efficiency, demonstrating a reduced parameter count in comparison to VGGNet while preserving performance standards.

Each of these models has its strengths and trade-offs. By choosing ResNet-50 based on its reliability, accuracy, and loss percentage

5.3 Load the ResNet Model

in our experiments, we have made a sound decision for the fruit classification system.

5. METHODOLOGY

The proposed system is designed to overcome problems of manual techniques. This system consists of several steps to detect the quality of fruit using CNN architectural methods using pre-trained models. There are seven steps in the proposed model for quality detection as shown below.

5.1 Segregation of Dataset

The Dataset is segregated based on the quality of fruits. It contains three distinct categories namely Good Quality, Bad Quality and Mixed Quality. The total number of images is 12069 for training the model.

5.2 Splitting the dataset

We have divided our dataset into a training set, testing set and a validation set.

In our case, out of the total 12,069 files, we have allocated 9,656 files (approximately 80% of the dataset) for training the model. This larger portion of data will be used to train the model and adjust its parameters to minimize the training loss and improve its ability to classify fruit quality accurately.

The remaining 2,413 files (approximately 20% of the dataset) have been reserved for testing. These files will be used to assess the model's performance on unseen data, allowing you to measure its accuracy, precision, recall, or any other evaluation metrics relevant to your task.

By splitting the dataset into a training set and a testing set, we can train and assess the performance of the ResNet-50 model on different subsets of data, helping us gain confidence in its ability to classify fruit quality with precision.

Fig 1. ResNet Model

```
resnet_model = Sequential()

pretrained_model = tf.keras.applications.ResNet50(include_top=False,
        input_shape=(180,180,3),
        pooling='avg', classes=1,
        weights='imagenet')

for layer in pretrained_model.layers:
    layer.trainable=False

resnet_model.add(pretrained_model)
resnet_model.add(Flatten())
resnet_model.add(Dense(512, activation='relu'))
resnet_model.add(Dense(3, activation='softmax'))
```



5.4 Train the Model

To set the parameters for the ResNet model, we consider the following options:

- 1) ResNet models offer a range of variations denoted by names like ResNet-18, ResNet-34, ResNet-50, and more, which signify the network's layer count. The selection of the appropriate number of layers depends on the desired complexity and depth needed for fruit classification tasks. ResNet-50, encompassing 50 layers, stands as a popular option that strikes a balance between performance and computational efficiency, making it a commonly favored choice.
- 2) When working with the ResNet model, the decision to utilize pretrained weights from the ImageNet dataset or commence training from scratch lies in our hands. Opting to initialize the model with pretrained weights can prove advantageous, particularly if our fruit classification task exhibits resemblances to the ImageNet classes. This approach can serve as a solid starting point, potentially enhancing convergence and accuracy. Nonetheless, if our fruit dataset significantly differs from ImageNet, commencing training from scratch may be a more suitable course of action.
- 3) Validation Set: A crucial decision to make is whether to incorporate the validation set into the training process or reserve it exclusively for model evaluation. The act of dividing the dataset into distinct training and validation subsets enables continuous monitoring of the model's performance throughout training. This practice allows for informed decisions, such as implementing early stopping based on validation metrics. It is generally advised to maintain a separate validation set to ensure impartial evaluation and mitigate the risks of overfitting.
- 4) Other Parameters: Aside from the aforementioned considerations, there exist numerous additional parameters that necessitate configuration, tailored to the specific demands of our fruit classification undertaking. Among these parameters are the learning rate, batch size, choice of optimizer (e.g., Adam, SGD), weight decay, dropout rate, and data augmentation techniques, to name a few. Through a process of experimentation and

analysis of validation performance, these parameters can be fine-tuned to optimize the overall performance of the model.

It is crucial to acknowledge that the ideal values for these parameters may differ based on factors such as our dataset, available computational resources, and unique task requirements. Engaging in experiments that involve exploring various parameter configurations and assessing the model's performance is essential. This iterative process aids in identifying the most suitable configuration for our fruit classification task, aligning with our specific needs and circumstances.

5.5 Train the Model Evaluation

Evaluating the model's performance on a test set is crucial to assess its generalization capability. By achieving the desired results on our test set, we can have confidence in the model's ability to accurately classify fruit quality, including identifying bad quality fruits.

It's important to continue evaluating the model on a diverse range of test samples to ensure its robustness and reliability. Additionally, you may consider other evaluation metrics such as accuracy, precision, recall, or F1 score to gain a comprehensive understanding of the model's performance.

When we input an image of a bad quality apple and the model produces accurate results, it suggests that our ResNet-50 model has learned the relevant features and patterns associated with various qualities of fruits. This demonstrates the effectiveness of the model in distinguishing between different quality categories of fruits.

6. RESULTS

Training a ResNet-50 model to identify fruit and classify its quality is a valuable application of deep learning. Evaluating the performance of the model is an essential step to assess its effectiveness. We have got the desired results as shown in the following fig. ,which shows our model works efficiently and predicts the accurate results for the desired input.

Fig 2. Prediction of results of an input image

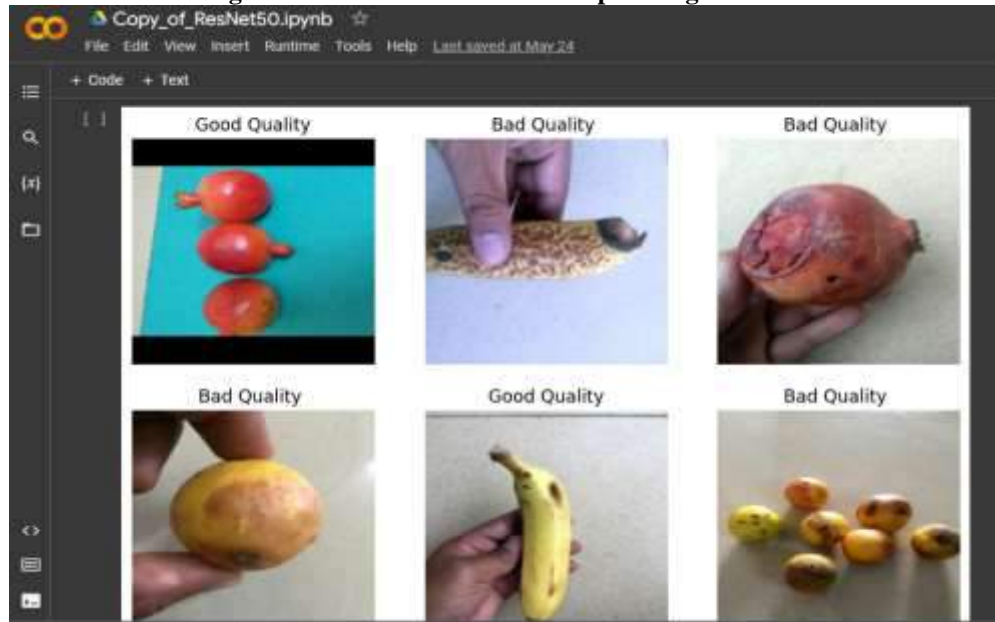




















Table 3 : Samples of images of fruits of each class

	Good Quality	Bad Quality	Mixed Quality
Apple			
Banana			



<p>Guava</p>			
<p>Lemon</p>			
<p>Orange</p>			
<p>Pomegranate</p>			

7. CONCLUSION AND FUTURE SCOPE

The use of the ResNet50 model for fruit quality detection in our project seems to have yielded promising results. ResNet50 is a powerful pre-trained CNN model known for its deep architecture and efficient performance. Its ability to handle hundreds or thousands of convolutional layers makes it suitable for complex image processing tasks.

By leveraging the ResNet50 model, we were able to achieve better accuracy and loss percentages, indicating that the model

effectively learned the features and patterns necessary for fruit quality detection. This demonstrates the capability of deep learning and CNNs in particular, to address complex tasks in the field of image classification.

The successful identification of fruit quality using the proposed method suggests the potential applicability of this technique in various domains such as juice manufacturing facilities, fruit and vegetable farms, and packing industries. The ability to automatically detect and categorize fruit quality can streamline processes, improve efficiency, and enhance quality control.



It is worth noting that future research could compare the performance of CNN-based quality detection methods with other mechanical and automated methods to evaluate their strengths and weaknesses. This comparative analysis can help determine the most suitable approach for specific applications and identify areas for further improvement in fruit quality detection.

Overall, the utilization of the ResNet50 model and the successful implementation of the proposed method highlight the potential of CNNs in fruit quality detection and open up possibilities for advancements in automated quality assessment in the fruit industry.

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THE CONTENT OF RECREATIONAL FUNCTION IN JOURNALISM

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ABSTRACT

For the past years, the transformation of functions has been evident in the media system, in which the dominant role is occupied by the recreational function. The main demand of today's media is lightness, speed and easiness of reading. Concise material, comment-sized information, small announcements, sensational photos, and attention-grabbing headlines are leading the way in media production. The article is about the content, manifestation and specific features of this genre.

KEYWORDS: *journalism, function, recreation, entertainment, variety, goraku*

The mass media, within its multifaceted activity, is characterized by the need to deliver information to all layers of society using various means. It should serve to inform, educate, promote ideas that serve social development, form constructive ideas for the development of society, and expand the human worldview.

There are a number of functions of journalism, which appear as a set of actions aimed at achieving the goal set before it. Function comes from the Latin *functio*, which means "obligation", "fulfilment of obligations" and "character of activity". [10, 57].

So far the concept of *recreation* has not been very popular, and it is used only in the literature related to fields such as physiology, medicine, socio-economic, architecture-construction, tourism as well as in the planning of measures such as improving the mental state of a person, relaxing in recreation centers, renewing the physiological and emotional strength of people. [1, 10].

This term was first used in scientific literature in the 90s of the 19th century in the USA, and in the 60s of the 20th century in Russian and Western scientific literature, it became the object of scientific research as a form of sociology. [13, 8].

The word "*recreation*" (*recreatio*) means "renewal", "restoration" in Latin language. In Polish language, *rekreacja* means having rest.

In English, the word *recreation* has several meanings: 1) renewal, restoration; 2) entertainment, relaxation; 3) break; 4) *recreation* is a compound word, meaning *re* - "again, again, once again", *creation* - to create, to build up something new.

The English word "*creative*" means "*artistic*". The founder of social psychology A.G. Maslow used the term "creativity" as a synonym for the combination of mental health. [8, 91].

Recreation, as a process of restoring the psychophysiological strength of a person, eliminates the internal unpleasant tones of the human body. This process ends with a recreational effect, and it can be evaluated as a positive effect of the recreation process.

Recreation is called "*goraku*" 娯楽 in Japanese sources, which means entertainment, that is, in the "Big Dictionary of the Japanese Language", it means "to relieve the human soul, to comfort it, to make it happy."

However, in Japanese media, entertainment programs are called "entertainment" or "variety" (バラエティ). Famous TV presenter Ohashi Kyosen says in his article for Economy Magazine, "Entertainment programs in the world are so widely developed only in Japan". [14].

The word "*variety*" in section 6 of the English-Japanese dictionary is translated as "variety show" – a type of entertainment by viewing art examples such as singing, comedy, stage performance, dancing." Also, in "Randomhouse Large English-Japanese Dictionary", Volume 2, Section 9, "variety show" is the highest form of art that combines a number of art forms, and in the explanatory dictionary of the Japanese language, the word "variety" is taken from English, in the order of song, dance, theater, a type of show that includes a game.

In the "Big Dictionary of the Japanese Language" this word is also defined as "a performance that combines art types such as song, dance, theater".

By "*Variety*", most people understand comedy programs. In fact, the comedy shows are called Shyouten and they appear as a form of entertainment.

Since the word "*variety*" is derived from English, it is not defined in the Japanese dictionary. However, in the dictionary of "Foreign words and abbreviations" this term is defined as "a show in the form of a performance that includes a sequence of activities such as song, conversation, theater, game within one show."

Existing sociological, psychological and philosophical theories require studying the concept of recreation in five groups. This approach was founded by a researcher J. Shivers. In this process, he emphasizes that the following factors should be taken into account:

1. When does recreation occur (time factor)?
2. Why (certain motivation)?
3. How (existence of arbitrariness)?



4. In what way (types of performance)?
5. In which context (defining the nature of the action of kindness)?

The first group concept is based on time. In this case, recreation is understood as the productive use of free time independent of work. The main purpose of recreation is "meaningful spending of time". An existing process can be scheduled at work or outside of work. The main thing is that it has a positive effect on a person, such as lightness, high mood and restoration of strength. For example, as a result of seminars or trainings organized during working hours, a person will have opportunities for self-expression, distraction from work and self-satisfaction.

The concept of the second group is based on non-utilitarian and self-stimulating factors. This refers to the activity that a person performs for himself in order to create cultural entertainment.

The third group is free activity recreation. At the center of all recreational activities is a person who chooses one or another recreational activity according to his will. In this group, personal desire prevails. The beneficial, meaningful, mood-enhancing effect of leisure activities depends on human character and social existence.

In the fourth group, recreation appears as an active type of activity. Supporters of this group consider vigorous recreational activity to be the main tool for regenerating the strength of the human body. When a person is tired, he wants to spend time in silence. Supporters of this group do not deny the permissibility of passive recreation for the human organism, but believe that passive recreation creates the basis for a person's habit of idleness.

The concept of the fifth group consists of good deeds and good virtue. In this case, recreation is perceived as a useful and virtuous behavior and is carried out based on the ethical principles of the individual.

It is emphasized in the scientific literature that the recreation process is closely related to such activities as "*relaxation*", "*entertainment*", "*game*". The mass media should determine how recreation is used, what is its essence, and what are its limits.

In the theory of journalism and mass communication, Russian and Western scientists defined the essence of this function in different ways. Western researchers associate the recreational function of mass media with the formation of the libertarian theory, which combines the functions of providing information and knowledge, entertainment.

In 1950-1960, entertaining and educational factors were recognized by U. Stevenson as the main function of the mass media, which aroused great interest from the majority of the audience. And K. Wright emphasized that recreation is the main purpose of mass media. Media allows you to forget about everyday problems. According to the researchers, the recreational function allows people to enjoy the imaginary life created by the media, limiting themselves from intense fatigue and psychological pressure in real life. [3, 148-149].

Writers such as L. Reisner, D. Furmanov, M. Bulgakov, M. Zoshchenko, M. Koltsov, Y. Olesha, V. Kataev, I. Iif, E. Petrov, who worked in genres such as feuilletons and essays in the journalism of this era, can be obvious examples. Through

their work, they managed to fulfill not only ideological, but also recreational tasks set for the mass media.

The development of journalism in the following years have stimulated the emergence of other functions. In 1960, G.I. Ghmara proposed 5 main functions of mass communication. Among them, the hedonistic function is of particular importance, and it means emotional satisfaction from the received information [13, 188]. Y.A. Sherkovin distinguished mainly social and socio-psychological functions of mass media.

The functions of journalism proposed by Y.P. Prokhorov were developed on the basis of the principle of mutual relations between the consumer of mass communication, social institutions and the mass audience.

The researches and studies conducted on the recreational function show that hedonistic, entertainment, and relaxation functions, interpreted in different ways by different researchers, actually constitute the recreational function. The recreational function is an integral part of the mass media system of functions. However, it is shown as a secondary function.

The recreational functions of social-psychological impact can be seen in the following:

- 1) the impact of restoration and development. In this case, a human feels liveliness and achieves idyllic mental state;
- 2) aesthetic — the feeling joy, cultural joy;
- 3) distraction, directing one's mind to some other thing;
- 4) narcotization which means formation of a permanent addiction;
- 5) escapism [6, 1246 -1596], keeping away from the life, finding oneself in an imaginative or virtual world;
- 6) hedonism [7, 220], having pleasure against one's social behavior;
- 7) catharsis [7, 608], the feeling of awakening a person's feelings and illuminating his inner world through emotional impact [12, 51].

It should be noted that the recreational function is closely related to other journalistic functions. Y.P. Prokhorov emphasized that it is necessary to distinguish the ideological, cultural-educational, advertising, recreational and organizational functions of journalism, but in practice they are manifested in common. [9]. Moreover, according to him, the recreational function and the ideological function are not only inextricably linked, but they complement each other.

Information is expressed in various genres in journalistic products aimed at satisfying the recreational needs of the audience. The form of manifestation of recreation in them is as follows:

- 1) reviews of film and theater premieres, cultural information, reportage from the venue of a festival or exhibition, interviews with artists, new literature, music or music video announcements;
- 2) "*human life path*" stories, essays on travel
- 3) articles in the spirit of advertising, providing information about tourism and recreation, cultural recreation places;



4) show business news (gossips, quarrels, news from the lives of celebrities);

5) materials dedicated to various types of human interests (such as collection, automobile, home animals, handicraft, gardening);

6) about people's lifestyles, new fashions, traditional news (useful tips such as fashion, sports, health, beauty, cooking secrets);

7) humorous publications (funny stories, issues);

8) pages in form of games (crosswords, scanwords, rebuses, puzzles, contests, tests);

9) stories about mysterious and unusual events, feng shui, astrology, horoscopes, etc.;

10) information television programs.

According to sociologists, even intellectuals and highly educated people today have lost interest in analyzing the outside world, and the desire for recreation has increased. [4, 61-77].

Recreation, as an integral unit of mass media function system, arouses aesthetic pleasure in a person, and the social-psychological influence on a person's recovery and mental calmness is greater than other functions of journalism. According to a famous producer A.E. Rodnyansky, the entire media market is dominated by entertainment television, and all TV channels are becoming similar in terms of entertainment [2]. According to sociologists, television is watched today mainly for entertainment. The existing stereotypes of mass media are changing and television is being accepted as an entertainment institution in society [11].

In the context of the development of mass culture, the widespread use of the recreational function of mass media in practice and its positive and negative consequences are analyzed, and there are a number of scientific views that the focus of mass culture in the media on sensationalism and the philosophy of consumerism will lead to a decrease in the cultural level and an increase in the direction of recreation.

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WORK PERFORMANCE OF SELECTED DEPED-SUB-OFFICES NON-TEACHING EMPLOYEES: AN INITIATIVE FOR INSTITUTIONAL TRAINING SCHEME

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ABSTRACT

This study assessed the work performance of non-teaching staff designated at Department of Education selected sub-offices in the Division of Laguna. The standardized and self-administered questionnaire was distributed via Google Form, and a total of one hundred fifty-five (155) non-teaching staff from various sub-offices took part. The data was analyzed using statistical methods like mean, standard deviation, and Pearson's correlation coefficient as part of the study's descriptive-correlational research design.

The findings indicated that an individual's work characteristics had a significant impact on their work performance, which was rated as extremely high in terms of their adaptive performance, task performance, and contextual performance. However, in counterproductive work behavior assessed very low. It only shows that Department of Education's non-teaching professionals continue to exhibit good work ethics in their respective positions. However, it was shown that there was little correlation between an employee's profile and how well they performed at work.

Furthermore, the study revealed a significant positive relationship between individual work characteristics and work performance. The results imply that employees with very high individual work characteristics tend to have better work performance in their respective institution. Based on the findings, the study recommends that continuous institutional trainings for non-teaching personnel should be conducted regularly to improve their work performance and boost their morale as professionals. This study provides valuable insights for Department of Education for continuous improvement of government services not only in teaching aspect as well as the non-teaching personnel to satisfy clients needs and giving quality education services.

KEYWORDS: *Work Performance, DepEd Sub-Offices, Non-Teaching Employees*

INTRODUCTION

The Department of Education is committed to provide learners with quality basic education that is accessible, inclusive, and liberating through: proactive leadership, shared governance, evidence-based policies, standards and programs, responsive and relevant curricula, highly competent and committed officials, teaching and non-teaching personnel and an enabling environment. By adhering to constitutional mandates, statutory, and regulatory obligations, the Department upholds the highest standards of behavior and performance to meet the demands and expectations of stakeholders. The Department also maintains client satisfaction through ongoing improvement of the Quality Management System (DepEd Order No. 009, s. 2021).

In the majority of education institutions, students often contact with non-teaching staff for both academic and non-academic reasons. Applications, enrollment, registration, problems with exams, problems with accommodations, and the calendar of lectures are only a few of the first steps. The way a staff member performs as an employee is determined by how well they carry out their responsibilities, finish necessary activities, and act in the workplace. The caliber, quantity, and effectiveness of work are all performance indicators. Everyone has different motivations for going to work; some do it for financial gain, some for romantic fulfillment or other forms of personal pleasure, while others do it to accomplish goals and

feel as though they are making a difference to something greater than themselves. It assists staff members in realizing their full potential and enhances overall performance, both of which can boost employee morale and raise the standard of the work generated. Last but not least, and most significantly, when workers perform below satisfactory levels, clients may get unhappy. Thus, poor performance and difficulty achieving goals may have an impact on the entire company.

In Department of Education, all school personnel are also advised to strictly enforce and observe Civil Service Commission laws and DepEd issuances related to teaching and non-teaching related issues and concerns. The merit, competence, suitability, and equality criteria are ones that the Department of Education (DepEd) has made a point of adhering to strictly. The relevant credentials and capability of candidates to carry out the tasks of the post shall be the basis for employee selection.

METHODOLOGY

Descriptive research design was used in this study. Simple random sampling technique to choose one hundred fifty-five (155) non-teaching personnel from three selected Sub Offices of the Department of Education. Standardized self-report questionnaire (Individual Work Performance Scale) and self-made questionnaire with 5 indicators: quality, efficiency, timeliness, accuracy, and interpersonal adaptability. The



Proposal of three research titles, approval of title template, Chapters 1-3 with questionnaire, pre-oral defense, communication letter to Division Office for approval, identification of respondents using sampling technique, gathering of questionnaires, scoring, analyzing, and interpreting data

Percentage and frequency distribution, Weighted Mean and Standard Deviation, One Way ANOVA, Pearson Coefficient Correlation (r)

Overall, this study aims to assess the work performance of non-teaching personnel in selected Sub Offices

of the Department of Education using a descriptive research design and non-experimental research method. The researcher used the simple random sampling technique to choose one hundred fifty-five (155) non-teaching personnel and collect data using a standardized self-report questionnaire and self-made questionnaire. The gathered data will be subjected to statistical analysis using various tools such as Percentage and frequency distribution, Weighted Mean and Standard Deviation, One Way ANOVA and Pearson Coefficient Correlation (r).

RESULTS AND DISCUSSION

Table 1. Age Distribution of the Employees

AGE RANGE	FREQUENCY	PERCENTAGE
20 - 30	40	26
31 - 40	58	37
41 - 50	31	20
51 - 60	21	14
61 - 65	5	3
TOTAL	155	100%

Table 1 presents the age distribution of the DEPED selected sub-offices non-teaching employees. As reflected in the table, out of 155 employees were mostly in the range of 31 – 40 years old or 58% of the respondents. And the least frequency of employees was, 61 – 65 years old or 3% of the respondents fall on this age. The results show that most of the respondents belongs to the prime working age (25-54 years old)

group bracket, these are individuals that have the strongest attachment to the labor market. While the least belongs to mature working age (55-64 years old) group bracket, these are older workers are seen as giving a boost to an economy because of their greater work experience.

Table 2. Sex Distribution of the Employees

SEX	FREQUENCY	PERCENTAGE
Male	31	20
Female	124	80
TOTAL	155	100%

Table 2 presents the sex distribution of the DEPED selected sub-offices non-teaching employees. As seen in the table, out of 155 employees were mostly in the female or 80% of the respondents. And the rest were male or 20% of the respondents. It's important to note that the reasons for a higher proportion of female employees in the Philippines can be

complex and multifaceted. Additionally, having a higher proportion of female employees does not necessarily mean that an organization or industry is more diverse or equitable, as other factors such as representation in leadership positions and pay equity also play a significant role.

Table 3. Educational Attainment distribution of the Employees

Educational Attainment	Frequency	Percentage
College Graduate	104	67
Graduate Studies	51	33
TOTAL	155	100%

Table 3 presents the educational attainment of the DEPED selected sub-offices non-teaching employees. As seen in the table, out of 155 employees were mostly obtained a post-graduate degree or 33% of the respondents. And the rest were college graduate or 67% of the respondents. The demand for

higher education and the benefits it provides, such as improved job prospects, higher earning potential, and opportunities for career advancement, are likely to be key drivers of the high proportion of college graduates and individuals in graduate studies in the Philippines.



Table 4. Years of Service Distribution of the Employees

Years Of Service	Frequency	Percentage
1 – 5 years	81	52
6 – 10 years	22	14
11 – 15 years	23	15
16 – 20 years	26	17
21 years & above	3	2
TOTAL	155	100%

Table 4 presents the length of service of DEPED selected sub-offices non-teaching employees. As seen in the table, out of 155 employees were mostly 1-5 years in service or 52% of the respondents. And the least were 21 years and above in service or 2% of the respondents. DepEd may be expanding its operations or opening new schools, which would require the

hiring of new staff. This could also result in a higher proportion of new hires than employees with more years in service. Having a higher proportion of new hires does not necessarily mean that an organization is more efficient or effective, as the retention and development of experienced employees can also contribute to organizational success.

Table 5. Rank/Position Distribution of the Employees

Rank/Position	Frequency	Percentage
Clerks	14	9
Administrative Assistant	43	28
Administrative Officer	65	42
Head Teacher	17	11
School Head/Principal	11	7
Registrar	5	3
TOTAL	155	100%

Table 5 presents the rank or position of DEPED selected sub-offices non-teaching employees. As seen in the table, out of 155 employees were mostly administrative officers or 42% of the respondents. And the least were registrars or 5% of the respondents. DepEd may have a hierarchical organizational structure that requires administrative officers to

manage and oversee various administrative functions such as finance, human resources, and procurement. That is why higher proportion of administrative officers among non-teaching personnel are the respondents of the study.

Table 6. Income Distribution of the Employees

Monthly Income	Frequency	Percentage
Php 10,000- Php 20, 000	37	24
Php 21,000- Php 30, 000	78	50
Php 31,000- Php 40, 000	28	18
Php 41,000- Php 50, 000	7	5
Php 51,000 above	5	3
TOTAL	155	100%

Table 6 presents the monthly income of DEPED selected sub-offices non-teaching employees. As seen in the table, out of 155 employees were mostly obtain a monthly income of Php 21,000- Php 30, 000 or 50% of the respondents. And the least were Php 51,000 above or 3% of the respondents. It's important to note that the salary range of non-teaching

personnel in DepEd can vary widely depending on the specific position, location, and other factors. Additionally, there may be disparities in salary between different types of non-teaching personnel or between non-teaching and teaching personnel, depending on the organization's budget and staffing needs.

Table 7. Rating of Individual Work Characteristics of the respondents in terms of Quality.

Statement	Mean	SD	Verbal Interpretation
1. I substantially do my work and open to feedbacks.	4.70	0.50	Very High
2. I use to maintain high standard of work.	4.52	0.60	Very High
3. I act professionally around everyone.	4.61	0.56	Very High
4. I am very passionate about my work.	4.58	0.58	Very High
5. I am motivated by work-related tasks.	4.62	0.57	Very High
OVERALL TOTAL	4.61	0.04	Very High

Table 7 shows that the rating of individual work characteristics of non-teaching personnel in terms of quality.

The results show that the employees were open and receptive to feedbacks (M= 4.70, SD= 0.50). Meanwhile, the employees



who use to maintain high standard of work ($M=4.52$, $SD= 0.60$) got the lowest mean score. The overall score 4.61 ($SD= 0.04$) indicates that the rating of individual work characteristics of non-teaching employees in terms of quality were interpreted as *Very High*. Striving for a high standard of work can help employees develop new skills, knowledge, and experiences that can benefit their personal and career growth. This can lead to increased job satisfaction, motivation, and confidence, as well

as career advancement opportunities. A study published in the International Journal of Business and Social Science found that setting high standards of work can lead to increased productivity and improved organizational performance. The study found that employees who were given clear performance expectations and feedback were more likely to meet or exceed their goals, leading to improved outcomes for the organization.

Table 8. Rating of Individual Work Characteristics of the respondents in terms of Efficiency.

Statement	Mean	SD	Verbal Interpretation
1. I become more productive and inspired in my working environment.	4.50	0.62	Very High
2. I can produce outputs needed during the day.	4.53	0.76	Very High
3. I am motivated to produce more outputs in my workplace.	4.55	0.62	Very High
4. I can help the organization in reaching goals.	4.61	0.62	Very High
5. I know how to prioritize work.	4.63	0.52	Very High
OVERALLTOTAL	4.56	0.08	Very High

Table 8 shows that the rating of individual work characteristics of non-teaching personnel in terms of efficiency. Results shows that the employees know how to prioritize their work ($M=4.63$, $SD= 0.52$). Meanwhile, the employees who become more productive and inspired in their working environment ($M= 4.50$, $SD= 0.62$) got the lowest mean score. The overall score 4.56 ($SD= 0.08$) indicates that the rating of individual work characteristics of non-teaching employees in terms of efficiency were interpreted as *Very High*. When

employees are productive and inspired, they are more likely to take ownership of their work and seek out opportunities for personal and professional growth. Overall, having employees who are productive and inspired in their working environment can lead to a range of positive outcomes for both the employee and the organization. It can result in improved performance, engagement, workplace culture, and personal and professional growth, which can ultimately benefit the bottom line.

Table 9. Rating of Individual Work Characteristics of the respondents in terms of Timeliness

Statement	Mean	SD	Verbal Interpretation
1. I could manage to submit reports on time.	4.52	0.66	Very High
2. I always meet the given deadlines.	4.52	0.63	Very High
3. I always have spare time helping colleagues after doing my tasks.	4.42	0.69	Very High
4. I can handle effectively my work even in pressured time.	4.48	0.66	Very High
5. I use to perform well to mobilize collective intelligence for effective team work.	4.54	0.66	Very High
OVERALL TOTAL	4.50	0.04	Very High

Table 9 shows that the rating of individual work characteristics of non-teaching personnel in terms of timeliness. The employees use to perform well to mobilize collective intelligence for effective team work ($M=4.54$, $SD= 0.66$). Meanwhile, the employees that can handle their work effectively even in pressured time ($M=4.48$, $SD= 0.66$) got the lowest mean score. The overall score 4.50 ($SD= 0.04$) indicates that the rating of individual work characteristics of non-

teaching employees in terms of timeliness were interpreted as *Very High*. Employees who are unable to handle their work effectively even in pressured time can negatively impact the organization's bottom line, as well as their own well-being and job satisfaction. It is important for employees to have the skills and resources necessary to manage their workload under pressure in order to ensure that deadlines are met, quality work is produced, and stress and burnout are minimized.

Table 10. Rating of Individual Work Characteristics of the respondents in terms of Accuracy

Statement	Mean	SD	Verbal Interpretation
1. I finish needed reports quickly and efficiently.	4.46	0.69	Very High
2. I keep communication with the head and my clients to gather ideas.	4.51	0.59	Very High
3. I have competence to answer any questions regarding my work.	4.42	0.58	Very High
4. I attend to resolve issues appropriately one at a time.	4.43	0.61	Very High
5. I assure that all needed information and documents are understandable and relevant.	4.58	0.53	Very High
OVERALL TOTAL	4.48	0.06	Very High



Table 10 shows that the rating of individual work characteristics of non-teaching personnel in terms of accuracy. The employees assure that all needed information and documents are understandable and relevant (M=4.58, SD= 0.53). Meanwhile, some employees don't have competence to answer any questions regarding their work (M=4.42, SD= 0.58) got the lowest mean score. The overall score 4.48 (SD= 0.06) indicates that the rating of individual work characteristics of non-teaching employees in terms of accuracy were interpreted as *Very High*. Employees may not have received adequate training to understand the details of their work or to answer

questions about it. This can result in a lack of confidence and competence when asked about their job responsibilities. It is important for employees to have the competence to answer questions about their work in order to ensure that they can perform their job responsibilities effectively. However, there may be valid reasons why some employees lack this competence, such as a lack of training, limited experience, job complexity, or poor communication skills. In such cases, it is important for organizations to provide additional support, training, or resources to help employees build the competence they need to succeed in their roles.

Table 11. Rating of Individual Work Characteristics of the respondents in terms of Interpersonal adaptability

Statement	Mean	SD	Verbal Interpretation
1. I am open to change and innovation in the workplace.	4.65	0.59	Very High
2. I use to handle conflict and stress in a calm, collected manner.	4.44	0.63	Very High
3. I keep good communication with others effectively.	4.57	0.58	Very High
4. I motivate others to reach our own goals.	4.55	0.58	Very High
5. I can easily interact with my colleagues.	4.54	0.65	Very High
OVERALL TOTAL	4.55	0.03	Very High

Table 11 shows that the rating of individual work characteristics of non-teaching personnel in terms of interpersonal adaptability. The employees are open to change and innovation in the workplace (M=4.65, SD= 0.59). Meanwhile, the employees use to handle conflict and stress in a calm, collected manner (M= 4.44, SD= 0.63) got the lowest mean score. The overall score 4.55 (SD= 0.03) indicates that the rating of individual work characteristics of non-teaching employees in terms of interpersonal adaptability were interpreted as *Very High*. Employees may need training on conflict resolution or stress management, leaving them unsure

of how to handle challenging situations in the workplace. Employees who are unable to handle conflict and stress in a calm, collected manner can negatively impact workplace culture and productivity. It is important for organizations to provide training and resources to help employees build the skills and resilience they need to handle challenging situations effectively. This may involve providing conflict resolution training, stress management resources, or creating a supportive work environment that encourages open communication and collaboration.

Table 12. Degree of Employees Work Performance in terms of Task Performance

Statement	Mean	SD	Verbal Interpretation
1. I use to complete my assignments on time.	4.50	0.61	Very High
2. I use to maintain high standard of work.	4.52	0.54	Very High
3. I know I can handle multiple assignments for achieving organizational goals.	4.34	0.61	Very High
4. I am very passionate about my work.	4.54	0.63	Very High
5. My colleagues believe I am a high performer in my organization	4.23	0.71	Very High
6. I am capable of handling my assignments without much supervision.	4.54	0.54	Very High
7. I was able to separate main issues from side issues at work.	4.46	0.58	Very High
8. I know how to set the right priorities.	4.59	0.53	Very High
9. I was able to perform my work well with minimal time and effort.	4.37	0.65	Very High
10. Collaboration with others was very productive.	4.52	0.58	Very High
OVERALL TOTAL	4.46	0.06	Very High

Table 12 shows the degree of non-teaching personnel work performance in terms of task performance. The employees know how to set the right priorities (M=4.59, SD= 0.53). Meanwhile, some employees think that their colleagues perceive them as a high performer in their organization (M= 4.23, SD= 0.71) got the lowest mean score. The overall score 4.46 (SD= 0.06) indicates that the degree of non-teaching personnel work performance in terms of task performance were interpreted as *Very High*. An employee's perceived status as a

high performer in their organization can be based on various factors, including feedback from colleagues, recognition and awards, high-quality work output, leadership and team management skills, and subject matter expertise. If an employee believes that their colleagues perceive them as a high performer, this can lead to increased confidence and motivation, as well as potential career opportunities and advancement within the organization.



Table 13. Degree of Employees Work Performance in terms of Adaptive Performance

Statement	Mean	SD	Verbal Interpretation
1. I am very comfortable with job flexibility.	4.46	0.54	Very High
2. I could manage change in my job very well whenever the situation demands.	4.32	0.73	Very High
3. I always believe that mutual understanding can lead to a viable solution in organization.	4.60	0.57	Very High
4. I use to lose my temper when faced with criticism from my team members.	2.80	1.41	Moderate
5. I can handle effectively my work team in the face of change.	4.27	0.71	Very High
6. I use to perform well to mobilize collective intelligence for effective team work.	4.31	0.66	Very High
7. I use to cope well with organizational changes from time to time.	4.33	0.67	Very High
OVERALL TOTAL	4.16	0.30	Very High

Table 13 shows the degree of non-teaching personnel work performance in terms of adaptive performance. The employees always believe that mutual understanding can lead to a viable solution in organization (M= 4.60, SD= 0.57). Meanwhile, some employees use to lose their temper when faced with criticism from their team members (M= 2.80, SD= 1.41, *Moderate*). The overall score 4.16 (SD= 0.30) indicates that the degree of non-teaching personnel work performance in terms of adaptive performance were interpreted as *Very High*. Some employees may lack effective communication skills, making it difficult for them to receive and respond to criticism

in a calm, professional manner. They may not know how to handle criticism constructively or may feel that they are being attacked. Employees who lose their temper in response to criticism can negatively impact team dynamics and productivity. It is important for organizations to provide employees with the necessary training and support to help them develop effective communication skills, handle criticism constructively, and manage their emotions in a professional manner. This may involve providing conflict resolution training, coaching, or creating a supportive work environment that encourages open communication and collaboration.

Table 14. Degree of Employees Work Performance in terms of Contextual Performance

Statement	Mean	SD	Verbal Interpretation
1. I love to handle extra responsibilities.	3.90	0.83	High
2. I derive lot of satisfaction nurturing others in organization.	4.27	0.71	Very High
3. I use to share knowledge and ideas among my team members.	4.52	0.58	Very High
4. I actively participate in group discussions and work meetings.	4.31	0.67	Very High
5. I used to extend help to my co-workers when asked or needed.	4.61	0.53	Very High
6. I use to maintain good coordination among fellow workers.	4.55	0.58	Very High
7. I use to praise my co-workers for their good work.	4.55	0.58	Very High
8. I extend my sympathy and empathy to my co-workers when they are in trouble.	4.60	0.58	Very High
9. I use to guide new colleagues beyond my job purview.	4.48	0.57	Very High
10. I communicate effectively with my colleagues for problem solving and decision making.	4.45	0.63	Very High
11. I grasp opportunities when they presented themselves.	4.41	0.65	Very High
12. I know how to solve difficult situations and setbacks quickly.	4.41	0.68	Very High
OVERALL TOTAL	4.46	0.06	Very High

Table 14 shows the degree of non-teaching personnel work performance in terms of contextual performance. The employees used to extend help to their co-workers when asked or needed (M= 4.60, SD= 0.53). Meanwhile, some employees don't like to handle extra responsibilities (M=3.90, SD= 0.83, *High*) got lowest mean score. Maybe some employees may already have a heavy workload that they are struggling to manage, which can make it difficult for them to take on additional responsibilities without sacrificing the quality of their work or impacting their personal life. The overall score 4.46 (SD= 0.06) indicates that the degree of non-teaching personnel work performance in terms of contextual performance were interpreted as *Very High*. Employees who are unwilling or unable to take on extra

responsibilities can negatively impact organizational goals and productivity. It is important for organizations to identify the reasons why employees may be reluctant to take on additional responsibilities and address these issues to ensure that employees are able to perform at their best. This may involve providing additional training, support, or incentives to encourage employees to take on extra responsibilities, or reassessing workloads and responsibilities to ensure that employees are not overwhelmed.



Table 15. Degree of Employees Work Performance in terms of Counter Productive Work Behavior Performance

Statement	Mean	SD	Verbal Interpretation
1. I complained about minor work-related issues at work.	1.34	0.47	Very Low
2. I made problems at work bigger than they were.	1.21	0.41	Very Low
3. I focused on the negative aspects of situation at work instead of the positive aspects.	1.17	0.38	Very Low
4. I talked to colleagues about the negative aspects of my work.	1.46	0.50	Very Low
5. I talked to people outside the organization about the negative aspects of my work.	1.23	0.42	Very Low
6. I did less than was expected of me.	1.21	0.41	Very Low
7. I managed to get off from a work task easily	3.21	0.57	Very Low
8. I sometimes did nothing, while I should have been working.	1.19	0.45	Very Low
OVERALL TOTAL	1.50	0.06	Very Low

Table 15 shows the degree of non-teaching personnel work performance in terms of counterproductive work performance. The employees can manage to get off from a work task easily (M=3.21, SD= 0.57). Meanwhile, employees that focused on the negative aspects of situation at work instead of the positive aspects (M=1.17, SD= 0.38) got the lowest mean score. The overall score 1.50 (SD= 0.06) indicates that the degree of non-teaching personnel work performance in terms of counterproductive work behavior were interpreted as *Very Low*. Understanding the underlying causes of negativity bias can help

organizations and managers develop strategies to help employees shift their focus towards the positive aspects of their work and improve their overall job satisfaction and performance. In organizations that prioritize positivity and optimism, employees may be more likely to focus on the positive aspects of their work. Ultimately, employees should strive to fulfill their responsibilities and commitments to the best of their abilities, and seek support and guidance when needed.

Table 16. Difference on the level of Employees Work Performance in terms of Demographic Profile

Demographic Profile	Employees Work Performance	f value	Sig.	Decision on Ho	Interpretation
Age	Task Performance	2.91	0.72	Accept	Insignificant
	Adaptive Performance				
	Contextual Performance				
	Counter Productive Behavior				
Sex	Task Performance	1.48	0.16	Accept	Insignificant
	Adaptive Performance				
	Contextual Performance				
	Counter Productive Behavior				
Educational Attainment	Task Performance	5.29	0.19	Accept	Insignificant
	Adaptive Performance				
	Contextual Performance				
	Counter Productive Behavior				
Length of Service	Task Performance	7.19	0.52	Accept	Insignificant
	Adaptive Performance				
	Contextual Performance				
	Counter Productive Behavior				
Rank/Position	Task Performance	2.49	0.22	Accept	Insignificant
	Adaptive Performance				
	Contextual Performance				
	Counter Productive Behavior				
Monthly Income	Task Performance	1.89	0.30	Accept	Insignificant
	Adaptive Performance				
	Contextual Performance				
	Counter Productive Behavior				

Table 16 presents the difference in terms of demographic profile with regards to the employees work performance was observed to have an insignificant finding. Furthermore, the p-values obtained were greater than the significance alpha 0.05. From the findings above, we can infer that at 0.05 level of significance, the null hypothesis “There is no significant difference on the level of employee work

performance when grouped according to their demographic profile” is accepted. Work performance is a complex and multifaceted construct that encompasses a wide range of behaviors and outcomes, such as productivity, job satisfaction, interpersonal communication, and teamwork. Therefore, it is possible that demographic factors may have different effects on different aspects of work performance, or that the effects of



demographic factors may be difficult to detect due to the complex interplay of various factors that influence work performance. Work performance is influenced by a wide range of individual factors, such as personality traits, cognitive abilities, motivation, and job satisfaction, which may vary widely within demographic groups. Therefore, it is possible that individual differences within demographic groups may be more important determinants of work performance than demographic factors themselves. Even if there are statistically significant

differences in work performance across different demographic groups, the effect sizes may be small or not practically significant. Therefore, it may not be meaningful or useful to group employees according to their demographic profile when assessing work performance. Ultimately, it is important for organizations to focus on promoting a culture of fairness, equal opportunities, and support for all employees, regardless of their demographic characteristics.

Table 17. Relationship between Individual Work Characteristics and the degree of the employees work performance.

Work Characteristic	Degree of Work Performance	Computed R	Strength of Correlation	p value	Analysis
Quality	Task Performance	0.626	Moderately High Positive	< .001	Significant
	Contextual	0.629	Moderately High Positive	< .001	Significant
	Adaptive Performance	0.787	Moderately High Positive	< .001	Significant
	Counter Productive Behavior	-0.310	Low Negative	< .001	Significant
Timeliness	Task Performance	0.870	High Positive	< .001	Significant
	Contextual	0.771	Moderately High Positive	< .001	Significant
	Adaptive Performance	0.851	High Positive	< .001	Significant
	Counter Productive Behavior	-0.152	Negligible	< .001	Significant
Efficiency	Task Performance	0.860	High Positive	< .001	Significant
	Contextual Performance	0.716	Moderately High Positive	< .001	Significant
	Adaptive Performance	0.848	High Positive	< .001	Significant
	Counter Productive Behavior	-0.238	Low Negative	0.003	Significant
Accuracy	Task Performance	0.914	High Positive	< .001	Significant
	Contextual Performance	0.780	Moderately High Positive	< .001	Significant
	Adaptive Performance	0.874	High Positive	< .001	Significant
	Counter Productive Behavior	-0.197	Low Negative	< .001	Significant
Interpersonal Adaptability	Task Performance	0.878	High Positive	< .001	Significant
	Contextual Performance	0.699	Moderately High Positive	< .001	Significant
	Adaptive Performance	0.872	High Positive	< .001	Significant
	Counter Productive Behavior	-0.207	Low Negative	< .001	Significant

Table 17 presents the relationship between individual work characteristics and the degree of the employees work performance. It was found that there was a correlation between these variables. Based on estimated r values from statistical test with significant relationship that ranges from low positive to high positive correlations. There is a significant result since the p-values obtained were lower than the significance alpha 0.05. From the findings above, we can infer that at 0.05 level of significance, the null hypothesis “There is no significant relationship between individual work characteristics and the degree of the employees work performance” is rejected. Thus, the alternative hypothesis should be accepted which incites that there is a significant relationship between them. Individual work characteristics can also be influenced by the work environment, such as the culture of the organization, the level of support provided by supervisors and colleagues, and the availability of resources and training. Employees who work in a positive and supportive environment are more likely to exhibit positive work characteristics and perform at a higher level than those who work in a less supportive environment. There is a significant relationship between individual work characteristics and the degree of employees' work performance. Motivation, skills and abilities, personality traits, and work environment all play a critical role in shaping individual work characteristics and influencing work performance. Organizations can leverage this knowledge to design work environments and policies that

promote positive work characteristics and maximize work performance.

CONCLUSIONS

The findings showed that most of the respondents belongs to the prime working age (25-54 years old) group bracket, these are individuals that have the strongest attachment to the labor market. Most of the respondents shows a higher proportion of female employees. The demand for higher education and the benefits it provides, such as improved job prospects, higher earning potential, and opportunities for career advancement, are likely to be key drivers of the high proportion of college graduates and individuals in graduate studies in the Philippines. DepEd may be expanding its operations or opening new schools, which would require the hiring of new staff. This could also result in a higher proportion of new hires than employees with more years in service. DepEd may have a hierarchical organizational structure that requires administrative officers to manage and oversee various administrative functions such as finance, human resources, and procurement. That is why higher proportion of administrative officers among non-teaching personnel are the respondents of the study.

The rating of individual work characteristics of non-teaching employees in terms of quality were interpreted as Very High, but some employees having difficulties in maintaining high standard of work. The rating of individual work



characteristics of non-teaching employees in terms of efficiency were interpreted as Very High, but some employees are having difficulties on being more productive and inspired of their working environment. The rating of individual work characteristics of non-teaching employees in terms of timeliness were interpreted as Very High, but some employees can't handle their work effectively in pressured time. The rating of individual work characteristics of non-teaching employees in terms of accuracy were interpreted as Very High but some employees don't have competence to answer any questions regarding their work. The rating of individual work characteristics of non-teaching employees in terms of interpersonal adaptability were interpreted as Very High, but some employees are not use to handle conflict and stress in a calm, collected manner.

The degree of non-teaching personnel work performance in terms of task performance were interpreted as Very High, but some employees think that their colleagues perceive them as a high performer in their organization. The degree of non-teaching personnel work performance in terms of adaptive performance were interpreted as Very High, but some employees use to lose their temper when faced with criticism from their team members. The degree of non-teaching personnel work performance in terms of contextual performance were interpreted as Very High but some employees don't like to handle extra responsibilities. The degree of non-teaching personnel work performance in terms of counterproductive work behavior were interpreted as Very Low, but some employees focused on the negative aspects of situation at work instead of the positive aspects.

There is no significant difference between profile and the degree of the employees work performance. Thus, null hypothesis is accepted. There is significant relationship between individual work characteristics and the degree of the employees work performance. Thus, null hypothesis is rejected.

RECOMMENDATIONS

In light of conclusions drawn from the findings, the recommendations of the study were intervention to Institutional trainings with regards to professional growth development of non-teaching personnel was needed to improve individual work characteristics as directly showed in this study that it really affects individual work performance and to solve the areas that needed to address for continuous productivity and positive development of DepEd employees' services;

Future researchers may suggest other institutional trainings and activities concerning career build up for continuous professional development of non-teaching personnel in Department of Education; and

Department of Education may adapt suggested trainings on the foreseen weakness of non-teaching personnel as reflected in this study for example on why some employees can't handle extra responsibilities and why some employees use to lose their temper when faced with criticism from their team members. These are just examples of situations that may need to be addressed immediately.

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FIELD EVALUATION OF FOUR CITRUS SPECIES CUTTINGS THRU BALANCE FERTILIZATION PROGRAM

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ABSTRACT

This study was conducted at the Southern Philippines Agri-Business and Marine and Aquatic School of Technology (SPAMAST), Buhangin Campus, Malita Davao Occidental – Philippines.

The study was carried out in a Randomized Complete Block Design (RCBD) in factorial arrangement Factor A: Four Citrus species while Factor B: Organic & Inorganic Fertilizers.

The study aimed to evaluate the effects of different citrus species as applied with organic and inorganic fertilizer thru balance fertilization program in terms of : plant height, number of branches , number of shoots, stem diameter, and length of shoots and length of branches.

Results revealed that among the five parameters namely : plant height, number of leaves, number of shoots, stem diameter, and length of shoots obtained significant difference in Factor A (Citrus species) , while there was no significant effect on Factor B (Fertilizer) and no significant interaction of both Factor A and B respectively.

On the other hand, length of branches showed significant results in Factor A, B and so with its interaction of both Factor A and B.

INTRODUCTION

Citrus is one of the most popular fruit commodities in the world because of its refreshing flavor and nutritional values. Citrus species are small to medium-size shrubs or trees that are cultivated throughout the tropics and subtropics. Citrus is adaptable to many subtropical and tropical environments and soils and has traditionally been cultivated in orchard together with other important species such as coconut, breadfruit, papaya, and numerous others. One could say citrus is an essential component of any Pacific island (and subtropical or tropical) orchard. Citrus is primarily valued for the fruit, which is either eaten alone (sweet orange, tangerine, grapefruit, etc.) as fresh fruit, processed into juice, or added to dishes and beverages (lemon, lime, etc.). All species have traditional medicinal value. Citrus has many other uses including animal fodder and craft and fuel wood. Although commercial production for export markets has not been significant in Oceania, there is potential for small farmers to supply local markets with fresh fruit and unique varieties.

Fertility of the soil is regarded as a prerequisite for citrus cultivation. The usage of inorganic fertilizers over lengthy periods of time causes the physical and chemical properties of the soil to deteriorate (Ge *et al.*, 2018). The demand for food and agricultural commodities has risen dramatically, outstripping available supply (FAO, 2017). Increased productivity per unit area of cultivated land has the greatest potential to close this disparity. This may be accomplished by using inorganic fertilizer to improve soil fertility (Abobatta, 2020). Chemical fertilizers can create a slew of environmental issues, including soil nutrient loss, soil deterioration, and a reduction in helpful microbes (Dincaet *et al.*, 2022).

For all crops, organic fertilizer such as vermicompost is an important part of nutrient management (Lim *et al.*, 2015). It improves soil health, increases agricultural yields, improves fruit quality, reduces expenses, and conserves natural resources (Hazarika and Aheibam, 2019). According to Pathak *et al.*, (2018), combining organic and inorganic fertilizers can result in a novel fertilizing method that improves soil characteristics while also sustaining horticulture crop yield.

Sexual propagation has a number of disadvantages, including decreased seed size, poor germination percentages, and high biotic stress sensitivity (Yadav *et al.*, 2011). Clonal propagation by stem cuttings might be a viable option for propagation (Patel, 2015).

Therefore, the study was conducted to determine the effect of nutrient management through organic and inorganic fertilizers on growth of citrus species cuttings. To fill the gap of the proper combination rate of organic and inorganic fertilizer on growth of citrus species cuttings may can maximize the growth and production as well to promote sustainable environment.

OBJECTIVES

The study aimed to determine the growth performance of citrus species cuttings as applied with organic and inorganic fertilizer.

Specifically, it sought to answer the following questions:

1. Is there a significant difference on the plant height of citrus species cuttings as applied with organic and inorganic fertilizer?
2. Is there a significant difference on the stem diameter of citrus species cuttings as applied with organic and inorganic fertilizer?
3. Is there a significant difference on the length of branches citrus species cuttings as applied with organic and inorganic fertilizer?
4. Is there a significant difference on the number of branches citrus species cuttings as applied with organic and inorganic fertilizer?
5. Is there a significant difference on the length of citrus shoots species cuttings as applied with organic and inorganic fertilizer?
6. Is there a significant difference on the number of shoots of citrus species cuttings as applied with organic and inorganic fertilizer?

Conceptual Framework of the Study

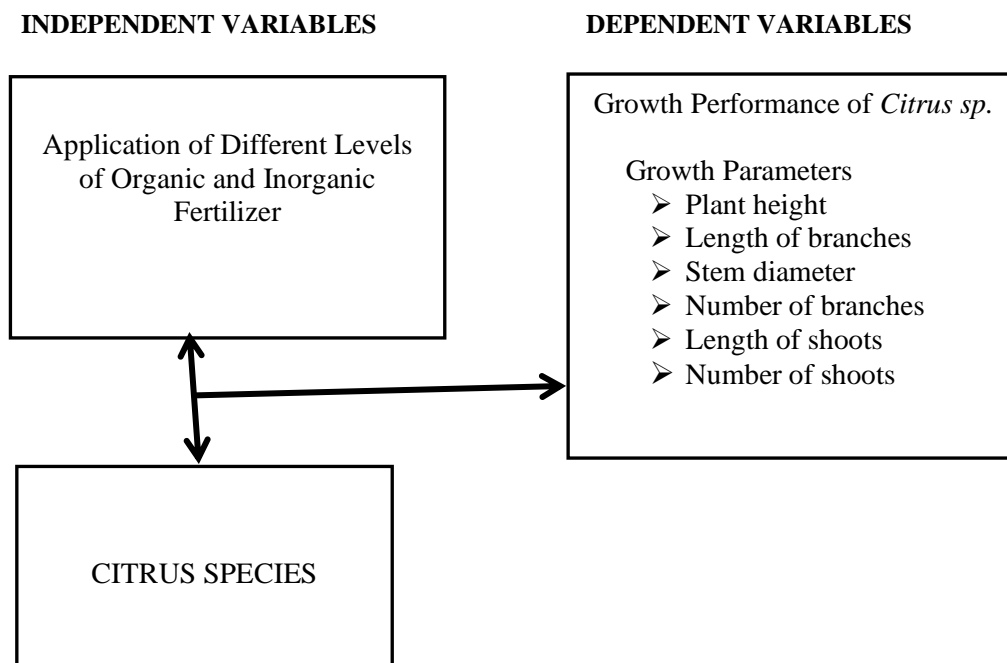


Fig. 1. Conceptual paradigm showing the relationship of independent and dependent variables

METHODOLOGY

Experimental Design and Treatments

The study was carried out using a Double Factor Randomized Complete Block Design (RCBD) with four treatments to be replicated three times. five sample cuttings were used per treatments. Citrus species stem cuttings seedlings were served as Factor A, while application of organic and inorganic fertilizers serve as Factor B. The following treatments were used:

Factor A(Species)

V₁ – Pummelo

V₂ – Dalandan

V₃ – Calamandarin

V₄ - Calamansi

Factor B(Fertilizer)

T₁ – 250 grams of Inorganic Fertilizer/hill

T₂ – 2000 grams of Organic Fertilizer/hill

T₃ – 1000 grams of Organic and 125 grams of Inorganic Fertilizer/hill

T₄ – 2000 grams of Organic and 250 grams of Inorganic Fertilizer/hill



Experimental Field Layout

The study was conducted in a 2,450 m² area with a dimension of 35 x 70 meters. The area was divided into four (4) blocks with 5 x 20 meters per hills and alley of 10 meters, between replication and 5 meters between treatments was provided to facilitate farm management and gathering of data.

Sampling Materials and Randomization

A total of sixty (60) samples of different citrus species stem cuttings. There were 5 sample per replication with a total of 15 samples with tag for each treatment. Draw-lot technique was employed to identify the assigned treatment on its respective plots. Lay-outing and putting of placards for every treatment in each replication was established for proper identification.

Cultural Management and Practices

Area Preparation

This was a continuation research from previous study, which sixty (60) citrus seedling per species planted. The area was thoroughly cleaned by slashing to eliminate grasses and obstacles.

Fertilizer Application

Application of organic and inorganic fertilizer were applied separately. This was based on the fertilizer application recommendation for citrus plants. Organic fertilizer was applied at the rate specified on each treatment and replication. Second, application of inorganic fertilizer was done 1 week after application of organic fertilizer. Application of fertilizer was done only once using side dress approach was used to apply both fertilizers.

Weeding and Cultivation

Weeding was done as soon as weeds emerge while still young on the ground to avoid competition. Shallow manual cultivation was also done around the base after weeding to promote aeration and water absorption of the soil.

Pest and Disease Control

To prevent from the occurrence of pests and diseases monitoring was done. If pest was recurred, an appropriate control measures may be employed. Spraying of pesticide to the plants following the manufacturer's guide.

Data Gathered

Plant height

These data were taken by measuring the plant from the base to the last open leaf using a tape measure from 15 sample tagged in every treatment. This was done within 8 months after application.

Stem Diameter

Stem diameter was measured using digital caliper (mm); the measurement was made 3 cm above the ground in the own-rooted trees, and 10 cm above the ground (trunk diameter) from 15 sample tagged. This was done within 8 months after application.

Length of branches

This was taken from the primary branch of the citrus species cuttings measuring from the axil to twig of the cuttings using tape measure (cm). This was done within 8 months after application.

Number of branches

This was taken from by counting the number of branches of pomelo cuttings. This was done within 8 months after application.

Length of shoots

This was taken by measuring the length of shoots from the axil to twig using tape measure. This was done for 8 months after application.

Number of shoots

This was taken by counting of shoots of citrus species cuttings. This was done within 8 months after application.

Statistical Analysis

The various data to be collected was subjected to appropriate statistical data analysis. Analysis of Variance (ANOVA) was used to test or determine the significance among treatments at 0.5 % level.



RESULTS AND DISCUSSION

Plant Height

Table 1 and Figure 1 revealed that on 8th month's observation, plant height of different citrus species increases over time. The data show that there were no interaction effects between different citrus species and application of organic and inorganic fertilizer on the plant height. The result revealed that there were highly significant among citrus on the plant height.

The combine application of both organic and inorganic fertilizers could increase the height of citrus species. Different citrus species was height significant to each other

Fertilizer provide and supply the nutrient of pomelo necessary for the growth and development. Combination of fertilizer with maximum amount showed the highest plant height compared to the application of organic and inorganic alone. This indicates the easy availability of nutrients from inorganic fertilizers and supplemented with organic fertilizer application, improves pomelo growth by supplying plant nutrients, including micronutrients, as well as improving the soil's physical, chemical, and biological properties, thereby providing a better environment for root development by improving the soil structure (Dejene and Lemlem, 2012). As a component of chlorophyll, nitrogen from fertilizer promotes cell proliferation and expansion in the apical meristem. The apical meristem's activity causes plant growth, which leads to an increase in plant height (Purbajanti *et al.*, 2019). This result was agreed by Getachew *et al.*, (2016) found that the integrated application of organic with N fertilizer rate significantly improved productive plant height.

Furthermore, vermicompost stimulates to influence the microbial activity of soil, increases the availability of oxygen, maintains normal soil temperature, increases soil porosity and infiltration of water, improves nutrient content and increases growth, yield and quality of the plant (Arora *et al.*, 2011). However, result showed that the application of organic fertilizer obtained the lowest height of pomelo, in fact, that organic Fertilizer alone might not meet the plant's requirements due to the relatively low nutrient contents and the slow release of plant nutrients (Liang *et al.*, 2003). In addition, Kooij, (2020) reported that organic fertilizers must often be converted by soil organisms before becoming accessible to the plant as nourishment. A large amount of organic fertilizer should also be applied to provide the nutrients necessary by pomelo for its growth and development (Kooij, 2020).

Table 1. Plant height (cm) of Citrus Cuttings-derived Seedlings (CdS) as affected by the application of organic and inorganic fertilizer.

organic and inorganic fertilizer	Citrus species				B-Mean
	POMELO	DALANDAN	CALAMANDA RIN	CALAMANS I	
Organic Fertilizer (RR)	294.13	256.6	145.87	131.67	207.07
Inorganic Fertilizer (RR)	289.77	209.13	140.87	103.47	185.81
50% RR (Organic and Inorganic fertilizer)	298.07	248.07	145.2	129.13	205.12
100% RR (Organic and Inorganic Fertilizer)	300.67	236.4	157.47	152.27	211.70
^{1/} A- Mean	295.66 ^a	237.55 ^b	147.3525 ^c	129.135 ^d	

^{1/}- means with the same letter superscript are not significantly different at 1% level of significant

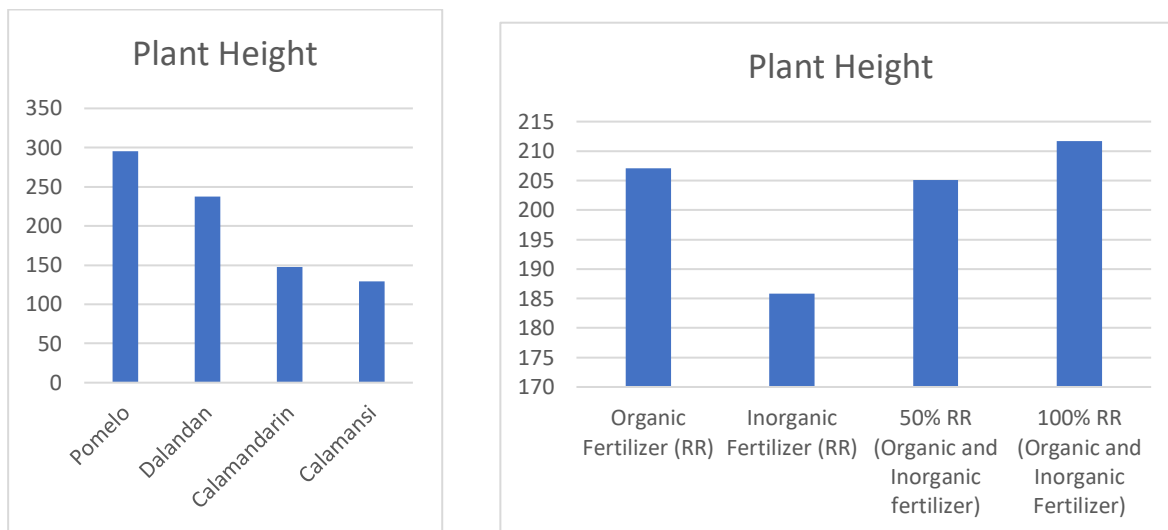


Figure 2. Plant height

Number of Branches

The data show in Table 2 that no significant interaction effects between different citrus species and application of organic and inorganic fertilizer on the number of branches. The result revealed that different citrus species affect the number of branches. Dalandan was height significant to three citrus species. but pomelo, calamandarin and calamansi are comparable. After 8 months of application of treatment, number of branches ranged from 17.03 to 21.75 respectively.

Application of organic and inorganic fertilizer has showed effect for sustainability in soil and may positively affect length of branch (Choudhary *et al.*, 2021). Tolessa and Friesen (2001) reported that growth and yield were significantly increased by organic fertilizer application enriched with chemical fertilizers. Combined application of organic and inorganic sources of NPK reduces the nutrient losses, improves fertilizer use efficiency and thereby increased soil nutrient availability for the plants (Prativa and Bhattarai, 2011).

Further, organic fertilizers obtained lowest length of branch this was due to insufficient supply of nutrient. Organic fertilizer only release nutrients when the soil is warm and moist, which usually corresponds to when your plants are most in need. However, because organic matter is broken down by soil organisms, nutrients are released more slowly than with inorganic fertilizers (Miller, 2018). According to Agegnehu *et al.*, (2014) sole application of organic fertilizer is constrained by access to sufficient organic inputs, low nutrient content, high labor demand for preparation and transporting. Thus, the integration of organic and inorganic sources may improve and sustain crop yields without degrading soil fertility status.

Table 2. No. of branches of Citrus sp. Cuttings-derived Seedlings (CdS) as affected by the of organic and inorganic fertilizer.

Levels of organic and inorganic fertilizer	Citrus species				B-Mean
	POMELO	DALANDAN	CALAMANDARIN	CALAMANSI	
Organic Fertilizer (RR)	12.17	35.20	13.93	13.07	18.59
Inorganic Fertilizer (RR)	10.50	30.33	13.20	14.07	17.03
50% RR (Organic and Inorganic fertilizer)	13.97	31.27	13.53	16.20	18.74
100% RR (Organic and Inorganic Fertilizer)	18.40	32.27	21.13	15.20	21.75
^{1/} A- Mean	13.76 ^b	32.27 ^a	15.45 ^b	14.64 ^b	

^{1/}- means with the same letter superscript are not significantly different at 1% level of significant

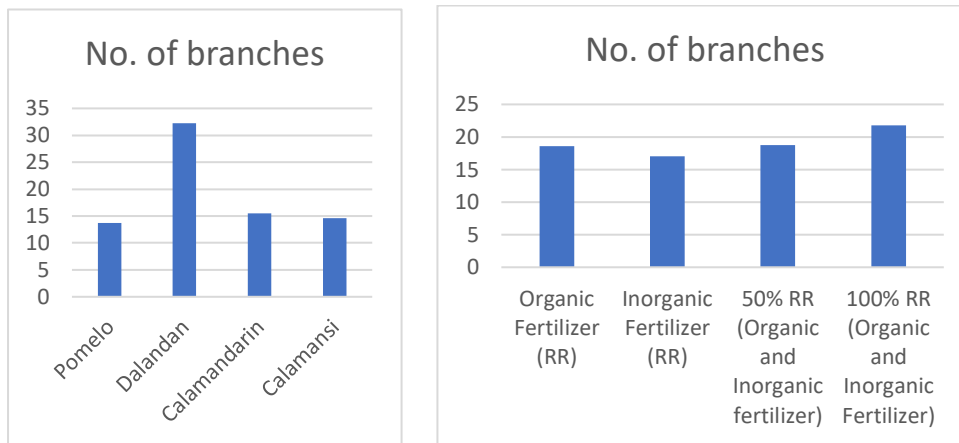


Figure 2. Number of branches

Number of Shoots

There was no significant effect between different citrus species cutting and application of organic and inorganic fertilizer on number of shoots developed per seedlings shown in (Table 3, Figure 3). Analysis reveal that different citrus species have significant different. Dalandan and calamandarin was significant to pomelo and calamansi but pomelo and calamansi were comparable. Regardless of the application of organic and inorganic fertilizer, the number of shoots developed per cutting mean ranged from 60.54 to 67.69 shoots. Result showed that Calamansi produced the greatest number of shoots with a mean of 67.69 shoots and the least was found in Calamandarin with a mean of 60.54 shoots.

The maximum combination of organic and inorganic fertilizer obtained the highest number of shoots this may due to the organic fertilizers help to improve the soil condition and inorganic fertilizers assure quick availability of essential nutrients, the combination of two proved better than single use of the each. Integrated use of organic and inorganic fertilizers may be a way to ensure sustainable agriculture and sustainable environment. Channaveerswami (2005) found better growth by using combination of organic and inorganic fertilizers than only inorganic fertilizers. Gonzalez et al. (2001), who reported that organic manure and chemical fertilizer which was supplied as essential nutrition at initial establishment stage of growth recorded the best results of the measured variables such as number of shoots of the plant.

Table 3. No. of Shoots of Citrus sp. Cuttings-derived Seedlings (CdS) as affected by the of organic and inorganic fertilizer.

Levels of organic and inorganic fertilizer	Citrus species				B-Mean ^{ns}
	POMELO	DALANDAN	CALAMANDARIN	CALAMANSI	
Organic Fertilizer (RR)	29.90	125.33	73.27	37.93	66.61
Inorganic Fertilizer (RR)	25.23	107.73	73.07	42.67	62.18
50% RR (Organic and Inorganic fertilizer)	29.37	109.67	56.20	46.93	60.54
100% RR (Organic and Inorganic Fertilizer)	40.03	110.20	81.93	38.60	67.69
^{1/} A- Mean	31.13 ^c	113.23 ^a	71.12 ^b	41.53 ^c	

^{1/}- means with the same letter superscript are not significantly different at 1% level of significant

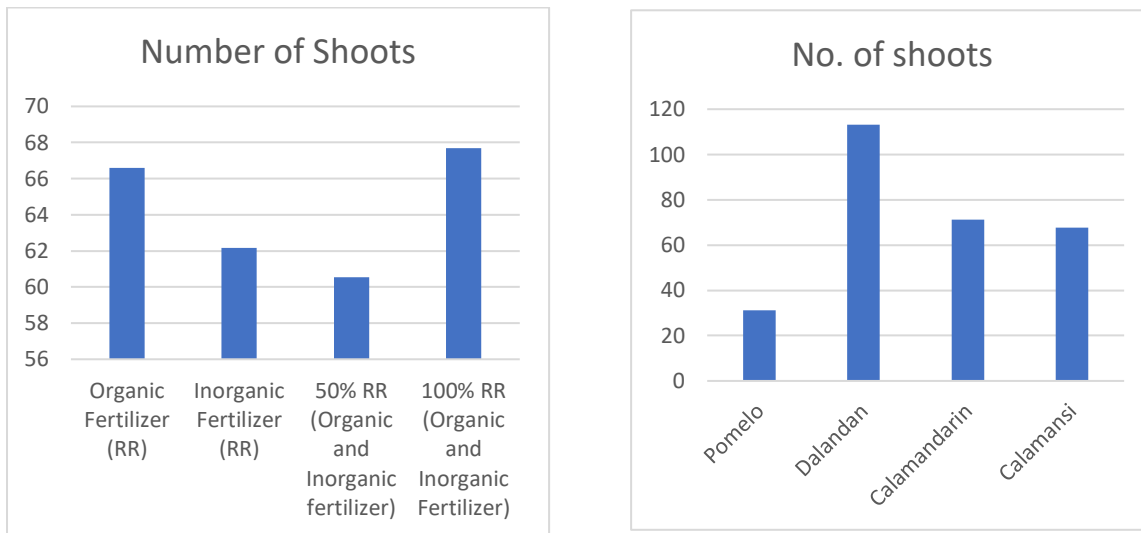


Figure 3. Number of Shoots

Stem Diameter

Table and Plate 2 statistically showed that there was highly significant in terms of stem diameter as applied with organic and inorganic fertilizer. The stem diameter increased at eight months of monitoring. The combination of fertilizer supplies the nutrient need to boost the development of stem diameter of pomelo. However, those plants grown organically and inorganically can be compared to pomelo applied with organic and inorganic alone.

According to Yang *et al.*, (2020), integrating organic and inorganic fertilizers significantly enhances soil organic matter and total nitrogen content, as well as improving the soil microenvironment that promote the growth of citrus resulting to increase of stem diameter. Qiu *et al.*, (2021) reported combining organic and inorganic fertilizer application stimulated root growth, enhanced the rate of nutrient distribution in citrus, and improved the exterior and internal quality of oranges. Stem diameter responds positively to the combined application of organic and inorganic fertilizers due to the presence of macro and micro nutrients in the organic matter (Muhammad *et al.*, 2003).

On the other hand, organic fertilizers resulted in the smallest stem diameter. This is due to the fact that organic fertilizers are frequently insoluble, and nutrients are only available when microbes convert them to soluble form (Phibunwattanawong and Riddech, 2019). In comparison to inorganic fertilizers, organic sources deliver nutrients more gradually, decreasing the boom-and-bust pattern of plant growth development (Siavoshi *et al.*, 2011).

Table 4. Stem diameter of Citrus sp. Cuttings-derived Seedlings (CdS) as affected by the of organic and inorganic fertilizer.

Levels of organic and inorganic fertilizer	CdS				B-Mean
	POMELO	DALANDA N	CALAMANDARI N	CALAMANS I	
Organic Fertilizer (RR)	51.24	46.78	29.00	17.62	36.16
Inorganic Fertilizer (RR)	50.15	28.44	23.48	16.44	29.63
50% RR (Organic and Inorganic fertilizer)	55.28	32.55	21.85	19.81	32.37
100% RR (Organic and Inorganic Fertilizer)	56.56	35.26	25.58	19.94	34.34
A- Mean	53.31 ^a	35.76 ^b	24.98 ^c	18.45 ^d	

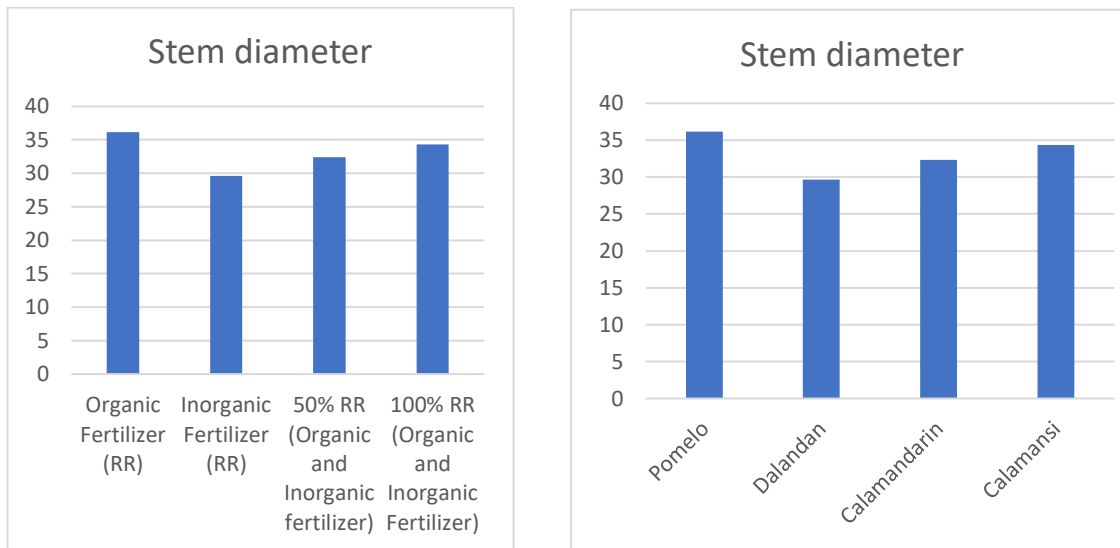


Figure 4. Stem Diameter

Length of Shoot

There was no significant interaction effect between citrus species and application of organic and inorganic fertilizer on the length of shoots (Table 5, Figure 5). Different citrus species showed significant difference in terms of length of shoots but not on the application of organic and inorganic fertilizer. Analysis of variance show that pomelo have significant different to the rest of species but dalandan, calamandarin and calamansi were comparable to this other.

It has been mentioned in the previous discussions pertaining to plant height that Nitrogen plays a significant role in plant growth. As stated by Leghari, et. al (2016), Nitrogen is most imperative element for proper growth and development of plants which significantly increases and enhances the yield and its quality by playing a vital role in biochemical and physiological plant. However, looking into the results of the study, there is no significant difference on the treatments with respect to different levels of fertilizers to the length of lateral branches.

A number of studies have been conducted on fertilizer practices of young citrus orchard trees. In general, young non-bearing trees are fertilized more frequently than mature trees, using smaller amounts of material for each application (Davies and Albrigo, 1994). Bester *et al.* (1977) studied application frequency of broadcast urea and liquid fertilizers on newly-planted 'Valencia' orange trees and found that trunk diameter was the same for trees fertigated six times per year compared with broadcasted fertilizer applied four times per year. Willis and Davies (1991) also found no effect on the length of lateral branches of 'Hamlin' orange when granular-type of fertilization is being utilized.

Table 5. Length of shoot of Citrus sp. Cuttings-derived Seedlings (CdS) as affected by the of organic and inorganic fertilizer.

Levels of organic and inorganic fertilizer	Citrus species				B-Mean
	POMELO	DALANDAN	CALAMANDARIN	CALAMANSI	
Organic Fertilizer (RR)	42.98	20.98	21.01	20.39	26.34
Inorganic Fertilizer (RR)	39.81	19.26	19.01	19.26	24.34
50% RR (Organic and Inorganic fertilizer)	48.49	22.01	18.65	22.08	27.81
100% RR (Organic and Inorganic Fertilizer)	50.25	23.15	18.73	23.15	28.82
^{1/} A- Mean	45.38 ^a	21.35 ^b	19.35 ^b	21.22 ^b	

^{1/} mean with the same letter are not significantly different at 5% level 1;

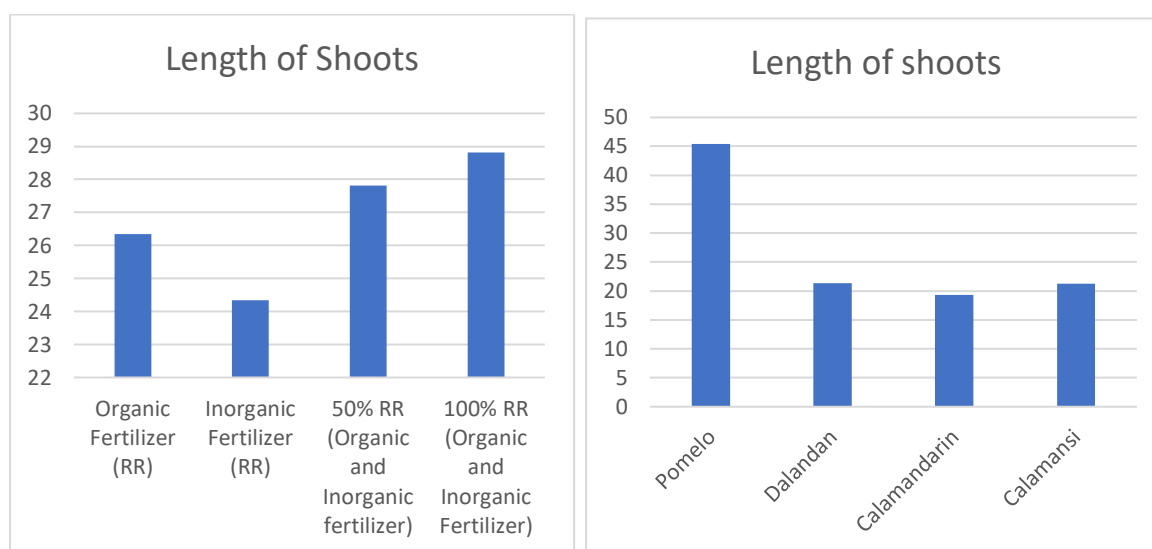


Figure 5. Length of shoots

Length of Branches

Table 6 and Figure 6 showed that application of fertilizer that there was no significant effect on the length of branch after 8th month of observation but on different citrus species there was a significant different. Pomelo obtained the highest length of branches. Inorganic fertilizers provide rapid release of nutrients and organic fertilizer (vermicompost) supply macro and micronutrients slowly for the plant (Akhter *et al.*, 2019). Application of organic and inorganic fertilizer has showed effect for sustainability in soil and may positively affect length of branch (Choudhary *et al.*, 2021). Tolessa and Friesen (2001) reported that growth and yield were significantly increased by organic fertilizer application enriched with chemical fertilizers. Combined application of organic and inorganic sources of NPK reduces the nutrient losses, improves fertilizer use efficiency and thereby increased soil nutrient availability for the plants (Prativa and Bhattarai, 2011).

Further, organic fertilizers obtained lowest length of branch this was due to insufficient supply of nutrient. Organic fertilizer only release nutrients when the soil is warm and moist, which usually corresponds to when your plants are most in need. However, because organic matter is broken down by soil organisms, nutrients are released more slowly than with inorganic fertilizers (Miller, 2018). According to Agegnehu *et al.*, (2014) sole application of organic fertilizer is constrained by access to sufficient organic inputs, low nutrient content, high labor demand for preparation and transporting. Thus, the integration of organic and inorganic sources may improve and sustain crop yields without degrading soil fertility status.

Table 6. Length of branches of Citrus sp. Cuttings-derived Seedlings (CdS) as affected by the of organic and inorganic fertilizer.

Levels of organic and inorganic fertilizer	Citrus species				B-Mean
	POMELO	DALANDAN	CALAMANDARI N	CALAMANSI	
Organic Fertilizer (RR)	121.32	56.86	51.78	56.83	71.69 ^b
Inorganic Fertilizer (RR)	112.54	43.86	49.58	43.53	62.38 ^c
50% RR (Organic and Inorganic fertilizer)	126.49	56.64	55.25	56.63	73.75 ^b
100% RR (Organic and Inorganic Fertilizer)	136.90	56.83	62.16	63.31	79.80 ^a
^{1/} A- Mean	124.31 ^a	53.54 ^b	54.69 ^b	55.08 ^b	

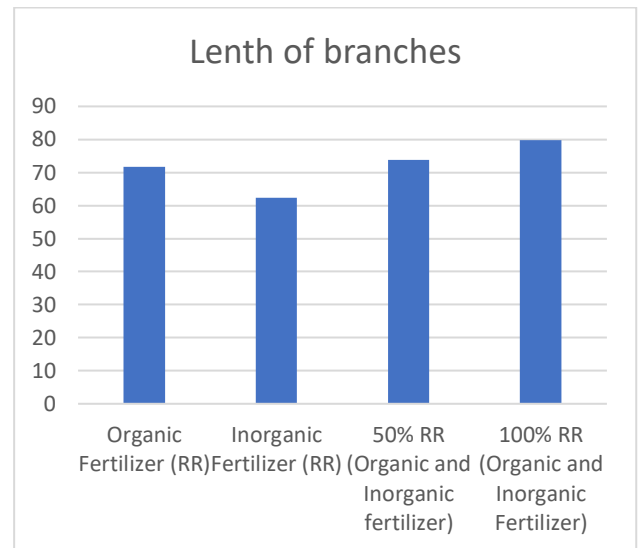
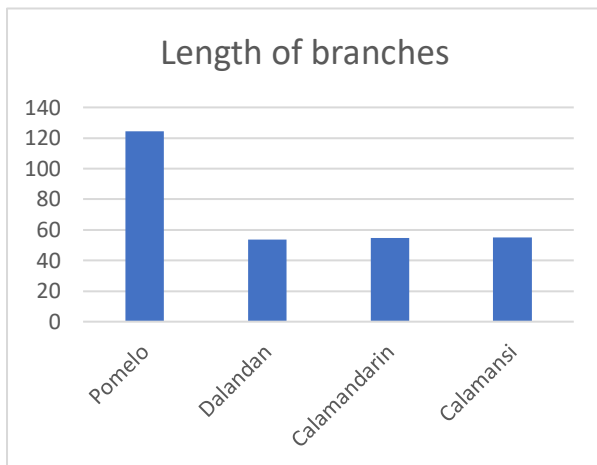


Figure 5. Length of branches

CONCLUSION

Field evaluation of different citrus species cuttings to applications of organic and inorganic fertilizers. Mainly, this study had two objectives: field evaluation of different citrus cuttings as applied by the application of organic and organic fertilizer under SPAMAST, Buhangin Campus, Malita, Davao Occidental condition

The results of the study are summarized as follows:

1. There were no significant interaction effects between the different citrus species and application of organic fertilizer on all parameter's treatment;
2. Fertilizer input increases pummelo growth over time. The highest growth and development were seen when an integrated organic and inorganic fertilizer was applied in a maximum ratio. It was found that fertilizer application provided the nutrients required for growth development specifically plant height, stem diameter, length of branch, and number of shoots of pummelo.
3. There was highly significant on citrus mean in all parameters but not significant in all parameter of treatment applied.

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ADLINKS AS CATEGORY OF STATE

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ABSTRACT

This article reveals the essence of adlinks and their influencing factors on word structure and meaning. The view point is explained with the part-of-speech based samples and sentences, implying many-sided categorial estimation.

KEY WORDS: *Adlinks, adverb, statives, adjective, quality, category of state, part-of-speech, lexico-grammatical.*

Russian “category of state”, the English qualifying a-words were subjected to a lexico-grammatical analysis and given the part-of-speech heading “category of state”.

This analysis was first conducted by B.A.Ilyish and later continued by other linguists. The term “words of the category of state” was later changed into “stative words”, or “statives”.

The Part-of-speech interpretation of the statives is not shared by all linguists working in the domain of English, and has found both its proponents and opponents.

Probably the most consistent and explicit exposition of the part-of-speech interpretation of statives has been given by [1].

According to their view, first, the statives, called by the quoted authors “adlinks” (by virtue of their connection with link verbs and on the analogy of the term “adverbs”), are allegedly opposed to adjectives on a purely semantic basis, since adjectives denote “qualities”, and statives-adlinks denote “states”.

Secondly, main characterization of statives-adlinks is a specific prefix -a.

Next, it is impossible to have the category of the degrees of comparison for adlinks.

Another basic reason that statives-adlinks have many-sided categorial estimation are undoubtedly serious and worthy of note.

The first scholar who undertook this kind of reconsideration of the lexeme status of English statives was L.S.Barkhudarov, and in our estimation of them we

essentially follow his principles printing out some additional criteria of argument.

Considering the basic meaning expressed by the stative, we formulate it as “stative property”, a kind of property of a noun referent. As we know, the adjective as a whole signifies not “quality” in the narrow sense, but “property”, which is categorially divided into “substantive quality as such” and substantive relation”.

In this respect, statives don’t fundamentally differ from classical adjectives. Moreover, common adjectives and participles in adjective-type functions can express the same properties (or “qualities” in a broader sense) as are expressed by statives.

Indeed, the main meaning types conveyed by statives are the psychic state of a person (afraid, ashamed, aware, ahistorical), the physical state of a person (astir, afoot); the state of an object in space (aslant, afloat, awash, aslope, around, afar, asquint, apart).

While investigating further meaning types, we may add **time**, **place**, **state** and **amount**. For instance:

Time: awhile, afresh

Place: ashore, afield, abed, aboard

Amount: plenty, apiece

State/Process: alight, adrift, apace, anew, aright, ablaze

So, in Modern English, adlinks can be identified as following:

1. The lexico-grammatical meaning of “state”.
2. The productive prefix a-;
3. Peculiar combinability: words of this class are associated almost exclusively with link-verbs;



4. The main syntactic function of a predicative complement.

Therefore, in the sentence they are used in the function of the predicative member of the compound nominal predicate, the objective predicative member, as well as a postpositive attribute. These words are never used as pre-positive attributes.

B. A. Ilyish thinks that adlinks possess the category of tense x. But this category (as well as the categories of mood, person, number, etc.) is expressed by the link-verb (is afraid, was afraid, were afraid, etc.), not by the adlink. As shown in § 26, the combination was afraid is not an analytical word. Cf. also fell asleep, dropped asleep, lay asleep.

The combinability of adjectives and adlinks differs greatly and the most typical combinative model of adjectives is its right-hand connection with nouns (an ardent lover). Now this model is alien to adlinks. It is the more striking since not only adjectives but almost any part of speech, many combinations of words, clauses or combinations of clauses can have right-hand connections with nouns in Modern English. As a matter of fact, statives are not used in attributive preposition and they are distinguished by the left-hand categorial combinability both with nouns and link-verbs.

On a synchronic basis this peculiarity of adlinks shows that they are not adjectives, but a different part of speech.

As an adverb

<i>Awhile</i>	<i>Afloat</i>
<i>Ashore</i>	<i>Adrift</i>
<i>Aslant</i>	<i>Abed</i>
<i>Afresh</i>	<i>Aboard</i>
<i>Afoot</i>	<i>Apiece</i>
<i>Aloud</i>	<i>Apart</i>
<i>Alike</i>	<i>Ahead</i>
<i>Afar</i>	<i>Aright</i>
<i>Apace</i>	<i>Anew</i>
<i>Aplenty</i>	

As a verb

<i>Await</i>	<i>Aswim</i>
<i>Abet</i>	<i>Asleep</i>
<i>Abide</i>	<i>Awake</i>
<i>Aright</i>	<i>Alight</i>

As an adjective

<i>Ablaze</i>	<i>Amoral</i>
<i>Akin</i>	<i>Amiss</i>
<i>Adrift</i>	<i>Ahistorical</i>
<i>Alike</i>	<i>Alight</i>
<i>Aplenty</i>	<i>Afloat</i>

The syntactical functions of adjectives and adlinks do not coincide. Adjectives are mainly employed as attributes, and adlinks as predicative complements. This is why adlinks are often called predicative adjectives and adverbs (see The Oxford Dictionary) to suggest that the difference between these classes of words is purely syntactical. But adlinks form connections not only with

finite link-verbs, parts of predications, but with verbid link-verbs as well, employed in various functions.

For instance:

The twins were *alike*. (*adjective*)

We are all *alike* concerned in religion. (*adverb*).

A cigarette set the dry grass *alight*. (*adjective*).

A suspect *alighted* from the train and proceeded on his way. (*verb*)



*Da Silva plays a bright, lonely student from New York, **adrift** in small-town Arizona. (adjective)*

*The team are now just six points **adrift** of the leaders. (adverb).*

Summing up, we can say that adlinks are different classes of words, that are productive and many-sided from syntactical, lexical and grammatical point of view. On a synchronic basis the development of adlinks show that they belong to different part-of-speech and is categorized in both form and structure-based features.

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THE PECULIARITIES OF MEANING COMMONALITY OF COMPOUND WORDS AND WORD COMBINATIONS IN THE UZBEK AND ENGLISH LANGUAGES

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ABSTRACT

This article provides information on the specific features of meaning commonality of compound words and word combinations in the Uzbek and English languages. It is emphasised that word combinations have gradually turned into compound words as a result of certain semantic changes in their meaning in all languages of the world. And this compound word was used to name and indicate something or an event. Two (or more) words in the composition named a new subject while keeping their meaning (the meaning changed completely in cases of connotation).

KEY WORDS: *subordination, linguist, phenomena, linguist analyses, mutual similarities, word-combinations, compound words, indirect harmonization, names of places.*

INTRODUCTION

Word combinations and compound words are indispensable parts of all language units available for communication. They are characteristic of almost all languages in the world, and in terms of number and volume, they are more common in one (inflectional languages) and rare in the other (agglutinative languages). Focusing on the cross-linguistic study of these two phenomena, we can say that there are still different (defective) opinions [1] on understanding their nature and essence, their place in the language, and sometimes even defining them.

If we clarify the misunderstandings in the comments based on our national language, on the one hand, the deficiency is felt in the fact that the difference between compound words and phrases is not clearly defined, and on the other hand, depending on the specialty of each linguist (phonetist, grammarian, lexicologist), on the other hand, from the specialty point of view, approaching the problem personally (specifically) and by expressing personal opinion. For example, a linguist analyses the language units under research from the point of view of an attribute and apposition, while the other explains it as mutual subordination of the components, the third one divides them into primary and secondary parts, and the fourth, in turn, writes them by adding or separating them, it takes into account the cases.

RESEARCH METHODS

The linguist T. Khojayev diligently studied the interpretations of word combinations. He studied the view points of famous Russian (O.S.Akhmanova, S.G.Barkhudarov,

F.M.Berezin, I.A.Baskakov, L.E.Lopatina) and Uzbek (G.Abdurahmonov, S.Mamajonov, A.Rustamov, A.Rofiyev, D.Shodmonkulova, O. Azizov, A.Aliyev, F.Ikramova, M.Irskulov, N.Makhmudov, A.Nurmonova) linguists based on their opinions and made noteworthy conclusions, only expressed a more objectionable opinion on naming the word combinations. He claims that: "Since a word combination is a syntactic unit in question, it is an expression of a common concept in terms of its meaning and essence [2], and we found it necessary to call it not a "combination of words" but an "expression of a common concept" on this basis.

In our opinion, this term, which is recommended for changing the names of word combinations, is also objectionable. Because names (terms) differ from other designations with a certain limit of use. They are very special and limited in use. The term *yoyiq tushuncha ifodasi* 'the definition of extended concept' at first sight leads the interested person to infinity. It does not indicate the limit of thought. Moreover, the information conveyed by the words "extended" and "concept" is also abstract.

The hypothetical views expressed in the Uzbek and English languages are still controversial in terms of their names and essences. There is an incautious opinion in Uzbek and English linguistics regarding the spelling of compound words (joining and separating words), the same that violates not only the rules of writing but also causes certain misunderstandings in communication. In this regard, we have published our personal (positive and objectionable) opinions in the scientific articles and master's theses published in the process of studying this problem.



RESULTS AND DISCUSSIONS

The main focus is directed at the commonality of meaning of the words (components) involved in this two-language event. Therefore, as the words are related in a mutual meaning relationship with each other, the information conveyed through them (information) is interrelated, mutually dependent, and cannot convey the message without one or the other. In order to give a brief overview of the opinions expressed by us on the topic so far, we try to show the mutual similarities and differences between word-combinations and compound words in the Uzbek and English languages on the basis of some (exact) examples in this article.

We will start our analysis with the language units related to the word *oq* 'white' used as an attribute, which is a determining factor of word combination or compound word. Naturally, there are word combinations and compound words with the word *oq* or *white* exist in both languages. It should be noted that one of the components of phrases and compound words in Uzbek is There are a lot of language units consisting of the component *oq* 'white' in the Uzbek language: *oq soqol-oqsoqol*- 'white beard (word combination)- the chief of the clan or tribe, wise old man, whose responsibility is to improve the neighborhood, ensure peace and tranquility, and participate in large and small events (compound word)', *oq bilak-oqbilak*- 'white wrist (white according to race and ethnicity)- a woman from aristocrate family, like a lady (deeds delicately)', *suyagi oq-oqsuyak*, -'someone considered as a symbol of unhappiness-aristocrate', *ko`ngli oq-oqko`ngil*, 'bee's knees -forthcoming', *oq soch- oqsoch*, -'blond-servant', *oq saroy-Oqsaroy*, -'white palace-the name of residence of the President', *oq uy -Oqy*, -'the white coloured house of people-the place of President where meeting and conferences are held'

If these language units are analysed in terms of mutual meaning, it can be seen that the concept explained through the examples is reflected in some of them with the direct sharing of their meaning, and in others with the figurative meaning (indirect harmonization). It can be seen, therefore, *oq soch*- the whiteness of the hair (grey hair), in its logical sense, and in the main information to be given *With oqsoch*, the name of the thing is transferred based on its external identity. It means *a cleaner(woman)*. With the combination of two words, a third object, or *a female servant*, is named.

Now let's compare the compound words with the "oq"(white) component found in the Uzbek language with alternative options in the English language. Due to the diversity of variants and the various reasons for the commonality of meaning, we categorise them into the following groups:

Group 1; Both languages have a component 'oq'(white): *Oqsaroy-The White House*. It can be seen that these linguistic units have the component "white in both languages, and in both of them they name a third object-phenomenon and are used in the sense of "residence". The commonality of the meaning is indirect. because they are proper nouns (names of places) and are written with a capital letter according to the rules of English and Uzbek spelling. Here is an example of the language in use.

In English: "*The White House, is the official residence and workplace of the President of the United States.*"

In Uzbek: "*Oqsaroy-Toshkentdagi zamonaviy me'moriy inshoot; O'zbekiston Respublikasi Prezidentining qarorgohi.*"

Group 2; The component 'oq' in Uzbek in a compound word is replaced by another word in English. For instance, the Uzbek compound words *oqsoqol, oqsoch*. It is known that the word *oq* in Uzbek, as in this compound word, is used to denote elder, experienced, and wise person. And as a result of direct commonality becoming indirect, a third person is named (*oqsoqol*-the chief of the clan or tribe). white man), we can use the variant of the word combination (wise old man) expressed by completely different words to understand the meaning and concept it denotes.

As it is clear, the component "white" is not used in English. Instead, the words "wise" and "old" are used to express the meaning of the concept. It should be noted that the '*oqsoqol*' in Uzbek means *rank* (whose responsibility is to improve the neighborhood, ensure peace and tranquility, and participate in large and small events) and association (members of the committee).e.g., *Hay'at a'zolari yigirma kun qishloq oqsoqolligida turib, tekshuruv o'tkazdilar*). In addition, in our daily life, *Oqsoqol* is the chairman of the association of leaders and is also called "chief elder" in some regions of our republic. In English, there are no alternative language units that can match the above-mentioned word combinations typical of our national language and concepts.

Group 3 includes the direct commonality words *oqqush, oqkaptar, oqilon, oqayiq, oqquyruq, oqqovun, oqurug'*, *oqgurvak, oqmayiz*, as well as the indirect commonality words *oqsuyak* and *oqko'ngil*. While analysing the variants of this group of compound words in English, we found out that, unlike the two groups above, they do not contain the component "white" or any other language unit that replaces this word. We did not achieve unity. In fact, instead of the word *oqqush*, the simple word *swan* is used, and the word *aristocrat (nobleman)* is used as an alternative to the word *oqsuyak* in English. It can be seen that the Uzbek people refer to the "white colour of a bird" under the word *oqqush* and under the linguistic unit *oqsuyak*-a noble people (rich background).

We can observe the same situation in the word *Oqko'ngil*. In the Uzbek language, the word "*Oqko'ngil*" refers to a human personality, it means a person who is kind, honest, and does not hold grudges in his heart. In English, the word "compassion" is used as an alternative that denotes the same meaning. In the Uzbek language, the word "*Oqko'ngil*" means a characteristic of any (certain) human being, while in the English language, the word "compassionate" is understood as a sign of kindness expressed by a person meant by the speaker.

Group 4; Some compound words that exist in the Uzbek language with the component 'oq' are included in it. These compound words acquire connotative meaning, as in the following:

oqyol-duoi-xayr (blessing, prayer-farewell) E.g. "*Mezbon mehmonni uyiga kuzatayotib unga oqyo'l tiladi*"(The host wished him a safe journey while arting with the guest) From the content of the statement, it can be understood that the host wishes the guest to have a pleasurable and safe journey and to reach his destination safely. A compound word in English is not found.



Oq qilmoq-Duoibad(curse)- "Ota o'g'lining ketma-ket noj'oya harakatlaridan g'azablanib, uni oqpadar qildi.(The father was angry at his son's successive misdeeds and cursed him). It is understood from the sentence that a certain child was cursed by a certain father as a result of his bad deeds and knowingly committed sins and he He was kicked out of his home forever where he was born and raised. By the compound word, the meaning 'father's plea to the god who wishes harm to his child' is understood. An alternative to this combination was not found in English.

oqqon, oqkasal-"Oqqon bemorligini oqkasal bilan bogliqligi yoq." It is clear from the example that in the speech of the doctor making the above diagnosis, using euphemistic means, the doctor talks with the patients not to fear them and comforts the horror of the disease. Because the word "oqqon" is cancer, and the expression "oqkasal" means leprosy, used in a euphemistic way in common words.

oqsut, oqquloq- we can see that the meaning of these two compound words has become more positive in the form of "oqsut, " (thanks to my mother who raised me with kind milk!). The compound word "oqsut" means purity and holy food for children. Now the compound word "oqquloq" has a negative meaning, and it expresses the hatred of our people for the Russian invaders. This word has a negative meaning and is a mocking nickname given to Russians by the local people. Betrayers are still contemptuously called "Ivan" or "oqquloq" among local people in Khorezm.

Oqsil, oqlik-Negative or positive (sema, connotative) meaning of these compound words depends on the situation, event, or topic in which they are used. *Oqlik* means new, fashionable, or light-colored clothes in wedding ceremonies ("Mana bu xamir uchidan patir, hojim: oqlik,quda bolmoqchimiz") and in funerals, the oqlik means the "shroud" of the dead., e.g. "Marhum uchun oqlikni bilgan kishi odam yirtsin(One who knows the deceased, let tear the shroud). In everyday life, the word oqlik acquires the meanings of fresh milk and making curds from milk, a small amount of cream or sour cream to make sour cream from boiled milk: "Sut bormi?" Bor, lekin pishirib, oqlik solib qoygan edim". Do you have milk? There is, but I boiled it and put oqlik in it to make sour-cream of it.

The compound word "Oqsil" means 'protein', the most important component of the organism of animals and plants, an important complex substance containing nitrogen. For example, "Oqsil hujayralar tuzilishi uchun muhim moddadir (Protein is an important substance for the structure of cells) or "Ayol tuxumni chaqdi. Yutoqib oqsilni so'rdi. (The woman bit the egg. And soaked the protein thirstily. When it comes to health, this word acquires negative meaning and refers to a severe contagious disease that occurs in cattle and pigs: "Sog'in sigirlarning anchasi oqsil kasaliga chalindi" (Most dairy cows suffer from Foot-and-Mouth disease". There is "Foot-and-Mouth diseaseis' an analogue, and "Aptae epizooticae' scientific term in English.

CONCLUSION

At the end of our article, we would like to emphasise that word combinations have gradually turned into compound words as a result of certain semantic changes in their meaning in all languages of the world. And this compound word was

used to name and indicate something or an event. Two (or more) words in the composition named a new subject while keeping their meaning (the meaning changed completely in cases of connotation).

This phenomenal case of a language continues as long as the languages exist. It enriches the vocabulary of the language and stabilises the word combinations by turning them into compound words. As a result, such linguistic realities have become a tradition in the development and flourishing of languages, and are one of the internal possibilities for increasing the expression of language power. By these opinions, we mean that it should surely be taken into account that the rules of writing (language units) have a comprehensive and important role, especially in written speech. Because incorrect spelling (literal copying of sounds, spelling of words, punctuation marks) confuses the mind, causes misunderstanding.

In this sense, we have a recommendation for those who are interested in language and linguists (speakers of both languages) that "Compound words should always be written together. Only jointly written words should be understood under the name of a compound word. If words are found written separately, they should be included in the list of word combinations, and based on this, the meaning should be understood and morphological, syntactic, and semantic analysis should be carried out.

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A STUDY ON FOOD SAFETY POLICIES AND PRACTICES TOWARDS STREET FOOD VENDORS IN COIMBATORE CITY

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ABSTRACT

Street food is a weak link in food safety supervision, a topic of academic study for many years. In addition to offering convenience for many, millions of low-income individuals rely on street food for their livelihood, which has a significant positive impact on the economies of many developing nations.

INTRODUCTION AND DESIGN OF THE STUDY

The term street food focus on the "street-vended foods" or its equivalent "street foods" which are defined as foods and beverages prepared and/or sold by vendors in streets and other public places for immediate consumption or consumption at a later time without further processing or preparation. This definition includes fresh fruits and vegetables which are sold outside authorized market areas for immediate consumption. Because of socioeconomic changes in many countries, this sector has experienced significant growth during the past few decades. Urbanization and population growth, especially in developing countries, are expected to continue into the next century and street-vended foods, which are largely but not exclusively an urban phenomenon, will expand accordingly. While street-vended foods are appreciated for their unique flavours as well as their convenience, they are also often essential for maintaining the nutritional status of the population. Street food vending assures food security for low-income urban populations and provides a livelihood for a large number of workers who would otherwise be unable to establish a business for want of capital. Street food vending also offers business opportunities for developing entrepreneurs. In contrast to these potential benefits, it is also recognized that street-food vendors are often poor and uneducated and lack appreciation for safe food handling.

OBJECTIVES OF THE STUDY

- To know the socio demographic status of street food vendors in Coimbatore city
- To assess street vendors food safety and Hygiene knowledge level
- To find the factors influencing the Hygiene knowledge, attitude and practices of street vendors
- To offer suggestion to improve the vendors food safety and Hygiene knowledge level in food production.

SCOPE OF THE STUDY

The present study covers the coimbatore city of tamilnadu. It deals with the policies and attitudes of food safety knowledge and hygienic practice among street food vendors the period of this study is about four months i.e. From December 2022 to March 2023.

RESEARCH METHODOLOGY

MEANING

Research methodology is a way to systematically solve the problem. It may be understood as a science of studying how research is done scientifically. A research design is a basic plan that helps in data collection or analysis.

**DEFINITIONS**

Research defines to a critical, careful investigation or enquiry or examination having as its aims newly discovered fact

RESEARCH DESIGN

The task of defining the research problem is the preparation of the design of the research project. The research design of the study is descriptive in nature. The term research is also used to describe an entire collection of information about a particular subject using the street food vendors.

DATA COLLECTION

Data collection is a term used to describe a process of preparing and collecting data for example as a part of a process improvement or similar project. The purpose of data collection is to obtain information to keep and processed to obtain results.

SAMPLE SIZE

Sample size refers to the number of items to be selected from the sample. 120 respondents are taken as a sample for this study.

SAMPLE DESIGN

A sample design is a definite plan for obtaining a sample frame from frame. It refers to the techniques or the procedure that would adopt in selecting some sampling unit from which inference about the population are drawn. The sample design adopted for this study is convenient random sampling.

METHODS OF DATA COLLECTION**PRIMARY DATA**

The primary data are those, which are collected a fresh and for the first time and thus happen to be original in character. For the collection of primary data, questionnaire was used as a research instrument. It has both closed ended and open questions.

SECONDARY DATA

The secondary data, on the other hand are those which have already been passed through some statistical process. For the theoretical aspects secondary data were collected from books, journals and downloaded from websites.

TOOLS USED FOR THE STUDY

The study is done using

1. Simple percentage analysis
2. Likert Scale
3. Henry's Garrett Ranking
4. Two way table
5. Chi-square test

Simple Percentage analysis

The percentage analysis is mainly employed to find the distribution of different categories of respondents. As the values are expressed in percentage it facilitates comparison and standardization. This analysis describes the classification of the respondents falling under each category.

Formula

$$\text{PERCENTAGE} = \frac{\text{Number of Respondents}}{\text{Total Number of Respondents}} \times 100$$

Likert Scale

A Likert Scale is a type of rating scale used to measure attitude or opinion. With this scale, respondents are asked to rate items on level of agreement. For example,

- Highly Satisfied
- Satisfied
- Neutral



- Dissatisfied
- Highly Dissatisfied

Henry Garrett’s Ranking

This technique was used to evaluate the problems faced by the researchers. The orders of merit given by the respondents were converted in to rank by using the formula. Garrett’s ranking technique was used to rank the preference indicated by the components on different factors. As per this method, respondents have been asked to assign the rank for all factors and the outcomes of such ranking have been converted more value.

$$\text{Percent Position} = \frac{100 (R_{ij} - 0.5)}{N_j} \times 100$$

Where,

R_{ij} = Rank given for the ith variable by jth respondents.

N_j = Number of variables ranked by jth respondents.

With the help of garrett’s table, the percentage position estimated is converted into scores then for each factor, the scores of each individual are added and then total value of scores and 36 mean value of scores is calculated. The factors having highest mean value is considered to be the most important factor.

Two Way Table

A two-way or contingency table is a statistical table that shows the observed number or frequency for two variables, the rows indicating one category and the columns indicating the other category. Two-way frequency tables are also called contingency tables. Two-way frequency tables are a visual representation of the possible relationships between two sets of categorical data.

Chi-Square Test

A chi-squared test, also referred to as chi-square test or χ^2 test, is any statistical hypothesis test in which the sampling distribution of the test statistic is a chi squared distribution when the null hypothesis is true. Also considered a chi-squared test is a test in which this is asymptotically true, meaning that the sampling distribution (if the null hypothesis is true) can be made to approximate a chi-squared distribution as closely as desired by making the sample size large enough.

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

- Σ means to sum up
- O = each **Observed** (actual) value
- E = each **Expected** value

LIMITATION OF THE STUDY

- As the topic for the study is wide, all matters regarding the study could not be analysed and taken for the consideration.
- The study was undertaken only in Coimbatore city, and the result may not be the same in other of the state.
- Data's collected totally depend on respondent's view, which could be bias in nature.
- The study can't be 100% accurate at all the time. This is because of the inherent limitations that could be present in a study.
- Illiteracy and low educational attainment of the respondents of the respondents made the task of researchers more difficult to make them understand the purpose of research.
- Though large number of books available on food safety in general, publications regarding the food safety knowledge and hygienic practices among vendors are not available in numbers.

REVIEW OF LITERATURE

Jowan Choi, (2013)¹ in his study examined dimensions of consumer risk/benefit perception toward street food and tested their effects on attitude toward street food and behavioural intention. Exploratory factor analysis tested a five risk and two benefit factor model. A conceptual model was tested using structural equation modelling. This study found that perceived risks negatively affected consumer attitude toward street food, and perceived benefits positively affected attitude. In turn, risk perception negatively affected behavioural intention. The study found that attitude toward street food fully mediated the relationship between benefit perception and behavioural intention and partially mediated the relationship between risk perception and behavioural intention.



Ty Matejovsky (2013)² in his paper provides a critical food analysis of balut. These popular Filipino street snacks comprised of partially incubated duck eggs with a decidedly liminal character have become increasingly familiar to Westerners over recent years thanks to their most sensationalized depictions in various genres of popular culture. A number of pertinent examples from Western reality television, independent film, post-grunge alternative rock, international prizefighting, and myriad foodie/gastroporn websites, as well as my own ethnographic experience in the Philippines dating back to the mid-1990s, highlight balut's symbolic value both in the construction of identity for native Filipinos and as a rite of passage for others.

Lenore Lauri Newman, (2013)³ in his article street vending of snacks and small meals is growing in popularity, coinciding with a rising interest in local food systems and mixed-use planning in urban neighbourhoods. However, many cities have little or no urban street food due to historically strict bylaws, and in some centres, the move to relax the prohibition on street foods has been difficult. This paper examines the theoretical discourse surrounding street food and presents a case study of the city of Portland, Oregon, which is seen as a leader in the area of allowing a vibrant street food culture to develop. This study found that Portland's success is a product of both progressive municipal bylaws and intrinsic spatial and social qualities of the urban landscape. Lessons for cities trying to encourage a street food industry are discussed.

Jowan Choi, (2013) "Journal of Travel & Tourism Marketing": The Effects of Consumers Perceived Risk and Benefit on Attitude and Behavioural Intention, A Study of Street Food, 30.

Ty Matejovsky, (2013) "The Incredible, Edible Balut": Ethnographic Perspectives on the Philippines' Favourite Liminal Food, 16.

Lenore Lauri Newman, "Street food and vibrant urban spaces": Lessons from Portland, Oregon Local Environment, V-18, 2013.

TABLE 4.1.1
TABLE SHOWS THAT GENDER OF THE RESPONDENTS

S.NO	GENDER	NO.OF RESPONDENTS	PERCENTAGE(%)
1	Male	74	62
2	Female	46	38
Total		120	100

(Source: Primary Data)

INTERPRETATION

The above table shows that 62% of the respondents are belonging to Male category and 38% of the respondents are belonging to the Female category.

INFERENCE

The majority (62%) of the respondents are belonging to Male category.

TABLE No – 4.2.1
TABLE SHOWING THE LEVEL OF SATISFACTION TOWARDS THE ATTITUDE OF STREET FOOD VENDORS

Range	Level of Satisfaction	No. of Respondent	Percentage%
Above 15	Satisfied	98	81.66
10 – 15	Neutral	22	18.34
Less than 15	Dis satisfied	Nil	Nil
Total		120	100

INFERENCE

The above table shows that majority 81% of the respondents are satisfied with the attitude of street food vendors, followed by 18% of the respondents are neither satisfied nor dissatisfied and none of the respondents are dissatisfied with the attitude of street food vendors.



**TABLE NO – 4.3.1
PERCENTILE POSITION AND GARRETT VALUE**

S.No	$100 (R_{ij} - 0.5) \div 5$	Calculated Value	Garrett Value
1	$100 (1 - 0.5) \div 5$	10	75
2	$100 (2 - 0.5) \div 5$	30	60
3	$100 (3 - 0.5) \div 5$	50	50
4	$100 (4 - 0.5) \div 5$	70	40
5	$100 (5 - 0.5) \div 5$	90	24

INFERENCE

Position of the rank 1, 2, 3, 4 & 5 in the Garrett ranking table for the rank 1, the percentage position is calculated as 10 and the table value 75 and in the same way the Garrett value of rank 2 to 5 is identified.

TABLE 4.3.2 GARRETT RANKING TABLE

HYGIENE PRACTICES	1	2	3	4	5	Total	Rank
Use of Apron	1350	780	1700	1320	528	5678	V
Hair covered	1650	1320	1200	1040	624	5834	IV
Cleanfinger nails	1725	1680	1000	880	648	5933	III
Clean water	1650	2340	850	960	432	6232	II
Hand washing	2700	1080	1150	680	624	6234	I

INFERENCE

The above table sources that Garret score value and ranking. Firstly, the Garret rank are calculated by using appropriate garret ranking formula. Then based on the Garret ranks the Garrettable value is ascertained. The Garret value given in which are multiplied to record Garret scores in table.

Finally, by adding each row the total garret score is obtained. Then the garret scores are ranked according to their values: The First Rank is given to “**Hand washing regularly**” The Second Rank is given to “**Usage of clean water**” The Third Rank is given to “**Neat/clean finger nails**” The Fourth Rank is given to “**Hair covered**” The Fifth Rank is given to “**Use of Apron**”

TABLE No 4.4

TWO WAY TABLE SHOWING THE RELATIONSHIP OF THE DIFFERENT AREAS OF PEOPLE USING THE VARIOUS TYPES OF FUELS FOR COOKING

S.No	Location	Fuel used for cooking				Total
		Gas cooker	Electric stove	Charcoal	Fire wood	
1	Rural	20 (44.44%)	18 (39.14%)	6 (66.66%)	08 (40%)	52
2	Urban	10 (22.23%)	20 (43.4%)	2 (22.23%)	4 (20%)	36
3	Semi-urban	15 (33.33%)	8 (17.39%)	1 (11.11%)	8 (40%)	32
		45 (100%)	46 (100%)	9 (100%)	20 (100%)	120

INFERENCE

The above two way table shows that majority (67%) of the respondents are using Charcoal as a fuel for cooking in rural area, followed by (44%) of the respondents uses Gas cooker, followed by (40%) of the respondents uses firewood, and at last (39%) of the respondents use Electric stove as a fuel for their cooking purpose.

The above two way table shows that majority (43%) of the respondents are using Electric stove as a fuel for cooking in urban area, followed by (22%) of the respondents uses Gas cooker, (22%) of the respondents uses Charcoal, and at last (20%) of the respondents use Fire wood as a fuel for their cooking purpose.



The above two way table shows that majority (40%) of the respondents are using Fire wood as a fuel for cooking in semi-urban, followed by (33%) of the respondents uses Gas cooker, followed by (17%) of the respondents uses Electric stove, and at last (11%) of the respondents use Charcoal as a fuel for their cooking purpose.

TABLE No 4.5

CHI-SQUARE TABLE SHOWING THE RELATIONSHIP BETWEEN THE DIFFERENT AREAS OF PEOPLE USING THE VARIOUS TYPES OF FUEL FOR COOKING

Observed Frequency	Expected Frequency	O - E	$(O - E)^2$	$\frac{(O - E)^2}{E}$
20	19.5	0.5	1	0.05
10	13.5	-3.5	12.25	0.90
15	12	3	9	0.75
18	19.9	-1.9	3.16	0.18
20	13.8	6.2	38.44	2.75
08	12.2	-4.2	17.64	1.44
06	3.9	2.1	4.41	1.13
02	2.7	-0.7	0.49	0.18
01	0.075	0.92	0.84	11.2
08	8.66	-0.66	0.43	0.04
04	6	-2	4	0.66
08	5.33	2.6	6.76	1.26
TOTAL				20.57

$$\begin{aligned} \text{Degree of freedom} &= (r - 1)(c - 1) \\ &= (3 - 1)(6 - 1) \\ &= 2 \times 5 \\ &= 10 \end{aligned}$$

Tabulate chi-square at 5% for 9df = 18.307 since, the calculated value of chi square is greater than the tabulated value of chi-square at 5% level of significant it is significant and null hypothesis is rejected. Hence the study concluded that the location has significant effect on the fuel used for cooking.

FINDINGS, SUGGESTIONS AND CONCLUSION

5.1 FINDINGS

5.1.1. SIMPLE PERCENTAGE ANALYSIS

- ❖ Majority 62% of the respondents are male.
- ❖ Most of the respondents with 39% belongs to the age group of below 20 years.
- ❖ Majority 67% of the respondents are married.
- ❖ Mostly 47% of the respondents are having 3-4 members in their family .

LIKERT SCALE

- ❖ Majority 82% of the respondents have satisfied for the attitude of the street food vendors.
- ❖ 18% of the respondents have responded neutral for the attitude of the street food vendors.

5.1.3. GARRET RANKING

- ❖ The Garret ranking table shows the overall ranks given by the respondents
- ❖ The first rank is given to “Hand washing regularly.” ❖ The second rank is given to “Usage of clean water”. ❖ The third rank is given to “Neat/Clean finger nails”
- ❖ The fourth rank is given to “Hair Covered”
- ❖ The fifth rank is given to “Use of apron”



5.1.4. TWO WAY TABLE

- ❖ Majority 67 % of the respondents who are residing at rural areas are using Charcoal for the purpose of cooking food.
- ❖ 11% of the respondents who are residing at the semi urban areas are using charcoal for the purpose of cooking food.

5.1.5. CHI- SQUARE

- ❖ The study calculated that the respondents residing at the rural areas have no significant effect on the types of fuel used for cooking .

5.2 SUGGESTION

- ❖ Utensils have to be washed and cleaned regularly.
- ❖ Method of washing can be significantly improved for cleaning the utensils.
- ❖ High technology can be used for the purpose of disposing the waste.
- ❖ Left over foods can be disposed in an efficient manner.
- ❖ Hygiene practices can be significantly improved.
- ❖ Various methods can be improved for the purpose of handling the food.
- ❖ The street vendors have to have the thorough knowledge, attitudes and practices of street food vendors.
- ❖ There is a need to draw attention of state government, for establishing an integrated plan for street food vending business.
- ❖ Mostly the vendors are college dropouts, Hence some educational awareness is required to them.
- ❖ The government can help to boost the infrastructure and this can help the vendors' business to be regional development for particular region.
- ❖ As storage is the major problem for street vendors, government can take proper initiative like it can monetary incentives to vendors to maintain proper cleanliness and storage to minimize their loss and wastage of food.

5.3 CONCLUSION

- Street vendors are contributed to the well- beings of the urban and rural population by providing the goods and products at cheaper rates. The contribution of street vendors is important to the overall economy and labour market. This study investigated in one twenty respondents of street vendors randomly selected in Coimbatore city to address the problem faced by them, through direct interview schedule the study found that most of the respondents are faced with problems by climatic change, health conditions, and less awareness among street vendors about government policies provided to the street vendors. But they are not aware that such policies
- Street food vending plays an important role in the urban food system, providing affordable and accessible food options into large segments of population. However, street food vendors often face challenges such as legal recognition, inadequate infrastructure and health safety concerns. Thus the food vending industry can develop effective policies that can promote its growth and sustainability.

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IMPACT OF TRIBAL SUB-PLAN ON ECONOMIC DEVELOPMENT OF TRIBES: A STUDY OF GAJAPATI DISTRICT

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ABSTRACT

The objective of the research paper is to analyse the impact of the tribal sub-plan on the socio-economic condition of respondents and examine the impact of the tribal sub-plan on sustainable livelihood, education, and economic security of tribals in Gajapati district, Odisha, India. The study is based on primary and secondary data. Primary data was collected from 02 blocks, viz., Mohana, and R. Udayagiri block under the Gajapati district in 2021. The analysis is based on demographic variables, economic variables, income, occupational structure and educational variables in Gajapati district using descriptive statistics. Tribal education level is very low, no basic facilities, a lack of infrastructure, and no sustainable livelihood; there is economic insecurity among tribal people. All these problems may be eradicated through the tribal sub-plan. The Tribal Sub Plan is a strategic plan that was introduced by the Government of India for the quick socio economic development of Tribal people in India.

KEY WORDS: Tribal Sub-Plan, Economic security, Infrastructure, Education, MSP

1. INTRODUCTION

The indigenous people or the aboriginals all over the world somehow have always lost out to the intruders, trespassers or the encroachers. Many a tribes have been completely obliterated from the face of the earth. They became alien in their own land; they have been hunted down in the 'games'; and they have been looted of their land, rivers, forests and mines and minerals and even women. Origins of many citizens and countries origin can be found in the merciless killings of these people in the name of discovery of new land and new resources. Laws alien to them were imposed upon them in the name of culture, systems and society.

Article 366 (25) of the Constitution of India refers to Scheduled Tribes as those communities who are scheduled in accordance with Article 342 of the Constitution. This Article says that only those communities who have been declared as such by the President through an initial public notification or through a subsequent amending Act of Parliament will be considered to be Scheduled Tribes. The population of Scheduled Tribes (STs) in the country, as per Census 2011 is 10.45 crore. STs constitute 8.6 percent of the country's total population. Tribal development has been in the centre stage of the Government of India since independence. There have been challenges in achieving desired pace of development among tribal people. This is mainly on account of their traditional life styles, remoteness of habitations, dispersed population and displacement.

Tribal Sub Plan (TSP) [now called Scheduled Tribe Component (STC)] Strategy was adopted in 5th Five Year Plan (1974-75) for accelerated development of tribal people. It envisages channelizing the flow of outlays & benefits from all sectors of development to ST population. TSP funds are dedicated source of funds for tribal development. 41 Central Ministries has been mandated to earmark Tribal Sub-Plan funds in the range of 4.3% to 17.5% of their total Scheme allocation every year for tribal development. Ministry of Tribal Affairs provides additive to these initiatives by way of plugging gaps. The efforts made through TSP / STC Strategy has brought out some improvements for tribals in terms of various indices relating to literacy, health, livelihood, etc. However, there still exists gap in human development indices between Scheduled Tribes and other social groups.

A programme for tribal areas was also taken up on a pilot basis in areas of special agrarian unrest with a establishment of 6 Tribal Development Agencies (TDAs) in Andhra Pradesh, Bihar, Madhya Pradesh and Orissa. Towards the end of the Forth Plan, two more TDAs were created in areas not based on any agrarian unrest. This programme envisaged a comprehensive frame covering



protective measures, economic development and social services. A review of development of Scheduled Tribe was under taken on the eve of Fifth Five Year Plan, where upon the Tribal Sub Plan (TSP) mechanism was designed to channelise the flow of benefits arising out of outlays from the general sectors in the plans of States and Central Ministries for the welfare of the tribals. The TSP strategy consists of two pronged approaches viz. (1) socioeconomic development of tribals (2) protection of tribals against exploitation. This strategy was the result of consultations among anthropologists, NGOs, development administrators and policy makers. As mentioned above, it was introduced in the Fifth Plan.

1.2. Statement of the Problem

Various development agencies especially the TSP and the of various other government departments like forestry, soil and water conservation, roads and buildings, minor irrigation, the horticulture etc. have geared to improve the quality of life of the tribal. Development of modern means of transport, roads and bus services have opened up the tribal areas in recent decades and several non-tribal came into contact with the tribal and contributed for the magnetization of tribal economy.

The present study is in the context of the need to assess the impact of tribal sub-plan schemes on tribal communities, with special reference to Gajapati district of Odisha State, India. The study sheds light on the factors affecting the accessibility of various tribal sub-plan schemes. Further, the study would be helpful to analyse the constraints and prospects of increasing the pace of development of tribes so as to achieve the objective of integrating them into the national mainstream. Lastly, the study would be helpful to fill the research gaps in this field to some extent.

1.3. Review of Literature

This section deals with the review of studies conducted on various aspects of tribal development both at the macro level and at the micro level. The studies on implementation and impact of developmental programmes and social change among the Tribal's have been reviewed here to understand the different dimensions of the problem.

Deka, S., Sehgal, M., Idris, M., & Barbora, A. C. (2019) on Impact Assessment of Tribal Sub Plan (TSP) project on socio-economic status of tribal of Tinsukia District, Assam

The present study was conducted in Kakopathar and Margheria blocks of Tinsukia district of Assam. With the interventions of the Tribal Sub Plan (TSP) project during the past 3 years i.e. 2015-16, 2016-17 and 2017-18, a perceptible improvement in the crop productivity has been observed. With the focussed programmes and introduction of new technologies, the way of farming is transforming from subsistence low-input low-output production system to commercialization. Significant difference was found in food security, habitat security, occupational security, educational security and social security in before and after implementation of TSP.

Vishnoi, S., Meena, G. L., Sharma, L., & Burrak, S. S. (2022) on Socio economic status of goat farmers in tribal sub plan area of Rajasthan. The study discusses the socio-economic status of goat farmers in Tribal Sub-Plan (TSP) area of Rajasthan. A total of 160 respondents were selected for present study. The demographic details of the goat rearing farmer reveals that average age of the house hold was varied from 45.92 years in small category to 84.85 years in large category. The family type revealed that 73, 34 and 28 are belongs to joint families for small, medium and large farmers respectively as against of 12, 8 and 5 are belongs to nuclear families for small, medium and large category in the study area. The educational attainment in the study area on average 69 members attained education level as against of 91 illiterate in study area.

Jayalakshmi, V., Chaithanya, B. H., Manjunath, J., Ahammad, S. K., Kamakshi, N., & Devi, S. R. (2022) on Impact of Tribal Sub Plan (TSP) Intervention on Yield and Economics of Chickpea Cultivation in Kurnool District of Andhra Pradesh. The demonstrations conducted with new improved varieties of chickpea were successful in changing farmer's perception and improving knowledge on recommended chickpea farming practices which resulted in higher yields. The beneficiary farmers also gained knowledge on quality seed production and obtained additional income from the quality seed of Nandyal Gram 49 and Nandyal Gram 119 supplied to the neighbouring farmers. Over all the interventions in selected villages improved net returns on account of adoption of new varieties with reduced cost of cultivation.

1.4. Objectives of the Study

1. To analyse the impact of tribal sub-plan on socio-economic condition of tribes.
2. To examine the impact of Tribal Sub-Plan on sustainable livelihood economic security of tribal community.

1.5. Research Methodology

The methodological aspects of the study such as the selection of sample (Villages), sources of data, tools of data collection and analysis are detailed here.



1.5.1. Selection of Sample

Descriptive research design has been selected in the present study. The Gajapati District of Odisha state was selected for the present study. 1612 villages are there in Gajapati district. Among them 10 villages were selected for the present study. Those villages are Bithala, Raiganda, Kutuniganda, Telengapada, Pajigudi, Bayaguda, Anjarsahi, Luhakhunti, Kendu Sahi and Jiranga. Total 214 respondents were selected for purposive sample method in the study. Interview Schedule has been prepared in context of the purpose of the present study. And then the data has been collected from 214 respondents under the study by interview schedule.

1.5.2. Tools to be used in Collection of Data

This study was conducted as an empirical research. An empirical study of this type requires procedures that will reduce bias and increase reliability. An interview schedule was prepared. In order to collect information, from the respondents under the study, at least a well constructed pre-tested interview scheduled will be used as a tool. According to the supplementary technique like observation method, in-depth interview and participation observation will also be arranged to collect the data. For secondary data published books, journals and reports have been reviewed. The collected data was edited, categorized, analyzed and tabulated and findings of the study were derived. These findings are presented in this article.

1.5.3. A Brief Profile of Study Area of Gajapati District

Gajapati District has been named after Maharaja Sri Krushna Chandra Gajapati Narayan Deo, the Ex-Raja Sahib of Paralakhemundi estate (the 1st Prime Minister of Odisha State), who is remembered for his contribution in formation of a separate Odisha province and inclusion of Paralakhemundi estate in Odisha. It got a District status on 2nd October 1992 after bifurcated from Ganjam District. It was Paralakhemundi sub-division in Ganjam and yet it is only sub-division in Gajapati. There are 7 Tahasils, 7 Blocks, 1,612 Villages, 129 Gram Panchayats and 10 Police stations.

Covering an area of 3850 sq km, Gajapati District lies between 180.6' to 190.39' North Latitude and 830.48' to 840.08' East Longitude. Climatic condition in the Gajapati District varies between 16 degree to 40 degree Celsius and the normal rainfall received is 1403.30 mm. The District is surrounded by Andhra Pradesh in its South, Ganjam District in its East, Rayagada in its West and Kandhamal in its North. The soil and climate is suitable for plantation of crops and there is a great potential of horticulture development in the District. More than 60 percent of lands are situated in hilly terrain and high lands. Those are mainly suitable for horticulture. Other cultivable lands are coming under medium lands (20 percent) and low lands (15 percent) category.

Total population of the Gajapati District (2011 census) was 5,77,817 (59.42%) comprising total 2,82, 882 (48.96%) male population and 2,94, 935 (51.04%) female population. Total ST Population is 3,13,714 (54.29) out of this ST male is 1, 51,902 (48.42%) and female is 1, 61,812 (51.58%). Gajapati district has 2nd rank in terms of sex ratio in the state (Male 979, Female 1043) according to census 2011.

1.5.4. Method of Data Collection

The source of data for this includes both primary sources and secondary sources. The secondary sources include the reports of planning commission; Different Tribal Development Reports, Thesis, etc were collected. An Interview Schedule was prepared in order to collect the primary data from the respondents under the study.

1.5.5. Variables

Variables used for this study have been classified as (i).independent and (ii).dependent variables.

i. Independent Variables

All demographic, social, and economic attributes of sample respondents are treated as independent variables,(a) Demographic variables: (1) size of households and (2) Literacy level, (b) Economic Variables: (1) type of house, (2) pattern of land ownership and income, (3) occupational structure, (5) income from other sources

ii. Dependent Variables

The impact of Tribal Sub Plans Schemes on socio-economic conditions is the dependent variables. By impact, we mean the positive changes in income, housing and other aspects of the beneficiaries.

1.5.6. Method of Analysis

The data related to the study were feed into a computer and verified in order to eliminate errors. One way and two-way tabular analysis with appropriate statistics like percentage, column and line bar chart were used in the analysis of data.

1.5.7. Signification of the Study

Social research gives scientific knowledge about the social facts. It scientifically investigates social life and gives scientific explanation of it. This knowledge becomes useful to construct the theory of social life and to solve the problems of practical life. In this context this research elaborates authentic data of the social-economic background of tribal people and gives scientific insight. Through this, society will get the new knowledge about tribal people and the present knowledge will increase. This study gives concrete fact about the background of Tribal Sub Plan Schemes, its impact on tribal people and social change came in their life due



to it. The conclusions of this present study also offers clues how those problems and challenges can be solved and how the modification can be made in the policies and programmes to make Tribal Sub Plan Schemes more applicable and fruitful.

2. RESULT, DISCUSSION AND FINDINGS

2.1. General information of the respondent

Table No.1

Background Characteristics	Sample Size (i.e., 214)	%
Respondent		
Male	172	80.37
Female	42	19.63
Sub-Tribe		
Kandha	130	60.75
Saura/Sabara	84	39.25
Religion		
Christian	196	91.59
Hindu	18	8.41

Source: Primary Survey Data

The table no. 1 shows the demographic and socio-economic characteristics of the respondents stratified by different aspects. From the above table no.1 it was seen out of 214 respondents all respondents are shown their interest for response on questionnaire. The sample was organised into respondent, STs, Sub-Tribes and religion background. The above table shows out of 214 respondents i.e. 80.37% are male and 19.63% are female. It was found that categorically in Sub-Tribe 60.75% are the Kandhas and 39.25% are Soura/Sabara. Similarly, out of 214 respondents 91.59 % are Christians and only 8.41 % are the Hindu community tribes.

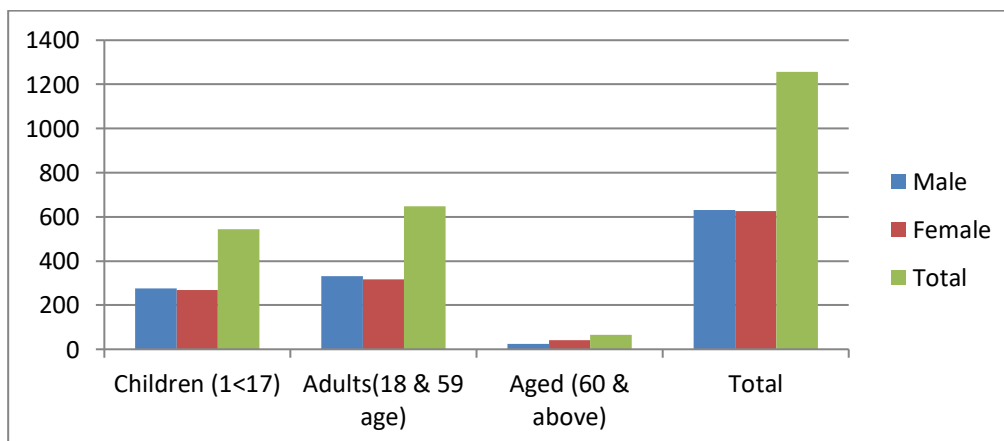
2.2. Family Size

Table No.2

Number of family members	Male	Female	Total	% of total
Children (1<17)	275	268	543	43.23
Adults(18 & 59 age)	331	317	648	51.59
Aged (60 & above)	24	41	65	5.18
Total	630	626	1256	

Source: Primary Survey Data

From the above table shows that the age group of the family i.e., 1-17 years children's is 43.23%. The age group of 18 to 59 i.e., adults are 51.59% which is the highest percentage in the family size. More than 60 years or aged peoples are only 5.18%.





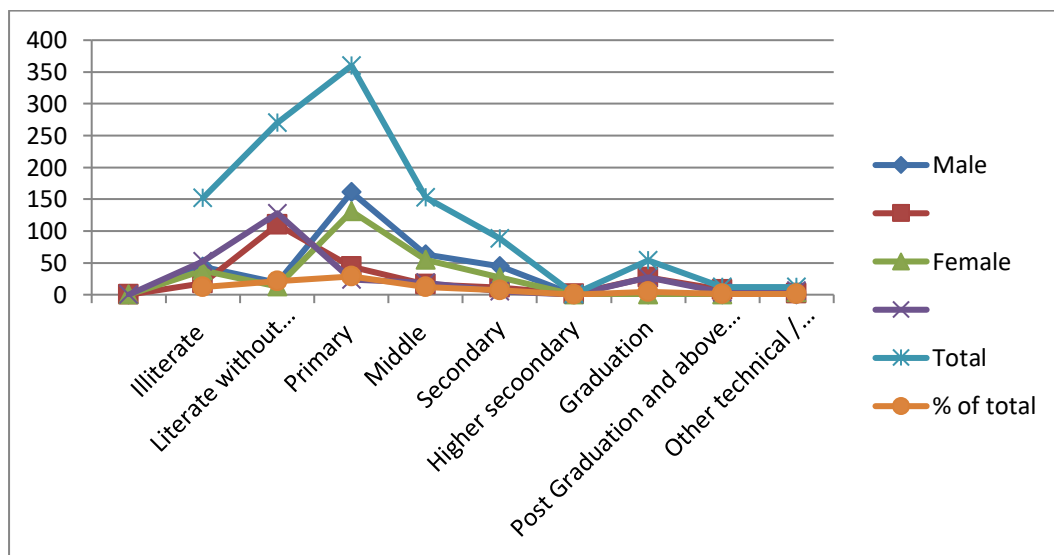
2.3. Educational Status of the Family

Table No.3

Educational Level	Male		Female		Total	% of total
	Children	Adults	Children	Adults		
Illiterate	44	18	38	52	152	12.10
Literate without educational level	19	110	13	128	270	21.50
Primary	161	44	131	24	360	28.66
Middle	63	16	55	19	153	12.18
Secondary	45	11	27	5	88	7.01
Higher Secondary	0	1	0	0	1	0.08
Graduation	0	27	0	27	54	4.30
Post Graduation and above (PG/M.Phil., Ph.D.)	0	8	0	4	12	0.96
Other technical/ Professional qualification	0	2	4	6	12	0.96

Source: Primary Survey Data

From the table no. 2 shows that educational status of the family members from illiterate to highest academic degree and professional degrees. It was seen that only 12.10% peoples are illiterate in the study area. Literate without educational level i.e., those who are able to do only signature is 21.50%. The study found that only 28.50% is the primary educational level. Middle education is 12.18% and secondary educational is only 7.01 %. Higher secondary education is very less which is lowest of the study area and it is only 0.08 %. Graduation level of education is very poor in this study area which shows only 4.30 %. Post graduation and above (PG/M.Phil./Ph.D.) level of education is only 0.96 % and other which is technical and professional education is only 0.96 which is also same as post graduation and above level of education. The study found that educational level of study area is very poor from primary to university level education.





2.4. Socio-economic condition of the households

Table No. 4

Background characteristics	Sample	%
House		
Owned	214	100.00
Rental	0	0.00
Pucca	38	17.76
Kachha	87	40.65
Semi-Pucca	89	41.59
Construction by		
by him	177	82.71
by govt.	37	17.29
No. of rooms		
Rooms<4	156	72.90
Rooms >4	58	27.10
Electric Connection		
Yes	206	96.26
No	8	3.74
Medium of lighting		
Kerosene	8	3.74
Electricity	206	96.26
Drinking Water facility		
Yes	80	37.38
No	134	62.62
Tap water	109	50.93
Hand Pump	105	49.07
Distance from source of Water		
100 or <100	81	37.85
>100	133	62.15
Medium of Cooking		
Gas	2	0.93
Fuel wood	153	71.50
others	18	8.41
Both Gas & Fuel wood	41	19.16
Toilet facility in the house		
Yes	77	35.98
No	137	64.02
Furniture and fixture		
Yes	65	30.37
No	149	69.63
Chair/Table/Cots/T.V./Fridge/ Radio/Gas	11	5.14
Chair/Table/Cots/T.V.	26	12.15
Chair/Table/T.V./Gas	15	7.01
Chair/Table/Cots/T.V./Gas	4	1.87
Chair/Gas/Fridge	7	3.27
Mobile Phones		



Yes	167	78.04
No	47	21.96
Total no of Phone in a Family		
More than 6	3	1.40
5 or Below	164	76.64
Android/Smart phone	123	57.48
Normal Phone	91	42.52
Own vehicles		
Yes	131	61.21
No	83	38.79
Type of Vehicles		
Cycle	19	8.88
Motor Cycle	57	26.64
Cycle, Scooty & Motor Cycle	2	0.93
Cycle & Motor Cycle	53	24.77
Possess a Ration Card		
Yes	201	93.93
No	13	6.07
Possess a BPL Card		
Yes	146	68.22
No	68	31.78

Source: Primary Survey Data

From the above table socio-economic condition of the households reveals that all households are residing own their built houses i.e., 100 % households are staying own houses. No is residing in the rental houses. Out of 214 households i.e. Pucca , Kachha and Semi-Pucca houses are respectively 17.76 %, 40.65 % and 41.59 %. It shows that semi-pucca houses are highest number of in study area. Semi-pucca houses are built by both mud and tin or asbestos. It reveals that the houses are built by householders own cost is 82.71 % and government assistance is 17.29 % i.e., Indira Awas Yojana, Mo Kudia Yojana and Pradhan Mantri Awas Yojana etc. Study found that 72.90 % houses are less than 4 rooms and only 27.10 % houses are more than 4 rooms.

The study reveals that electrification in houses is 96.26 % and 3.74 % don't have connection. For the medium of lighting 3.74% households are using kerosene for lighting.

It was seen that only 37.38 % houses are drinking water facilities and don't have 62.62 %. The study shows that 50.93 % and 49.07 % households are using Tap water and Hand pump water respectively for their daily life. The householders distance from source of water is more than 100mtrs is 62.15 % and less than 100mtrs is 37.85 %.

The study reveals that only 0.93% households are using gas for cooking. 71.50 %, 8.41 % and 19.16 % households are using respectively fuel wood, others like cow dungs , straw and both gas and fuel wood for cooking.

It was seen that toilet don't have facilities in the houses is 64.02 % and only 35.98 % have toilet facilities in their houses. From the study there are 69.63 & households don't have any furniture and fixtures like chair, table cots, TV, radio, gas and fridge etc. and only 30. 37 % households have furniture and fixtures. From the study 78.04 % households have mobile phones and 21.96 % households don't have mobile phones. Only 1.40 % of households are more than 6 numbers of mobile phones and 76.64 % households are below 5 numbers of mobile phones. The using of smart/ android phones are 57.48 % and only 42.52 % is normal phone.

Above study found that 61.21 % households are own vehicles and 38.79 % households don't have any vehicles. 8.88 %, 26.64 %, 0.93 % and 24.77 % of households are cycles; motor cycles; cycle, scooty and motor cycles and cycle & motor cycles are using respectively for their daily transportation. Above study found that 93.93 % households are ration card and don't have only 6.07 % households. BPL card also have 68.22 % households and only 31.78 % households are no BPL cards.



2.5. Occupation

Table No. 5

Main Occupation of the Family	Sample	%
Agriculture	115	53.74
Agriculture, Agri. labour & Forest Labour	37	17.29
Agriculture, Agri. labour, Forest Labour & animal husbandry	1	0.47
Agriculture, Agri. labour, Forest Labour, animal husbandry & Migration	1	0.47
Agri. labour	19	8.88
Agriculture & Agri. labour	14	6.54
Agriculture, Agri. labour, Forest Labour, animal husbandry & Service	24	11.21
Service	3	1.40
Monthly income from different agriculture & different sources		
Rs. 1000-2000	120	56.07
Rs. 2500-4000	59	27.57
Rs. 5000-10000	32	14.95
More than 10000	3	1.40

Source: Primary Survey Data

From the above data clearly reveals that main occupation of the families. The study 53.74 % households are depending agriculture as main occupation of the family. 17.29 % households depend on agriculture, agriculture labour and forest labour is the main occupation. Only, 0.47 % is doing agriculture, agriculture labour, forest labour and animal husbandry activities. Above study reveals that only 0.47 % households are depends on agriculture, agriculture labour, forest labour and migration for their occupation. Only 8.88 % of the households are depending on the agriculture labour as an occupation. Both agriculture and agriculture labour is the main occupation of the family is 6.54 %. It reveals also 11.21 % households are depending on agriculture, agriculture labour, animal husbandry and service as an occupation. Only few families i.e., 1.40 % are depending service is their main occupation.

From the above data, it shows that the monthly income of the agriculture and different sources. Only 56.07 % of the household monthly income is one thousand to two thousand. 2500 to 4000 monthly income is 27.57 % and 5000 to 10000 is 14.95 %. Only 1.40% of the familie's monthly income is above 10000.

2.6. About land information and crop production

Table No.6

Background Characteristics	Sample	%
Have a own agriculture land		
Yes	188	87.85
No	26	12.15
Less than 5 acr.	158	73.83
5 or More than 5 acr.	21	9.81
Don't have	35	16.36
Crop sown in own agriculture land		
Paddy	6	2.80
Maize	0	0.00
Cashew nut	4	1.87
Paddy & Maize	61	28.50



Paddy and Cashew nut	16	7.48
Paddy, Maize, Cashew nut	96	44.86
Using pesticides and fertilisers		
Yes	164	76.64
No	50	23.36
Using compost	26	12.15
both Compost and chemical fertilisers	118	55.14
Using fertilisers	20	9.35
not using any of above	50	23.36
Less than 200kg	54	25.23
200 or More than 200 kg	130	60.75
Using agriculture equipment		
Bullocks	175	81.78
Bullocks, Pesticide, Pump	39	18.22
Quantity of crop produces from the own land		
300 or below 300 kg	57	26.64
More than 300 kg	138	64.49
Using of income from the such production		
Family consumption	213	99.53
Selling of such agri. Production	1	0.47
Local market	65	30.37
Village haat	6	2.80
Important income source of the family		
Paddy	54	25.23
Maize	1	0.47
Cashew nut	27	12.62
Paddy, Maize, Cashew nut	59	27.57
Maize, Cashew nut	1	0.47
Paddy, Cashew nut	60	28.04
Paddy, Maize	12	5.61
Annual Income from the agriculture source		
Below Rs. 100000	63	29.44
Rs. 100000 or above	10	4.67
Problem of selling agriculture production		
Yes	214	100.00
No	0	0.00
Market price	133	62.15
Transport, market price, grading, weight, storage	1	0.47
Transport, market price	80	37.38

Source: Primary survey data

The table no.6 reveals that the land information of household. It was seen that 87.85 % of households are own agricultural land and only 12.15 % of families don't have land. It shows that 73.83 %, 9.81 % and 16.36 % of households are less than 5 acre, more than 5 acre and no agriculture land respectively. Crops sown in the own agricultural land is also most important for households. 2.80 % of families are sown only paddy own their agricultural land but no one are interested to sown only maize. Cashew nut and paddy & maize sown respectively 1.87 % and 28.50 % of households own their agricultural land. 7.48 % of the households are sown paddy and cashew nut. It reveals that the highest amount of agriculture land is using for Paddy, Maize and cashew nut. 44.86 % of the families are sown paddy, maize and cashew nut.



Most of the families are using fertilisers and pesticides in agriculture. 76.64 % of farmers are using fertilisers where as only 23.36 % are not using. Using compost is 12.15 %. Both compost and chemical fertilisers are using only 55.14 %. It shows that 23.36 % and 25.23 % of households are respectively using only fertilisers and not using either chemical fertilisers or compost. Using of fertilisers are less than 200 kg and more than 200 kg respectively 25.23 % and 60.75 %.

Study shows that using of agriculture equipment as bullocks is 81.78 %. It clearly indicates that the traditional process of agricultural farming. Bullocks, pesticides and pumps are using 18.22 % of households. 26.64 % families are produces less than 300kgs crops from their own agricultural land and more than 300 kgs crops are produces only 64.49 %. It shows that 99.53 % families are using such production as family consumption and only few households are selling after surplus of family consumption of agriculture production is 0.47 %. For selling process market is the major problem of farmers. 30.37 % 2.80 % of the producers selling their agriculture product in the local market and village haat respectively.

Important income source of the family is agriculture. Study shows that 25.23% and 0.47 % of household's major income source is paddy and maize respectively. Categorically it reveals that Paddy, maize & cashew nut; maize, cashew nut; paddy, cashew nut and paddy, maize as major income source of the families are respectively 27.57 %, 0.47 %, 28.04 % and 5.61 %.

Study found that 29.44 % and 4.67 % of the households annual income from the agriculture source is less than 100000 and more than 1 lakh respectively their annual income. 100 % respondents are agreed with the market problem for their selling of production. Market price is the one of the major problem and 62.15 % families are facing such type of problem. Farmers are not getting their Minimum Support Price (MSP) as their agriculture production.

2.7. Forest Produce and other sources of income

Table No. 7

Background	Sample	%
Engaged in collection of forest produce		
Yes	189	88.32
No	25	11.68
Animal Husbandry/Dairying		
Connected with animal husbandry		
Yes	190	88.79
No	24	11.21
Savings of the income		
Yes	113	52.80
No	101	47.20
Purpose of saving		
Children Education	75	35.05
Retirement	38	17.76
Social events	1	0.47
Reason of the not saving		
Not enough earning	58	27.10
Shortfall in running of household	156	72.90

Source: Primary survey data

Above study reveals that the tribal peoples are engaged in collection of forest produce and most of the tribal families are depends on forest produce which is major income source of the family. It was seen that 88.32 % of the households are engaged in the collection of forest produce in the whole year and 11.68 % are not engaged in the collection of forest produce. 88.79 % of families are connected with the animal husbandry and only few families i.e., 11.21 % are not connected. From the forest produce and animal husbandry many households are saving for the future. Only 52.80 % of the families are saving their income after consumption but other are i.e., 47.20 families are not saving from their income. The purpose of saving is the different way of different families. It shows that 35.05 % of the families are saving their income for children's education. 17.76 % and 0.47 % of families are saving their income for the purpose of retirement consumption and for social ceremonies respectively. Due to different causes many families are not interest to save their income. The reason behind to not saving is not enough earning and the families not earning to enough is 27.10 % and 72.90 % of the households are not saving due to shortfall in family consumption.



3. POLICY RECOMMENDATIONS

The institutional framework for the implementation of the tribal development programmes at the grassroots level needs to be strengthened suitably equipped in terms of wider responsibilities, accountability to people and transparency in functioning. This framework must consist of the Panchayati Raj Institutions, institutional credit agencies and nongovernmental development agencies. In addition to the present strategies, there is a need for adopting a holistic approach to tribal development aimed at comprehensive development of the area as a whole with a focus on the development of infrastructural facilities.

4. CONCLUSION

The findings reveals that many tribal sub-plans are formulated after fifth five year plan and still now tribal peoples are not developed in various sectors like education, socially, economically etc. The level of education system is very poor in the study area. Primary level to university level there is very less percentage of literate. Monthly income of the households is very less. Selling of agriculture production are also one of the major problem. Farmers are not getting their minimum support price. Transport facilities are not available. All are engaged in agriculture production. Paddy, maize and cashew nut are major income source of the households. Findings also suggests that proper implementation of different tribal sub-plan must regulate and execute by the authorities and formulate the rules and regulation towards non-diversification of different schemes of tribal's to others.

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E-RETAILING IN INDIA: AN ANALYSIS OF KEY SUCCESS FACTORS AND FUTURE PROSPECTS.

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ABSTRACT

The development of e-retailing has changed the retail environment in India, giving customers more convenience and access to a bigger selection of goods. In India, the use of mobile devices, rising internet penetration, and the availability of inexpensive data plans have all contributed to the expansion of e-retailing. Due to the shutdown of physical establishments and government-imposed lockdowns, the COVID-19 epidemic has further accelerated the expansion of e-retailing in India. As a result, more and more people are choosing to shop online. However, the expansion of e-retailing has also brought with it several difficulties, such as the effect on conventional brick-and-mortar merchants, worries about data privacy, and the requirement for a strong logistics and supply chain infrastructure. This paper explores the effects of COVID-19 on the industry and provides a summary of the development of e-retailing in India, highlighting its primary drivers and obstacles. The prospects for e-retailing in India are also covered in the paper, along with the consequences for the retail sector and the Indian economy as a whole.

KEYWORDS: E-commerce, Internet, Retail, Covid-19, E-Shops, Online Marketing.

1. INTRODUCTION

The online purchasing and selling of goods and services are referred to as e-retailing, sometimes known as electronic retailing or e-commerce. E-retailing offers ease and accessibility by enabling customers to shop whenever they want, from any location. The retail sector has undergone a revolution thanks to e-retailing, which has also changed how customers shop and given businesses new options. E-retailing has grown in popularity as a result of the expansion of the Internet and mobile technology, and this trend is anticipated to continue.

Retailing is the act of selling goods and services to customers for their personal use. Retailing is the final step in the distribution process and can occur via various channels, including traditional stores, online marketplaces, and mobile applications. Retailers purchase merchandise from wholesalers or manufacturers and mark it up before selling it to customers. Retailing can be done by businesses of all sizes, from small neighbourhood shops to massive global conglomerates. Retailing has changed to e-retailing, primarily due to the rapid adoption of technology and the increasing prevalence of the internet and mobile devices. E-retailing provides consumers with the convenience of shopping from anywhere at any time and access to a wider range of products. E-retailers can offer products at competitive prices due to lower overhead costs and can reach a broader customer base through their online presence.

Electronic retailing (E-tailing) is the sale of goods and services through the Internet. E-tailing can include business-to-business (B2B) and business-to-consumer (B2C) sales of products and services. (*Electronic Retailing (e-Tailing)*, n.d.)

2. TYPES OF ELECTRONIC RETAILING (E-TAILING)

There are two types of E-Retailing

B2C (Business - to - Consumer) E-Tailing

Business-to-consumer retailing is the most common type of e-commerce Company and is familiar to the majority of Internet users. This category of retailers includes businesses that sell finished goods or products to consumers directly through their websites. The products could be shipped and delivered directly from the manufacturer or the company's warehouse. Maintaining good customer relations is one of the most important requirements for a successful B2C retailer.

B2B (Business - to - Business) E-Tailing

Businesses that sell to other businesses are involved in business-to-business retailing. Consultants, software developers, freelancers, and wholesalers are examples of such retailers. Wholesalers sell their products in bulk to businesses from their manufacturing plants. These companies, in turn, sell the products to customers. In other words, a B2B firm, such as a wholesaler, may sell products to a B2C firm. (*What Is E-Retailing?* n.d.)

E-Retailing in India (Past, Present, Future)

E-commerce has changed the retail landscape in India, giving customers more convenience and access to a wider range of products. Large players such as Amazon, Flipkart, and Reliance dominate the Indian e-commerce industry, but numerous smaller players cater to niche markets. E-retailers sell a wide range of products, including electronics, clothing, and household goods, and they frequently offer attractive discounts and deals to entice customers. Due to the closure of physical



stores and government-imposed lockdowns, the COVID-19 pandemic has accelerated the growth of e-commerce in India, with consumers increasingly turning to online shopping. India's retail sector is dominated by small mom-and-pop stores. Indian retail one of the fastest growing markets in the world due to Economic growth. Wholesale and retail trade are important components of India's economy. The online retail market in India is estimated to be 25% of the total organised retail market, with a 37% growth rate predicted by 2030. In 2020, India had the third-largest online shopper base, trailing only China and the United States. The Indian e-retail industry is expected to exceed 300-350 million shoppers over the next five years, propelling the online Gross Merchandise Value (GMV) to US\$ 100-120 billion by 2025.

The retail industry reached US\$ 950 billion in 2018 at a CAGR of 13 per cent and is expected to reach US\$ 1.1 trillion by 2020. Retail industry reached to US\$ 950 billion in 2018 at CAGR of 13 percent and expected to reach US\$ 1.1 trillion by 2020. India is the world's fifth largest global destination in the retail space. (Retail-March-2020.Pdf, n.d.)

Increasing participation from foreign and private players to boost retail infrastructure.

Online retail sales are forecasted to grow at the rate of 31 per cent year-on-year to reach US\$ 32.70 billion in 2018.

Amazon, Flipkart, and Paytm are the leading companies in the Indian e-commerce scene. With over 60% of the market share held by Amazon and Flipkart, these businesses dominate the industry. With more than 70% of transactions occurring on mobile devices, India's e-commerce business is significantly tilted towards mobile commerce.

Growth Prospects

In the upcoming years, India's e-commerce business is anticipated to expand quickly due to the country's expanding middle class, rising disposable income, and a shift towards online purchasing. In India, there will be 329 million e-commerce consumers by 2025, up from 190 million in 2020, according to research by eMarketer.

Revenue generated from online retail is projected to grow to US\$ 60 billion by 2020

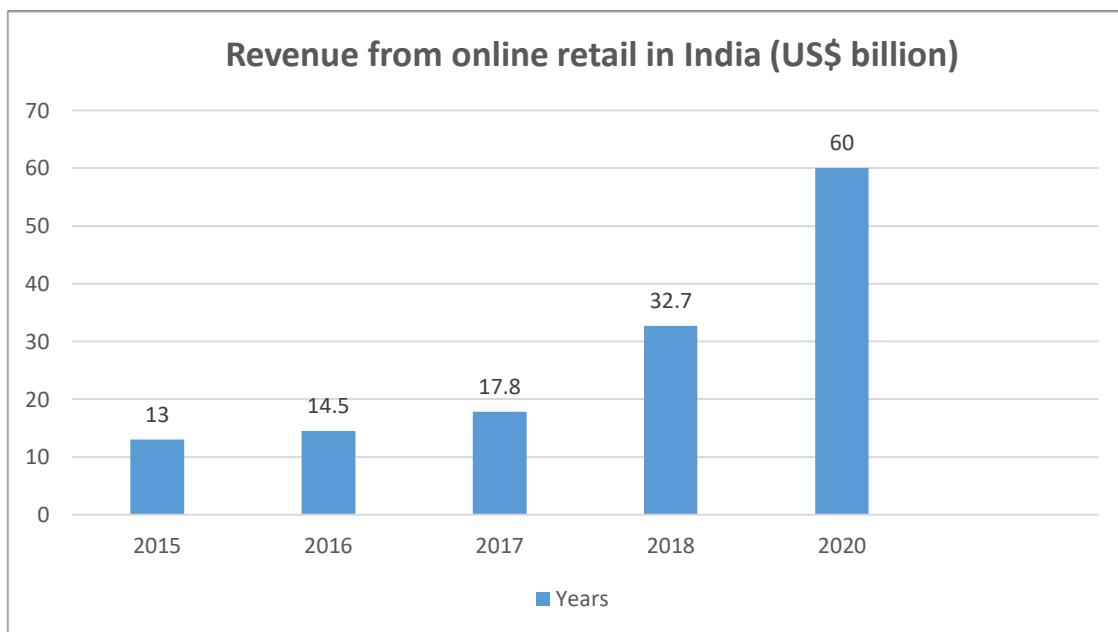


Figure 1: Revenue from online retail in India (US\$ billion)
 Source: <https://www.ibef.org/download/Retail-March-2020>

E-commerce in India has grown at an exponential rate in recent years, with a CAGR of 28% from 2015 to 2020. According to an IBEF report, the Indian e-commerce market is expected to grow to USD 200 billion by 2026, up from USD 38.5 billion in 2017. (E-Commerce in India, n.d.)

The Indian e-commerce sector is expected to reach \$50 billion by 2022, up from over \$40 billion in 2021. The Indian e-commerce sector is expected to grow to \$150-\$170 billion by 2027. This predicts yearly growth of 25%-30% and market penetration of 9%-10% over the next five years (How India Shops Online 2022, 2022). Strong underlying factors are what

underpin this secular growth: a sizable customer base with rising incomes, albeit from present low levels; expanding Internet and smartphone adoption; and inexpensive shipping costs.

There will be a shift in the balance of online shopping categories. Fashion, general merchandise, and groceries will increase disproportionately and make up two thirds of the e-retail industry since they have the biggest penetration headroom compared to mature e-retail markets.

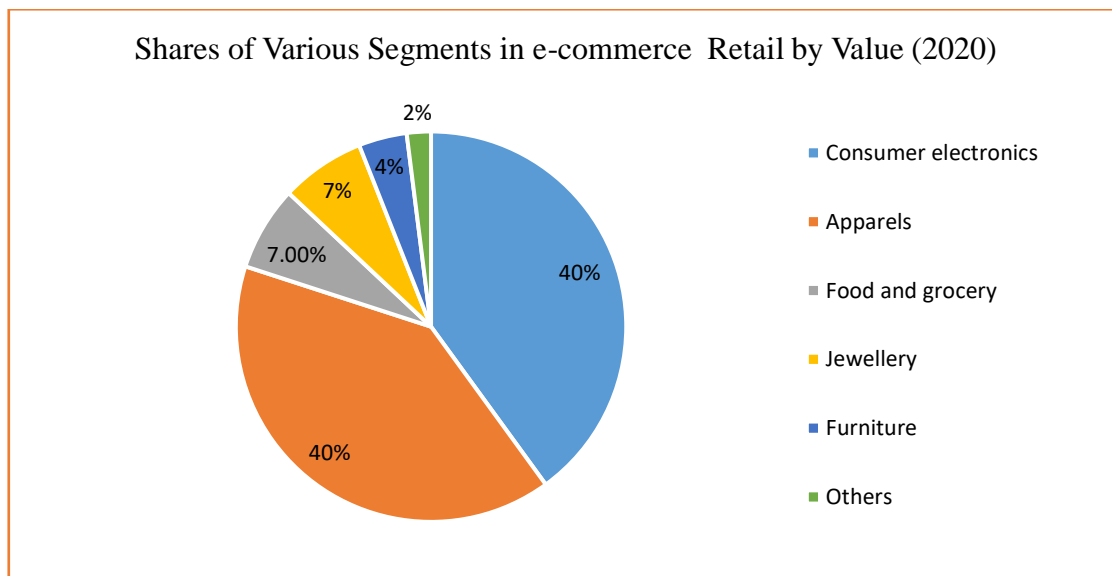


Figure 2: Share of Various Segments in Indian E-Commerce Retail by Value.

Data from India Brand Equity Foundation. Retrieved from <https://www.ibef.org/download/E-Commerce-March-2020.pdf>

India's e-retail customer base increased by 40–50 million customers just in 2021, bringing the total to 180–190 million. About 60% of these consumers are from tier-3 or smaller cities. Gen Z (18 to 25 years old), a new generation of digital natives, has begun conducting business. Shopper addition will continue to be at the heart of future e-retail growth. India's online shopper base is estimated to increase to 400–450 million by 2027. (*Bain_digest_how_india_shops_online_2022.Pdf*, n.d.)

The existing shopper base is simultaneously maturing. Overall engagement on retail platforms is increasing. The percentage of daily active users to monthly active users has risen to more than 25% in 2021, from 18% to 20% in 2019. Consumers now spend 20% more time per month on a retail platform, vs. last year.

The e-commerce business in India is expected to grow significantly in the future years, driven by factors such as rising internet penetration, rising disposable incomes, and shifting consumer tastes. Demand for e-commerce in India has surged, prompting increasing expenditures in logistics, warehousing, and last-mile delivery. Furthermore, the Indian government's emphasis on supporting digital transactions and developing a healthy e-commerce ecosystem is projected to accelerate the expansion of the e-commerce business. As more Indian consumers adopt online buying, the future of e-commerce in India is bright.

Key factors contributing to the growth of e-retailing in India during Covid-19

1. Increasing Internet penetration

Internet penetration in India has grown significantly in recent years, driven by the increasing availability of affordable smartphones and data plans.

There were 692.0 million internet users in India in January 2023. India's internet penetration rate stood at 48.7 per cent of the total population at the start of 2023. (*Digital 2023, 2023*)

The increasing internet penetration in India has provided e-retailers with a large customer base to tap into. E-commerce companies have responded by developing mobile-friendly platforms and apps.

The Indian government has also launched several initiatives to increase internet penetration in the country, including the 2015 Digital India campaign. The government has attempted to expand digital infrastructure in rural areas, provide digital literacy training, and encourage the use of digital services through this initiative.

2. Cashless transactions

E-retailers have encouraged cashless transactions to reduce the risk of virus transmission through physical currency. This has accelerated the adoption of digital payments among consumers, which is expected to continue even after the pandemic. Cashless transactions have become increasingly popular in India over the past few years, thanks to the government's push towards a digital economy and the growing adoption of digital payment methods by businesses and consumers. Due to the concerted efforts of the entire government and all interested stakeholders, the number of digital payment transactions has greatly increased, rising from 2,071 crore in FY 2017–18 to 8,840 crore in FY 2021–22. As the nation's favourite method of payment, BHIM UPI conducted 803.6 billion digital payment transactions worth ₹ 12.98 lakh crore in January 2023. (*Digital Transactions in India*, n.d.)

3. Lock-down by the Government

The Indian lockdown significantly affected the e-retailing market, presenting opportunities and difficulties for enterprises. Consumers went to online retailers for their purchasing needs as a result of physical stores closing and the need to reduce personal touch, which increased demand for online shopping. The adoption of digital payment systems was also expedited by this trend, which benefited e-retailers who were already



prepared to accept digital payments. To adapt to the shifting demands and preferences of customers during the pandemic, e-retailers likewise increased the size of their delivery networks and varied the products they offered. Because of this, several Indian e-retailers saw tremendous growth during the lockdown, and the trend towards online purchasing is likely to continue even after the pandemic passes.

4. Shift towards digital marketing

E-retailers have increased their focus on digital marketing during the pandemic, as traditional marketing channels such as billboards and print media have become less effective. This has led to a more targeted approach to marketing, which has helped e-retailers reach their desired audience. Digital marketing enables e-retailers to reach a larger audience than traditional marketing methods. With the use of social media platforms, email marketing, and paid advertising, e-retailers can target a specific audience and get their products in front of potential customers who might not have known about their brand otherwise. Digital marketing is more cost-effective than traditional marketing methods. E-retailers can save money by not having to print flyers, posters, or pay for TV or radio ads.

5. Rise In Smart phone Users in India

India has experienced a remarkable rise in smartphone users in recent years. According to Ministry of Information and Broadcasting secretary Apurva Chandra on Wednesday said that India has over 1.2 billion mobile phone users and 600 million smart phone users. Along with very low data rates, this penetration of smart phones has resulted in users consuming high amount of information and entertainment via mobile devices (Anand, 2022). This rise in smartphone users has also led to a surge in demand for digital services such as e-commerce, mobile banking, and digital payments, making these services more accessible and convenient for a larger segment of the Indian population.

6. Rise in hyperlocal e-retailers

The pandemic has led to the emergence of hyperlocal e-retailers, which cater to specific regions or cities. These hyperlocal e-retailers have been able to offer faster delivery times and better customer service, which has contributed to their growth. Hyperlocal e-retailers are online retailers that focus on delivering goods and services within a small geographical area, typically a city or a neighbourhood.

7. Increase in consumer trust

E-retailers have taken steps to improve customer trust, including offering easy returns and refunds, improving customer service, and providing detailed product information. This has led to increased trust among consumers, which has contributed to the growth of e-retailing in India.

Challenges and Barriers

E-retailing has also brought challenges, including the need for a robust logistics and supply chain infrastructure, data privacy and security concerns, and the impact on traditional brick-and-mortar retailers. Many traditional retailers have been forced to adapt to the changing retail landscape by establishing an online

presence or partnering with e-retailers to remain competitive. Overall, the shift from traditional retailing to e-retailing has been driven by changes in consumer behaviour and the adoption of technology. The COVID-19 pandemic has further accelerated this shift, with consumers increasingly relying on e-retailers for their shopping needs due to the closure of physical stores and government-imposed lockdowns. E-retailing is expected to continue growing in India, and the retail industry will need to adapt to this changing landscape to remain competitive.

E-retailing has also introduced difficulties, such as the requirement for a strong infrastructure for transportation and supply chains, worries about data privacy and security, and effects on conventional brick-and-mortar merchants. To stay competitive, many conventional shops have been obliged to adjust to the evolving retail environment by creating an online presence or collaborating with e-retailers.

Overall, alterations in customer behaviour and the use of technology have been the driving forces behind the transition from traditional retailing to e-retailing. Due to the shutdown of physical stores and government-ordered lockdowns, the COVID-19 epidemic has further hastened this change, with customers turning more and more to online retailers for their buying needs. In India, e-retailing is anticipated to continue expanding, and the retail sector will need to change to keep up with this evolving environment.

CONCLUSION

India's e-retailing growth has been nothing short of extraordinary. E-retailing has integrated itself into India's retail scene as a result of the increase of digital payments, the ubiquity of the internet and smartphones, and the accessibility of reasonably priced gadgets. With more and more people flocking to online purchasing for their daily requirements, the pandemic has hastened the rise of e-retailing. With the ability to offer customers quicker and more individualised services, hyperlocal e-retailers have also aided in this rise. The e-retailing sector is anticipated to experience ongoing development, innovation, and transformation as India's digital economy develops. This will present exciting prospects for both consumers and enterprises. The growth of e-retailing in India has also been driven by the increasing availability of logistics and supply chain infrastructure. E-commerce companies have invested heavily in building their logistics networks and partnerships with local delivery partners, allowing them to reach more customers and deliver products faster and more efficiently. This has helped overcome some of the logistical challenges faced by e-retailers in a country as vast and diverse as India.

However, despite the many benefits of e-retailing, there are still some challenges that need to be addressed. These include the need to improve cybersecurity and data protection, address the issue of counterfeit products, and ensure compliance with regulatory frameworks.



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THE INFLUENCE OF WORK ETHICS ON JOB PERFORMANCE OF EMPLOYEES IN LOCAL GOVERNMENT UNITS (LGUs) IN SELECTED MUNICIPALITIES OF DISTRICT IV PROVINCE OF LAGUNA

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ABSTRACT

This study aimed to determine the influence of work ethics on job performance of employees in local government units (LGUs) in selected municipalities of District IV, Province of Laguna. A total of 203 employees from different LGUs were surveyed using a self-administered questionnaire. The study utilized a descriptive-correlational research design and statistical tools such as mean, standard deviation, One Way ANOVA and Pearson's correlation coefficient were used to analyze the data gathered.

Results showed that the level of work ethics among employees in LGUs was verbally interpreted as very influential in terms of responsiveness to the public, nationalism and patriotism, commitment to democracy, and simple living. On the other hand, the relationship between the employees' profile and their work ethics was found to be insignificant.

Furthermore, the study revealed a significant positive relationship between work ethics and job performance. The results imply that employees with high work ethics tend to have better job performance. Based on the findings, the study recommends that local government units should conduct regular trainings and workshops for employees to enhance their work ethics and to improve job performance. This study provides valuable insights for LGUs in improving the performance of their employees through the development of their work ethics.

KEYWORDS: LGUs, Job Performance, Work Ethics, Government Employees, R.A. 6713

INTRODUCTION

In today's fast-paced world, the quality of public service delivery in Local Government Units (LGUs) is of paramount importance. Employees play a crucial role in ensuring that such services are provided efficiently and effectively. The study aims to investigate the influence of work ethics on job performance among LGU employees in selected municipalities of District IV Province of Laguna.

Ethics and accountability are keys not only to effective government but also to effective governance. And since the public employees of local governments units are closer to the people they serve, they are in a better location to perceive the preferences of their communities and respond to their needs. However, LGU's are unable to respond fully and are pulled down by procedural, resource and governance constraints and most importantly, ethics and accountability issues. These problems may include those that could cause the leader to lose control of the situation due to corruption, graft, and poor management. Hence, to be able to address the aforementioned issue, this study will aim to assess the influence of work ethics and job performance of public employees using the norms of conduct mandated in RA 6713 at all times and their duties is therefore of paramount interest to the researcher.

Performance is the way a worker acts or does anything, Campbell (2015) agreed that the definition of work performance must take organizational objectives into account and contrast job incumbent behavior with results. In their attempts to define individual work performance, Viswesvaran and Ones (2011), Koopmans, Bernards, Hildebrandt, Schaufeli,

De Vet & Van Der Beek (2011), and others discovered that it is linked to work behaviors that are relevant to organizational goals and are under the control of the individual job holder. However, the drive to perform excellently well has made a lot of job incumbents to be solely interested in the results and not minding how it is achieved, 'unfair you will say' but the truth is that colleagues who are well known unethical practices are reaping the dividend without check. Those individuals and organizations that are not ready to follow these unethical ways often face the difficulty of meeting up with targets in a timely manner. Against this backdrop, lots of arguments have been raised on what sorts of work ethical behavior is expected of employees in the world of work to keep to the expected job performance. Research evidences have shown that strong work ethics contribute to good job performance while poor or low performance result from weak or negligence of work ethics (Linz & Chu, 2012).

Work ethics, defined as the principles and values that guide an individual's work behavior, are believed to play a crucial role in employee job performance. The research seeks to identify the most influential work ethics among LGU employees and explore how they impact job performance. Through the findings of this study, the researchers hope to provide valuable insights and recommendations to improve the overall quality of public service delivery in LGUs.

In addition, the findings of this study will be beneficial to LGUs in improving their services and enhancing the job performance of their employees. It will also contribute to the body of knowledge on work ethics and job performance in the



context of LGUs. Overall, this study will provide valuable insights into the role of work ethics in shaping the performance of LGU employees and their impact on the community they serve.

MATERIALS AND METHODS

The research design for this study on the determination of the influence of work ethics to job performance of government employees of the selected local government units of the fourth District of Laguna employ the descriptive-correlational method of research. The descriptive method of research used to gather factual information and provide an accurate interpretation of the findings, while the correlational research method will be used to determine the relationship between work ethics and job performance of government employees.

The population for this study is the 203 government employees working in the Santa Cruz, Pila, and Pagsanjan Local Government Units in Laguna. The study used a random sampling technique to ensure representativeness of the population, and questionnaires distributed to the respondents of this study to gather data. The questionnaire consists of two parts, the first part indicates the socioeconomic profile of the

respondents, while the second part is a researcher-made survey instrument based on RA 6713 that used to determine the work ethics of the employees in terms of commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness to the public, nationalism and patriotism, commitment to democracy and simple living.

The likert scale used to measure job performance and work ethics. Questions on performance also a researcher-made survey instrument based on the Evaluation Sheet from the human resource management office. Descriptive analysis using the mean and standard deviation utilized to evaluate the influence of work ethics on job performance of the government employees, while One Way Anova used to determine the difference of the employees work ethics when grouped according to their profile, Pearson correlation coefficient (Pearson r) used to measure the relationship of work ethics to job performance of government employees.

In summary, this study employs a descriptive-correlational research design, use a random sampling technique to ensure representativeness of the population, use questionnaires to gather data, and use descriptive analysis, One Way ANOVA and Pearson correlation coefficient to analyze the data.

RESULTS AND DISCUSSION

Socio-Economic Profile of the Respondents

Table 1. Age

AGE RANGE	FREQUENCY	PERCENTAGE
20 – 30 years old	77	37.93
31 – 40 years old	93	45.81
41 – 50 years old	26	12.81
51 – 60 years old	7	3.45
TOTAL	203	100%

As reflected in the table, 93 out of 203 employees were mostly in the range of 31 – 40 years old or 45.81% of the respondents. And the range 51 – 60 years old or 3.45% of the respondents fall on this age. The employees were mature persons, which means that they were responsible in undertaking

and administering their positions or roles and responsibilities, and as such, were expected to possess the knowledge and ability to comply with the ethical standards of conduct as they become mature.

Table 2. Sex

Sex	Frequency	Percentage
Male	81	39.90%
Female	122	60.10%
TOTAL	203	100%

The findings show that out of the 203 government employees who participated in the research, 122 or 60.10% were female, while 81 or 39.90% were male. This suggests a slightly higher representation of female employees in the

selected local government units in the fourth district of Laguna. The study also references the findings of Carter and Harvey (2011), which suggest that companies led by women tend to perform better.

Table 3. Employment Status

Employment Status	Frequency	Percentage
Casual	12	5.91%
Contractual	26	12.81%
Job Order	64	31.53%
Regular	101	49.75%
TOTAL	203	100%



The findings of Table 3 show that out of the 203 government employees who participated in the research, 101 or 49.75% were regular, followed by job order at 64 or 31.53%, contractual at 26 or 12.81%, and casual at 12 or 5.91%. This

suggests that regular employment is the most common employment status among the government employees in the selected local government units in the fourth district of Laguna.

Table 4. Years of Service

Years Of Service	Frequency	Percentage
1 – 5 years	127	62.56%
6 – 10 years	36	17.73%
11 – 15 years	25	12.32%
16 – 20 years	7	3.45%
21 – 25 years	5	2.46%
26 – 30 years	3	1.48%
TOTAL	203	100%

Table 4 presents the years of service distribution of the employees. As reflected in the table, the majority of the respondents (62.56%) had 1-5 years of service. This implies

that there is a relatively high turnover rate within the LGUs, and there may be a need for strategies to retain employees.

Table 5. Level of Job Performance in terms of Timeliness

Statement	Mean	SD	Verbal Interpretation
1. I managed to plan my work so that I finished it on time.	4.48	0.54	Always
2. I managed my time well.	4.30	0.68	Always
3. I kept in mind the work result I needed to achieve on time.	4.26	0.71	Always
4. I accurately finish the task with the given timeframe.	4.32	0.61	Always
5. I usually have extra time and allotted to another tasks.	4.23	0.65	Always
Overall	4.32	0.64	Always

Overall, the high mean score of 4.32 suggests that timeliness is an important aspect of job performance for the employees in local government units in the selected municipalities of District IV Province of Laguna. This result is supported by the study of Bright (2017) who stated that a high

level of job performance in terms of timeliness means that an employee consistently meets or exceeds their deadlines and completes their tasks on time. This can demonstrate good time management skills, reliability, and a strong work ethic.

Table 6. Level of Job Performance in terms of Creativity and Innovation

Statement	Mean	SD	Verbal Interpretation
1. I am in allowing myself to a problem solving that may lead to decision making.	4.17	0.74	Often
2. I generate a significant number of alternatives to the same problem before I choose the final solution.	4.17	0.69	Often
3. I enjoy finding solutions to complex problems on the tasks assigned to me.	4.18	0.75	Often
4. I always like to have an opportunity to exhibit creativity for the implementation of new ideas.	4.00	0.70	Often
5. I always come up with new and practical ideas to solve problems.	4.07	0.76	Often
Overall	4.12	0.73	Often

Overall, the high mean score suggests that the employees in the local government units in Santa Cruz, Pila and Pagsanjan, Laguna exhibit a strong level of job performance in

terms of creativity and innovation, which is an important aspect of job performance in many jobs.



Table 7. Level of Job Performance in terms of Initiative

Statement	Mean	SD	Verbal Interpretation
1. On my own initiative, I started new task when my old tasks were completed.	4.08	0.66	Often
2. I took on extra responsibilities.	4.10	0.61	Often
3. I usually do the basic task without any orders from my superior.	4.23	0.78	Always
4. I directly do the task without any help from my co-workers/superior.	4.18	0.71	Often
5. I always plan ahead of time based on priority and necessary task.	4.17	0.77	Often
Overall	4.15	0.71	Often

Overall, the high mean score of often revealed that the employees in the local government units in Santa Cruz, Pila and Pagsanjan, Laguna exhibit a strong level of job performance in terms of initiative, which is an important aspect of job performance in many jobs.

This is supported with the study of Campbell (2015) that personal initiative is a part of a behavioral process in which

employees engage because they are motivated to achieve performance goals, including favorable evaluations from supervisors. In the contrary, the study of Karim (2012) said “researchers have begun to observe that initiative does not always contribute to higher performance,” and called for more explanation of when initiative is more versus less successful.

Table 8. Level of Job Performance in terms of Consistency

Statement	Mean	SD	Verbal Interpretation
1. I made sure to meet the client expectations.	4.60	0.60	Always
2. I maintain to provide a proper order in the workplace.	4.28	0.69	Always
3. I always made sure to produce high-quality work or delivery of service.	4.36	0.77	Always
4. I always create a long-term goal that can ensure in achieving the goals in the workplace regularly.	4.35	0.71	Always
5. I always work following instructions from superior to avoid future disruptions.	4.39	0.72	Always
Overall	4.40	0.70	Always

Based on the results in Table 8, it shows that there is a high level of job performance in terms of consistency. The mean score of 4.40 (SD = 0.70) suggests that the employees consistently meet client expectations and maintain proper order in the workplace. The highest mean score of 4.60 (SD = 0.60) indicated that the employees made sure to meet the client

expectations. This suggests that the employees prioritize meeting client needs and expectations. Meanwhile, the lowest mean score of 4.28 (SD = 0.69) indicating that the employees always thinks that there is still room for improvement in maintaining order in the workplace.

Table 9. Level of Job Performance in terms of Transparency

Statement	Mean	SD	Verbal Interpretation
1. I always made sure to provide a necessary information with regards to my work.	4.39	0.64	Always
2. I managed to provide any accomplishments report when it is needed.	4.41	0.64	Always
3. I always ensure that the information is well disseminated.	4.38	0.66	Always
4. I am open to any criticism to improve my performance.	4.51	0.66	Always
5. I ensure that all of my undertakings followed the ethical standard.	4.42	0.70	Always
Overall	4.42	0.66	Always

Table 9 shows the level of job performance in terms of transparency. The employees are open to any criticism to improve their performance which obtained the highest mean score of 4.51 (SD = 0.66). Lastly, the employees always ensure that the information is well disseminated which obtained the lowest mean score of 4.38 (SD = 0.66). The high mean scores indicate that the employees value transparency in their work

and that being open to criticism and ensuring the dissemination of information are important factors that contribute to their job performance. This finding suggests that promoting transparency in the workplace can be an effective strategy for improving job performance and enhancing employee satisfaction in local government units.



Table 10. Level of Work Ethics in terms of Commitment to Public Interest

Statement	Mean	SD	Verbal Interpretation
1. Making the public interest prevail over personal interest.	4.24	0.74	Extremely Influential
2. Observing economy in the use of public resources.	4.07	0.71	Very Influential
3. Upholding public interest over personal gain.	4.14	0.69	Very Influential
4. I always make sure to serve all the clients in my utmost honesty.	4.24	0.65	Extremely Influential
5. I always make sure to take or be open to any suggestions.	4.15	0.68	Very Influential
Overall	4.17	0.69	Very Influential

Table 10 shows that the high mean score of 4.24 (SD = 0.74) revealed that the employees who are related to making public interest prevail over personal interest and serving clients with honesty indicate a strong commitment to public service. Lastly, the lowest mean score of 4.07 (SD = 0.71) indicated that the employees observe economy in the use of public resources. The overall score of 4.17 (SD = 0.69) indicates that the level of work ethics in terms of commitment to public interest is very

influential, which means that it is a significant factor in the job performance of the employees.

From the result above, it suggests that public employees are expected to do what is considered best for society. This encompasses a commitment to public values like fairness, honesty, accountability, and social equity. As a result, the public interest dimension has been renamed “commitment to public values (Kim & Vandenabeele, 2010)”.

Table 11. Level of Work Ethics in terms of Professionalism

Statement	Mean	SD	Verbal Interpretation
1. Performing assigned duties with the highest level of excellence.	4.38	0.70	Extremely Influential
2. Serving the public without regard to time.	4.24	0.68	Extremely Influential
3. Encouraging excellence among peers.	4.23	0.71	Extremely Influential
4. Complying with duties without comparing the volume of work to remuneration.	4.11	0.72	Very Influential
5. Encouraging peers to uphold their integrity as public servants.	4.19	0.66	Very Influential
Overall	4.23	0.69	Extremely Influential

Table 11 shows that the employees highly prioritize performing their assigned duties with the highest level of excellence, as indicated by the highest mean score of 4.38 (SD = 0.70). However, they also seem to have some reservations about the remuneration they receive for their work, as indicated by the lowest mean score of 4.11 (SD = 0.72).

It is in accordance with Weber’s statement (2012) that the government has facilitated programs with regards to employee professionalism because it realizes that it is a must in the current era of globalization. However, it is not only an obligation, but also a requirement for every employee to become a professional.

Table 12. Level of Work Ethics in terms of Justness and Sincerity

Statement	Mean	SD	Verbal Interpretation
1. I always treat the clients fairly.	4.48	0.57	Extremely Influential
2. I always respect the rights of others.	4.42	0.58	Extremely Influential
3. I always refrain from actions contrary to law.	4.50	0.62	Extremely Influential
4. I possess actions reflecting good morals and good customs.	4.36	0.57	Extremely Influential
5. I do not extend undue favors to relatives.	4.52	0.58	Extremely Influential
Overall	4.46	0.58	Extremely Influential

Table 12 shows that the high mean score of the employees who always refrain from actions contrary to law revealed that they highly value adherence to legal and ethical standards in the workplace. Lastly, the employees possess actions reflecting good morals and good customs obtained the lowest mean score of 4.36 (SD = 0.57). The overall score of 4.46 (SD = 0.58) indicates that the work ethics in terms of justness and sincerity were extremely influential, suggesting

that these values are highly important for job performance. As cited by Karim (2012) it is important to know that there is an existing law that upholds the integrity of the government agencies being a public trust by the people. This help enhances the behavior of public officials and employees because of the work ethics that they are supposed to observe in the discharge of their official functions and duties.



Table 13. Level of Work Ethics in terms of Political Neutrality

Statement	Mean	SD	Verbal Interpretation
1. I always implement merit systems.	4.26	0.72	Extremely Influential
2. I always provide equal and fair access.	4.43	0.64	Extremely Influential
3. I constantly provide service to everyone.	4.30	0.62	Extremely Influential
4. I constantly consider the length of service in selection/promotion.	4.33	0.66	Extremely Influential
5. I frequently observe the next-in-rank concept.	4.30	0.61	Extremely Influential
Overall	4.32	0.65	Extremely Influential

Table 13 shows that the employees who provide equal and fair access obtained the highest mean score of 4.43 (SD = 0.72). Lastly, the employees who always implement merit systems obtained the lowest mean score of 4.26 (SD = 0.72).

The overall score of 4.32 (SD = 0.61) suggests that the employees work ethics in terms of political neutrality was

extremely influential. This is supported by the study of Daniarsyah (2015) who cited that the neutral attitude that must be possessed by public employees or officials becomes a preventive measure in facing information distribution that is easier and wider.

Table 14. Level of Work Ethics in terms of Responsiveness to the Public

Statement	Mean	SD	Verbal Interpretation
1. I consistently provide prompt, courteous and adequate services.	4.33	0.77	Extremely Influential
2. I always deliver the policies and procedures in a clear manner.	4.16	0.71	Very Influential
3. I always simplify rules and procedures.	4.18	0.77	Very Influential
4. I always avoid red tape.	4.08	0.72	Very Influential
5. I always conduct public consultation.	4.26	0.68	Extremely Influential
Overall	4.20	0.73	Extremely Influential

Based on the mean scores and standard deviations in Table 14, the employees consistently provide prompt, courteous and adequate services based on the highest score of 4.33 (SD = 0.77), indicating that the employees agreed that this behavior is highly important for work ethics in terms of responsiveness to

the public. On the other hand, the employees who always avoid red tape received the lowest mean score of 4.08 (SD = 0.72), indicating that they do not consider this behavior to be as important.

Table 15. Level of Work Ethics in terms of Nationalism and Patriotism

Statement	Mean	SD	Verbal Interpretation
1. Promoting the use of locally produced goods.	4.27	0.70	Extremely Influential
2. Convincing my peers of the rights of Filipinos to prevent foreign intrusion.	4.07	0.69	Very Influential
3. Defending the Filipino people when controversial issues over rights arise.	4.17	0.71	Very Influential
4. Being present during the flag raising ceremony	4.16	0.71	Very Influential
5. I always observe nationalistic commitment values.	4.26	0.69	Extremely Influential
Overall	4.19	0.70	Very Influential

Table 15 shows that the employees placed a high importance on promoting the use of locally produced goods, which can contribute to the development of the local economy. On the other hand, convincing peers of the rights of Filipinos to prevent foreign intrusion may be seen as a more challenging

task, resulting in a lower mean score of 4.07 (SD = 0.69). Overall, the level of work ethics in terms of nationalism and patriotism were still perceived as very influential, with an overall score of 4.19 (SD = 0.70).

Table 16. Level of Work Ethics in terms of Commitment to Democracy

Statement	Mean	SD	Verbal Interpretation
1. I always commit to democratic ways.	4.30	0.81	Extremely Influential
2. Maintaining the principle of public accountability	4.08	0.79	Very Influential
3. Defending the supremacy of civilian authority over the military.	4.17	0.81	Very Influential
4. I always uphold the constitution.	4.10	0.80	Very Influential
5. Upholding loyalty to the country over loyalty to persons or the party	4.14	0.80	Very Influential
Overall	4.16	0.80	Very Influential



The overall score of 4.16 (SD = 0.80) suggests that the employees work ethics in terms of commitment to democracy was very influential. The highest mean score of 4.30 (SD = 0.81) suggests that the employees always commit to democratic ways which indicate a strong commitment to democratic values. However, the lowest mean score of 4.08 (SD = 0.79)

suggests that the employees maintain the principle of public accountability which indicate a lower level of emphasis on the importance of public accountability.

This is supported by the study of Amelia (2016) who cited that ethics and accountability are keys not only to effective government but also to effective governance.

Table 17. Level of Work Ethics in terms of Simple Living

Statement	Mean	SD	Verbal Interpretation
1. Living within my income level.	4.32	0.71	Extremely Influential
2. Observing a lifestyle that is appropriate to my position.	4.28	0.78	Extremely Influential
3. I always show moderation in the use of basic commodities.	4.27	0.70	Extremely Influential
4. I always require my family members to lead simple lives.	4.42	0.67	Extremely Influential
5. Refraining from ostentatious display of wealth.	4.37	0.66	Extremely Influential
Overall	4.33	0.70	Extremely Influential

Table 17 shows that the employees who always require their family members to lead simple lives obtained the highest mean score of 4.42 (SD = 0.67). Lastly, the employees who always show moderation in the use of basic commodities obtained the lowest mean score of 4.27 (SD = 0.70). The overall score of

4.33 (SD = 0.70) indicates that the employees work ethics in terms of simple living is extremely influential, suggesting that they place a high importance on leading a simple and frugal lifestyle.

Table 18. Difference of the employees work ethics when grouped according to their profile

Demographic Profile	Work Ethics	f value	Sig.	Decision on Ho	Interpretation
Age	Commitment to Public Interest	1.73	0.29	Accept	Insignificant
	Professionalism				
	Justness and Sincerity				
	Political Neutrality				
	Responsiveness to the Public				
	Nationalism and Patriotism				
	Commitment to Democracy				
	Simple Living				
Sex	Commitment to Public Interest	0.83	0.16	Accept	Insignificant
	Professionalism				
	Justness and Sincerity				
	Political Neutrality				
	Responsiveness to the Public				
	Nationalism and Patriotism				
	Commitment to Democracy				
	Simple Living				
Employment Status	Commitment to Public Interest	10.27	0.25	Accept	Insignificant
	Professionalism				
	Justness and Sincerity				
	Political Neutrality				
	Responsiveness to the Public				
	Nationalism and Patriotism				
	Commitment to Democracy				
	Simple Living				
Years of Service	Commitment to Public Interest	6.01	0.52	Accept	Insignificant
	Professionalism				
	Justness and Sincerity				
	Political Neutrality				
	Responsiveness to the Public				
	Nationalism and Patriotism				
	Commitment to Democracy				
	Simple Living				



The findings suggest that there was no significant difference in the level of work ethics among government employees in Santa Cruz, Pila, and Pagsanjan Local Government Units in Laguna, based on their demographic profile. The p-values obtained from the statistical analysis were greater than the significance alpha of 0.05, indicating that the differences observed were not statistically significant.

Therefore, the null hypothesis "There is no significant difference on the level of work ethics when grouped according to their profile" is accepted at the 0.05 level of significance. This means that the demographic factors such as age, gender, employment status, and educational attainment did not have a

significant impact on the work ethics of government employees in the selected local government units in the fourth district of Laguna.

The findings above supported by the study published in the Journal of Business Ethics which was found that there was no significant relationship between gender and work ethics among employees in the US. The study surveyed 231 employees from various industries and used a survey to measure work ethics. The results showed that there was no significant difference in work ethics between male and female employees.

Table 19. Relationship between Job Performance and the respondents' Work ethics

Job Performance	Work Ethics	Computed R	Strength of Correlation	p value	Analysis
Timeliness	Commitment to Public Interest	0.26	Low Positive	< .001	Significant
	Professionalism	0.45	Moderate Positive	< .001	Significant
	Justness and Sincerity	0.33	Low Positive	< .001	Significant
	Political Neutrality	0.49	Moderate Positive	< .001	Significant
	Responsiveness to the Public	0.42	Moderate Positive	< .001	Significant
	Nationalism and Patriotism	0.19	Negligible	0.01	Significant
	Commitment to Democracy	0.30	Low Positive	< .001	Significant
	Simple Living	0.24	Low Positive	< .001	Significant
Creativity and Innovation	Commitment to Public Interest	0.66	High Moderate Positive	< .001	Significant
	Professionalism	0.45	Moderate Positive	< .001	Significant
	Justness and Sincerity	0.68	High Moderate Positive	< .001	Significant
	Political Neutrality	0.68	High Moderate Positive	< .001	Significant
	Responsiveness to the Public	0.66	High Moderate Positive	< .001	Significant
	Nationalism and Patriotism	0.68	High Moderate Positive	< .001	Significant
	Commitment to Democracy	0.64	High Moderate Positive	< .001	Significant
	Simple Living	0.56	Moderate Positive	< .001	Significant
Initiative	Commitment to Public Interest	0.54	Moderate Positive	< .001	Significant
	Professionalism	0.71	High Moderate Positive	< .001	Significant
	Justness and Sincerity	0.22	Low Positive	< .001	Significant
	Political Neutrality	0.61	Moderate Positive	< .001	Significant
	Responsiveness to the Public	0.66	Moderate Positive	< .001	Significant
	Nationalism and Patriotism	0.49	Moderate Positive	< .001	Significant
	Commitment to Democracy	0.55	Moderate Positive	< .001	Significant
	Simple Living	0.47	Moderate Positive	< .001	Significant
Consistency	Commitment to Public Interest	0.31	Low Positive	< .001	Significant
	Professionalism	0.50	Moderate Positive	< .001	Significant
	Justness and Sincerity	0.16	Negligible	< .001	Significant
	Political Neutrality	0.32	Low Positive	< .001	Significant
	Responsiveness to the Public	0.36	Low Positive	< .001	Significant
	Nationalism and Patriotism	0.31	Low Positive	< .001	Significant
	Commitment to Democracy	0.48	Moderate Positive	< .001	Significant
	Simple Living	0.20	Low Positive	< .001	Significant
Transparency	Commitment to Public Interest	0.26	Low Positive	< .001	Significant



Professionalism	0.51	Moderate Positive	< .001	Significant
Justness and Sincerity	0.23	Low Positive	< .001	Significant
Political Neutrality	0.44	Moderate Positive	< .001	Significant
Responsiveness to the Public	0.48	Moderate Positive	< .001	Significant
Nationalism and Patriotism	0.35	Moderate Positive	< .001	Significant
Commitment to Democracy	0.34	Moderate Positive	< .001	Significant
Simple Living	0.37	Moderate Positive	< .001	Significant

Table 19 present the significant relationship between job performance and the respondent's work ethics. It was observed to have a significant relationship between these variables. This is based on the computed r values obtained from the tests with negligible to high moderate positive relationship. Furthermore, the p-values obtained were less than the significance alpha 0.05, hence there is a significant result.

From the findings above, we can infer that at 0.05 level of significance, the null hypothesis "There is a significant relationship between job performance and the respondents' work ethics is rejected".

The significant relationship between job performance and work ethics in this study implies that employees who have strong work ethics are more likely to perform better in their jobs. This finding highlights the importance of work ethics in the workplace and the need for employers to promote and encourage work ethics among their employees.

This finding is in accordance with the results of research by Nizam et al. (2016) and Sunanda K. (2018) and show the work ethic has the potential to produce employee performance expected by the company. Work ethic as employee awareness to be responsible for their work because the task they get is a form of intrinsic value for someone. Someone will feel a significant contribution to the progress of the company if they are able to carry out their responsibilities and duties well. Consistency of one's work ethic will lead to work results that can be accounted for.

CONCLUSIONS

In conclusion, the study found that work ethics are an important predictor of government employees' performance in several areas, including professionalism, justness and sincerity, political neutrality, responsiveness to the public, and simple living. This underscores the importance of promoting a culture of work ethics in the public sector, which can help improve the quality of public service delivery and increase citizen trust in government institutions. While commitment to public interest, nationalism, patriotism, and democracy were found to have a relatively lower influence on performance, they are still important values that can help guide government employees' behavior and decision-making.

RECOMMENDATIONS

Policymakers and organizational leaders should continue to promote and reinforce commitment to public interest, nationalism and patriotism, and commitment to democracy alongside work ethics to create a well-rounded and effective public service culture.

Overall, this study highlights the need for ongoing research on the factors that influence government employee

performance and the development of effective strategies for improving public service delivery.

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BANKNOTE CLASSIFICATION USING TRANSFER LEARNING

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ABSTRACT

The validity and integrity of money transactions, and banknote categorization is essential in financial systems. The accuracy and effectiveness of banknote categorization systems have recently been greatly improved by the introduction of machine learning techniques. To offer a full overview of the developments achieved in the field of banknote categorization using machine learning, this study presents a thorough literature review on the subject. The survey discusses several machine learning algorithms, feature extraction methods, datasets, assessment standards, and difficulties in classifying banknotes. To extract useful information from banknote photos, feature extraction approaches, including texture analysis, colour analysis, and geometric characteristics, are investigated. For training and assessment purposes, the study makes use of databases on banknotes that are available to the public. The results of this study will help create reliable banknote categorization systems, improving the trustworthiness and integrity of financial transactions.

KEYWORDS: Banknote classification, Transfer learning, Machine learning, ImageNet, ResNet, MobileNet, EfficientNet, InceptionNet

INTRODUCTION

Transfer learning-based banknote classification has garnered a lot of interest in recent years as a potent strategy for tackling challenges related to the dearth of labeled banknote datasets and the demand for effective and precise classification models. Transfer learning improves the performance of banknote classification tasks by utilizing information obtained from previously trained models on substantial datasets.

A crucial responsibility in the financial sector is banknote categorization, which helps to prevent the use of fake currency and preserve the legitimacy of financial transactions. Traditional methods for classifying banknotes sometimes need a lot of labeled data to train models using machine learning, which may be difficult with banknote datasets. By allowing the transfer of information and learned features from pre-trained models that have been trained on enormous and varied datasets like ImageNet, transfer learning lessens the impact of this constraint.

Transfer learning comprises refining previously learned models to make them suitable for the job of classifying banknotes. The pre-trained models acquired high-level characteristics and representations from generic photos, frequently based on deep learning frameworks like Convolutional Neural Networks (CNN). Even with little labeled banknote data, these previously trained models may be used to extract useful texture, pattern, and form properties from banknote photos.

$$S(i,j)=\sum_m \sum_n I(i-m,j-n) K(m,n), \quad \dots \dots \text{equation 1}$$

$$S(i,j)=\sum_m \sum_n I(i+m,j+n) K(m,n), \quad \dots \dots \text{equation 2}$$

Transfer learning generally consists of two basic components. The banknote pictures are fed into the pre-trained model as a feature extractor to acquire the activations or embeddings from a particular layer. These activations gather pertinent data about the pictures of the banknotes and feed it into the classifier. The classifier is trained in the second stage using the retrieved characteristics and readily available labeled banknote data. This method lessens the requirement for a large amount of labeled data when training a model from the start and may efficiently utilize the information gained from a variety of pictures during pre-training.

For classifying banknotes, transfer learning has various benefits. It makes it possible to create reliable models even from small, labeled banknote datasets. The transfer learning technique makes use of pre-trained models to make use of the generalized information and representations learned from a variety of pictures, which enhances the model's capacity to extract discriminative characteristics and generalize them to samples of unobserved banknotes. Transfer learning also speeds up model iteration and deployment by reusing previously trained weights that would otherwise be wasted during training.

Transfer learning in banknote categorization has advantages, but it also has drawbacks. It is important to carefully evaluate the architecture, hyperparameters, and choice of suitable layers for feature extraction while fine-tuning the pre-trained models. To solve domain shift difficulties between the pre-trained models and the particular banknote classification job, domain adaptation approaches may also be required.



In conclusion, by using pre-trained models and transferring information from huge picture datasets, transfer learning offers a potential method for classifying banknotes. Transfer learning improves the performance of banknote classification models even with little labeled data by reusing the learned features and representations. The following paper seeks to investigate and evaluate the use of transfer learning in banknote categorization, stressing the advantages, difficulties, and technological breakthroughs in this field. The research will help create more precise and effective banknote categorization systems, improving the safety and dependability of financial transactions.

RELATED WORK

S. Pascucci et al. said that their experimental results demonstrate that the pre-trained CNN achieves superior performance compared to the other methods. It successfully classifies banknotes with high accuracy, indicating its effectiveness for automated banknote processing tasks [1]. A. Siddiqui et al. suggest a methodology that involves several steps. Initially, the authors collect a dataset of banknote images, encompassing different currencies and denominations. They then employ a pre-trained CNN model, such as VGGNet or ResNet, which has been trained on large-scale image recognition tasks [2-5].

Authors provide various aspects of transfer learning, including its definition, taxonomy, challenges, and applications. The authors present a unified framework for understanding transfer learning and discuss different methods and algorithms employed in this area. They categorize transfer learning approaches into three main types: instance-based, feature-representation-based, and model-based methods. The paper highlights the advantages and limitations of each approach and provides insights into the real-world applications of transfer learning across different domains [6-8].

The authors begin by introducing the concept of transfer learning and highlighting its importance in various fields, such as computer vision, natural language processing, and bioinformatics. Then they delve into the different types of transfer learning, including inductive transfer, transductive transfer, and unsupervised transfer. They discuss the challenges and considerations involved in transfer learning, such as the selection of source and target domains, the size and quality of data, and the transferability of learned knowledge [9-11].

Bengio emphasizes the value of leveraging knowledge learned from one task or domain to improve learning in a different but related task or domain. He discusses the benefits of using pretraining with unsupervised learning in transfer learning scenarios. The author also examines different approaches to transferring learned representations, including fine-tuning, deep adaptation, and domain adaptation techniques [12-15].

The authors start by discussing the limitations of traditional handcrafted features and the benefits of learning features

automatically from data using deep neural networks. They highlight the success of deep convolutional neural networks (CNNs) in computer vision tasks and propose DeCAF as a feature extraction method based on CNNs. DeCAF leverages pre-trained CNN models, such as AlexNet, and extracts activations from intermediate layers of the network. These activations are then used as features for visual recognition tasks. The authors demonstrate that these learned features outperform traditional handcrafted features on various benchmark datasets, including object recognition and scene classification tasks [16-19].

The authors conduct experiments using different DNN architectures and datasets. They analyse the performance of pre-trained networks on target tasks and compare it with networks trained from scratch. The focus is on understanding how much knowledge can be transferred and how the similarity between the source and target tasks impacts transferability [17-23]. The paper presents experimental results on various benchmark datasets to evaluate the performance of the LLGC framework. It compares LLGC with other semi-supervised learning methods and demonstrates its effectiveness in utilizing unlabelled data to improve classification accuracy. The LLGC framework builds upon the concept of manifold regularization, which encourages smoothness and consistency in the predictions on neighbouring points in the data manifold [18-25].

The authors introduce a novel approach that utilizes a one-dimensional line image sensor to capture the reflection images of banknotes. They then apply deep learning algorithms, specifically convolutional neural networks (CNNs), to extract meaningful features from the reflection images and classify banknotes into different fitness categories. They discuss the network's layers, parameters, and training procedure, as well as the optimization techniques applied to improve the model's performance [25-30].

METHODOLOGY

A. Database Used

The following factors make the development of a banknote dataset extremely important: First, accurate banknote recognition is a task that automated teller machines and currency recognition machines must complete; second, it is necessary to develop a system that can determine whether a banknote is genuine; and third, visually impaired individuals frequently struggle with banknote recognition. We have banknotes from Thailand and India in our dataset, but for our research purposes, we have only used Indian banknotes.

There are ten different categories of Indian banknotes included in it: 10, 20, 50, 100, 200, 500, and 2000 rupees. The banknote picture dataset was captured in a variety of lighting and backdrop circumstances, including bright, dark, and cluttered. Additionally, pictures of partially folded or obscured banknotes are captured. Therefore, this dataset will be highly beneficial to researchers doing experiments like banknote recognition and classification [10, 11].



Fig. 1 – Few pictorial illustrations from banknote database

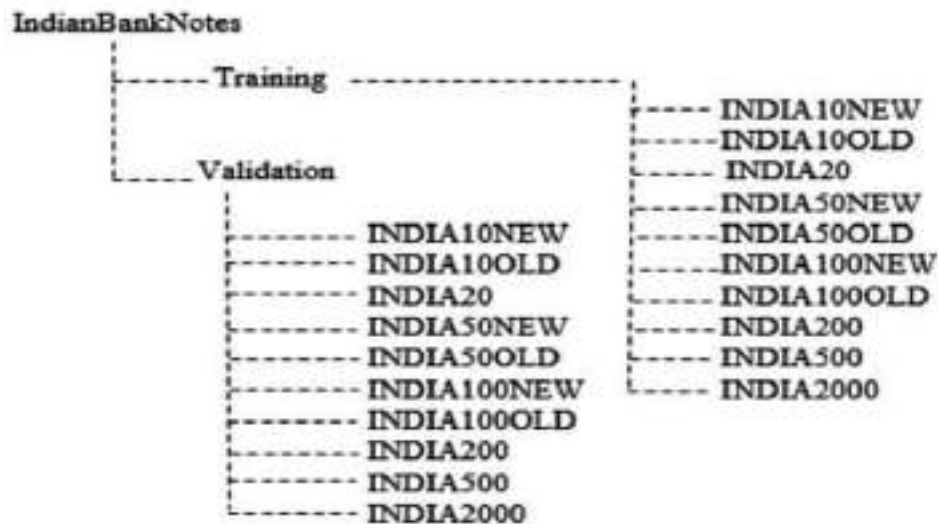


Fig. 2 – Tree representation of data used

Banknotes	Denominations Considered	Direction of image Capturing	Different Backgrounds considered for image capturing	No. of Images of each denomination	Total No. of Images
India	10 New and Old, 20 New and Old, 50 New and Old, 100, 200, 500, 2000 Rupees	Front Direction, Front Direction Rotated 180°, Backward Direction, Backward Direction Rotated 180°, Half folded	Illuminated, Dark, cluttered, Occluded	200	2000

Fig. 3 – Description of Database



B. Transfer Learning

Banknote classification using transfer learning is a technique that leverages pre-trained models on large-scale image datasets to improve the accuracy and efficiency of classifying banknotes. Transfer learning enables the transfer of knowledge learned from one task (e.g., image classification) to another related task (banknote classification) by utilizing the learned representations and features.

The process of banknote classification using transfer learning typically involves the following steps:

- i. **Pre-training:** Initially, a deep neural network model, such as VGG16, ResNet, or Inception, is pre-trained on a large-scale image dataset, such as ImageNet. This pre-training enables the model to learn general features and representations from a diverse range of images.
- ii. **Fine-tuning:** After pre-training, the pre-trained model is adapted to the specific banknote classification task by fine-tuning. The last few layers of the model are replaced or modified, and the model is trained on a smaller banknote dataset. Fine-tuning allows the model to learn banknote-specific features and optimize its parameters for the specific classification task.
- iii. **Feature Extraction:** In banknote classification, the pre-trained model is used as a feature extractor. Banknote images are passed through the pre-trained model, and activations or embeddings from a specific layer are extracted. These activations capture relevant information about the banknote images and serve as input to a classifier.
- iv. **Classification:** The extracted features are fed into a classifier, such as a support vector machine (SVM), random forest, or a fully connected neural network, which is trained on the labelled banknote dataset. The classifier learns to map the extracted features to the corresponding banknote classes (e.g., genuine or counterfeit).
- v. **Evaluation and Refinement:** The performance of the banknote classification model is evaluated using appropriate metrics such as accuracy, precision, recall, and F1-score. The model may be refined by adjusting hyperparameters, exploring different architectures, or employing ensemble methods to further enhance its performance.

Banknote classification using transfer learning offers several advantages. It reduces the need for a large, labeled banknote dataset, as the model learns from the general knowledge acquired during pre-training. Transfer learning also improves the generalization ability of the model, allowing it to classify banknotes accurately even with limited labelled data. Furthermore, it speeds up the development process, as the model can leverage the pre-trained weights, saving time and computational resources.

By leveraging transfer learning, banknote classification systems can achieve higher accuracy, robustness, and efficiency, facilitating the detection of counterfeit banknotes and ensuring the integrity of financial transactions.

C. Types of Architecture Used

i. Efficient Net Architecture

Powerful deep learning architecture EfficientNet has become well-known for its effectiveness and high performance in a range of image classification applications. To maximize network depth, breadth, and resolution, compound scaling is used to strike a compromise between model size and accuracy. Depending on the difficulty of your banknote classification work, select a certain EfficientNet variation, such as EfficientNet-B0, EfficientNet-B1, EfficientNet-B2, and so forth. Model size and accuracy are balanced differently in each version. The banknote pictures should be preprocessed by being resized to the input size needed by the selected EfficientNet variation (for example, 224x224, 240x240, or 260x260 pixels). To improve the model's performance and generalization, use extra preprocessing methods like normalization, data augmentation, or cropping. Use pre-trained weights from a sizable picture dataset, such as ImageNet, to start the EfficientNet model. The learned features and representations from the pre-training phase can now be used by the model. Adjust the EfficientNet model's last fully connected layer to correspond to the number of banknote classes in your dataset. This new layer will oversee classifying banknotes.

Utilize the dataset for banknotes to train the customized EfficientNet model. To maintain the characteristics that were learned during training, only update the fully connected layer's weights while keeping the remainder of the network's weights fixed. Evaluate the trained EfficientNet model using appropriate evaluation metrics such as accuracy.

ii. Inception Net Architecture

Another well-liked deep learning architecture that may be used for banknote categorization is InceptionNet, sometimes referred to as GoogLeNet. Through its inception modules, it is renowned for its capacity to capture intricate patterns and details.

Based on the specifications of your banknote classification task, select a specific InceptionNet variation, such as InceptionV1, InceptionV2, InceptionV3, or InceptionV4. Different architectural advancements and levels of complexity are offered by each model. The banknote pictures should be preprocessed by scaling them to the input size needed by the selected InceptionNet variation (for example, 224x224 or 299x299 pixels). To improve the model's functionality and generalizability, we may additionally use various preprocessing techniques like normalization, data augmentation, or cropping. Using pre-trained weights from a sizable picture dataset like ImageNet, start the InceptionNet model. The learned features and representations from the pre-training phase can now be used by the model.

Utilize the dataset for banknotes to train the customized InceptionNet model. To maintain the characteristics that were learned during training, only update the fully connected layer's weights while keeping the remainder of the network's weights fixed. Utilize relevant assessment criteria, such as accuracy, to evaluate the trained InceptionNet model.

iii. ResNet Architecture

Due to ResNet's efficiency in processing deep neural networks with hundreds of layers, it has been frequently employed for banknote categorization. ResNet presents the idea of residual



connections, which help to solve the vanishing gradient issue while enabling the training of deeper networks.

Select one of the following ResNet variants: ResNet-50, ResNet-101, or ResNet-152, depending on the classification problem. The decision is based on the degree of computing difficulty and the complexity of the banknote categorization problem. Apply the banknote dataset to the ResNet model training. Update the fully linked layer's weights throughout training, maintaining the network's other weights at their initial values to protect the characteristics that have been ingrained. Performing fine-tuning on the ResNet model by unfreezing some of its earlier layers is an option if you want to make it even more suitable for the task of classifying banknotes.

Utilizing suitable assessment criteria, such as accuracy, assess the trained ResNet model.

iv. Mobile Net Architecture

Due to its effectiveness and modest model size, MobileNet is another well-liked architecture for classifying banknotes since it is ideal for contexts with limited resources. While preserving competitive accuracy, it is intended to reduce computing complexity.

Following are the parameters of our banknote classification work, select a MobileNet variation such as MobileNetV1, MobileNetV2, or MobileNetV3. The accuracy and model size trade-offs associated with each version vary. The banknote photos should be pre-processed by being resized to the input size needed by the MobileNet variation (for example, 224x224 or 224x224 pixels). To improve the generalizability of the

model, you may also use data augmentation techniques like random cropping, rotation, and flipping. Adjust the MobileNet model's last fully connected layer to correspond to the number of banknote classes in your dataset. This new layer will oversee classifying banknotes [30-35].

Utilize the banknote dataset to train the customized MobileNet model. To maintain the characteristics that were learned during training, only update the fully connected layer's weights while keeping the remainder of the network's weights fixed. Consider significant evaluation standards, such as accuracy, to evaluate the trained MobileNet model.

RESULTS AND DISCUSSION

This research paper conducted a comparative study of various pre-trained models, including ResNet, InceptionNet, MobileNet, and EfficientNet, to assess their performance in banknote classification. It was observed that transfer learning significantly improves the accuracy and efficiency of banknote classification models. The fine-tuned models consistently outperformed models trained from scratch, highlighting the importance of leveraging pre-existing knowledge [35-40].

Model Evaluation is done on metric Accuracy.

- ResNet: 95.00%
- MobileNet: 89.64%
- EfficientNet: 83.93%
- InceptionNet : 77.50%

Model Name	Accuracy (in %)	Classification (in %)	Misclassification (in %)
ResNet	0	0	100
MobileNet	0	0	100
EfficientNet	0	0	100
InceptionNet	0	0	100
Average	0	0	100

Model Name	Accuracy (in %)	Classification (in %)	Misclassification (in %)
ResNet	95	95	5
MobileNet	89.64	89.64	10.36
EfficientNet	83.93	83.93	14.07
InceptionNet	77.50	77.50	22.50
Average	87.02	87.02	12.98

The findings of this study have the potential to contribute to the creation of robust and reliable banknote categorization systems. By improving the trustworthiness and integrity of financial transactions, these systems can play a crucial role in ensuring the smooth operation of financial institutions and enhancing customer confidence. Furthermore, the study highlights the significance of machine learning techniques in advancing the field and identifies areas for further research and development. The study provides valuable insights into the advancements made in banknote categorization using machine learning. By examining different methodologies, datasets, and challenges, it serves as a foundation for the development of more efficient

and accurate systems, ultimately benefiting the financial industry and its stakeholders [40-45].

CONCLUSION

The Transfer Learning approach plays a significant role in banknotes classification. In conclusion, this research paper provides insight into the effectiveness of transfer learning in banknote classification. The ResNet model outperformed and gave a high accuracy of 95.00% among all other models; while, InceptionNet gave a low accuracy of 77.50% among all the models. The task of classification can be further integrated with sensors like camera etc. and a model can be evolved for



banknote classification. Research and experimentation are needed to detect counterfeit banknotes by integration of deep learning and transfer learning algorithms and sensors.

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THE PECULIARITIES OF CONCEPTS REPRESENTING THE HUMAN INNER WORLD IN ENGLISH LINGUISTICS

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Инглиз лингвомаданиятида инсон ички дунёсини ифодаловчи концептларнинг ўзига хос хусусиятлари

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“Энг катта сир – бу инсоннинг ўзи, унинг хис-туйғуларидан кўра сочлари саногини олиш осонроқ”. Инсон ички дунёсига нисбатан Августин Аврелий томонидан берилган бу таъриф ҳали хануз ўз долзарблигини йўқотгани йўқ.

Инсон ички дунёсини ифодаловчи концептлар кенг қамровдаги концептлар ҳисоблангани боис биз уларга нисбатан макроконцепт атамасини қўллашни жоиз топдик. Макроконцепт деганда мураккаб ментал ҳосила тушунилиб, инчон ички ҳолати ва унинг ташқи кўринишларини ифода қилувчи концептлар гуруҳини тушунамиз. Тадқиқотимиз доирасида қалб, виждон, рух, ирода, тасаввур, юрак, soul, conscience, spirit, will, heart, mind, private, innermost ва ҳ.к. каби концептларнинг тахлили олиб борилади. Инсон ички дунёси витал, антропоморф ва зооморф характеристикаларга таянган ҳолда концептуаллашади. Тадқиқ қилинаётган концептларги инсон ички дунёси концептлари деб умумий номнинг берилиши шартлидир.

Ички дунё белгиларининг концептуаллашуви жараёни инсон ҳақидаги билимларга асосланган бўлиб, уни тирик жон сифатида (лотинчадан vitalis - тирик) тавсифлайди: инсон нафас олади, истайди – қалб нафас олади, истайди. Инсоннинг эмоционал ҳаёти билан боғлиқ бўлган юрак концепти учун “синиш” когнитив модели ҳосил: “Nowadays a **broken heart** will run to many editions” [7, 11]; **Yuragim yorilishg‘a yetdi, hazillashma!** [6, 219].

Инсоннинг ички дунёсининг лингвистик тасвири “яхлитлик, изчиллик, тўлиқлик ва муаллифликни даъво қила олмайди”, чунки инсон ички дунёси кўп йиллик тажриба лардан шаклланади ва ўзгариб боради [3, 8]: яъни инсоннинг реалистик, эмпирик олами мифоэпик, файласуфона тушунчалар билан боғлиқдир (В. И. Постовалова, М. Р. Одинова, В. Н. Телиа). Бунга ишонч ҳосил қилиш учун инсон ички дунёсининг “маънавий”, “лингвистик анатомиясини” жиҳати билан танишиб чиқиш кифоядир Биринчидан, унга квази-соматик, номоддий, “тасаввур қилинган” органлар (жон - soul, рух, ички олам – inner world, сезги ва бошқалар) киради. Бундан ташқари, инсон психикаси билан боғлиқ қўшимча функциялар маътериаллаштирилади, аслида мавжуд (соматик) органларга ва тананинг суяк воситаларига тнглаштириш. Булар, масалан, жигар, юрак, сафро, қон, инсоннинг ҳиссий соҳасига “хизмат қилади” (бутун қалбингиз билан севиш, бутун бориғи билан нафратланиш, томирларингизда қон қайнаши; bottom of soul, the harmony of soul and body, blood runs cold, blood-curdling, It has



chilled the blood to the very bottom of my veins, that sound seemed to freeze my very blood, my blood boil, blood congeal with horror, love with all/whole one's heart, hating him with every fiber of your being).

Умуман олганда, инсоннинг ички дунёси ҳақидаги миллий-лисоний ғояларнинг содда психологик табиатини ташқи дунёнинг ўзига хос аналогии сифатида қайд этадилар (А. Д. Шмелев, Н. Д. Арутюнова, М. Р. Одинцова, Е. М. Вольф, М. В. Пименова, Ю.Д. Апресян ва ҳк.). Бу тирик ва жонсиз табиатда мавжуд бўлган ҳамма нарсаи ўз ичига олган микрокосмоснинг бир тури: дунёнинг асосий элементлари – ҳаво, олов, сув (ғазабдан алангаланиш, муҳаббат ўтида ёниш; a rush of love, burst of love, in the heat of passion, blush of mortification, a rush/burst of feelings); ёруғлик ва зулмат (умид нури, a ray/ beacon of hope, silver lining; gloomy/dark thoughts; conscience is gnawing blossoming of/into love, blossoming love); инсонга хос хусусиятлар (виждони гапирди, виждон амри, ҳиссиётларни назорат қилиш; his heart will speak again, the heart spoke; nurturing feelings), озик-овқат, ичимлик (ширин хотиралар; bitter shame; sweet/ delicious/ luscious/ fond memories); фазовий реалиялар (юррак тубидан; inmost faith, in the secret heart, strange places of soul, in the bottom of the heart; from the depths of the heart); объектлар (тош юрак, миянгизни ишлатинг; stone heart, to put little thinking caps, homeless think; to tapp into fantasy) ва ҳ.к.

Ва ниҳоят, инсоннинг ички дунёсининг лисоний кўриниши, унинг оқилона яратилган илмий ва илмий бўлмаган моделларидан фарқли ўларок, она тилида сўзлашувчилар томонидан амалга оширилмайди, чунки уни ташкил этувчи концептлар асосан лингвистик ва нутқ бирликларининг ички, мазмунли шакли сифатида мавжуд. Тил семантикасида акс эттирилган дунёнинг лисоний манзарасини ташкил этувчи инсон психикаси ҳақидаги ғоялар о-заки нутқда оддий, стереотипик, аъъанавий усуллар сифатида вербаллашади, чунки улар инсон онги маҳсули бўлиб “ижтимоий ҳаракат соҳаси”га тегишлидир [4, 22]. Шаклланаётган фикрни тил орқали узатишнинг энг адекват усули мақсадли, онгли равишда коммуникатив вазибаларни ҳал қилиш жараёнида амалга оширилишидир [2, 87].

Шу тариқа, бадиий матнларда инсоннинг ички дунёси ҳақидаги содда лингвистик ғояларни актуаллаштириш бадиий ва тасвирий вазибаларга бўйсунди. Матнларида тасвирлар рецепторнинг онгига ҳиссий таъсирнинг кучли воситаси сифатида ишлатилади, унинг таъсири инсоннинг миллий моделини ташкил этувчи стереотипларнинг таъсири билан боғлиқ.

Тилининг барча лингвистик (нутқ) усуллари ва воситалари томонидан объективлаштирилган дунёнинг лисоний манзарасини ташкил этувчи инсоннинг ички дунёси ҳақидаги содда психологик ғояларни аниқлаш ва тизимлаштириш учун ўрганилаётган тил лингвоантропологиясининг долзарб вазибаларини аниқлаштириб беради. Ушбу муаммони ҳал қилишнинг мумкин бўлган усулларида бири бу турли хил тил даражалари воситаларини уларнинг умумий мақсадларига мувофиқ бирлаштириш ва тизимлаштиришга имкон берадиган категориялик семантик ёндашувдан фойдаланиш, яъни ақлий ҳодисаларни образли-ассоциатив талқин қилиш функциялари, уларни баҳолаш-экспрессив, мажозий ва прагматик жиҳатдан ишонарли мотивацион тимсоллар орқали таҳлил қилишдир.

Бу ҳолда инсон ички дунёсининг лингвистик қиёфасини моделлаштириш семантик категориялар - семантик инвариантлар асосида амалга оширилади, улар кўп даражали тил ва нутқ бирликлари семантикасида турли хил талқинларни олади ва дунёнинг ақлий тасавурларининг универсал шаклларида мурожаат қилади, яъни мавзунинг когнитив-семантик тоифалари, объект, макон ва бошқалар. Мажозий мазмун жиҳатидан энг бой ва хилма-хил семантик тоифалардан бири – “макон” мисолида инсоннинг ички дунёси образини категориялик-семантик моделлаштириш имкониятларини кўрсатишга ҳаракат қиламиз.

Рухий ҳодисалар фазовий тасвирлари лексик-грамматик асосининг хусусиятларини кўриб чиқадиган бўлсак инлиз ва ўзбек тилларида ақлий соҳанинг турли хил ҳодисаларини макон мажозий-ассоциатив тасвирлашнинг бир қатор воситалари ва усуллари ишлаб чиқилган. Бундай семантик моделлаштиришнинг энг муҳим усули - бу иккиламчи номинация ва биринчи навбатда метафоризация, яъни, инсон ички дунёси тасвирини шакллантиришда предмет-фазовий маънога эга лексик бирликлардан фойдаланиш - табиатдаги



идеал ҳодисаларни макон асосида тавсифлаш, (чуқур билим - , теран ақл, қалби дарё, ўз дунёсида яшамоқ, ўз қобилига ўралмоқ, калласи хум, фақатгина ўз қизиқишлари дунёсида яшамоқ.

Инсон ички дунёсида бўлиб ўтаётган психик ҳодисаларнинг макон лисоний тасвирларини яратадиган воситалар нафақат луғатда, балки грамматикада ҳам шаклланади. Аввало, биз грамматик метафора деб аталадиган нарса ҳақида гапиримиз, унинг моҳияти тилнинг грамматик воситалари билан ҳолатлар, жараёнлар, фазилатларни “объективлаштириш”да ётади[5]. Нутқда психик ҳодисаларнинг номинациялари нафақат предмет-макон маънога эга метафорик таърифларни олади, шунингдек, умумлаштирилган (категорик) макон-объектив маънога эга грамматик шаклларни осонгина шакллантиради ва предикатларнинг фазовий детерминантлари позицияларини эгаллайди (бошига бирор фикрни куйиб олиш - get something into one’s head, хотирадан кўтарилиш – to slip one’s mind, went out of one’s head, гуноҳга ботиш - take a sin on the soul, hurt a soul, хотираларга чўмиб кетиш - immerse oneself in memories).

Инсон ички дунёсини макон тушунчаси асосида тасвирлашнинг яна бир усули - бу ўхшаш жумлаларда субстантив метафора ёки таксономик предикациядан фойдаланиш [1, 17-20]. Уларнинг ўзига хос хусусияти ёрдамчи предметни (психологик оламнинг мажозий-ассоциатив репрезентациясига жалб қилинган маълум бир фазовий объект) экспликациясидан иборат бўлиб бундай импликация учун асос бўлиб хизмат қилган хусусиятни ифодалашдан иборат. Субстантив метафора иштирок этган ибораларда инсон ички оламини тасвирловчи синтактик позицияларда одатда аксиологик жиҳатдан тўйинган тасвирлар қўлланилади, масалан:

ақл тоши, инсон боши;

Зийракнинг ақли тош ёрар, Номарднинг мушти бош ёрар (мақол),

Магар кетар бўлса **виждон** бош олиб, Иймон ҳам у билан бирга кўчгайдир. (шеър);

With happiness comes intelligence to the heart,

Intelligence is a fruit picked in the neighbor’s garden.

A good conscience is a soft pillow,

A guilty conscience feels continual fear,

He has a wolf-conscience.

A guilty conscience needs no accuser.

Образли таққослаш субстантив метафорага яқин бўлиб, унинг моҳияти ментал ҳодисаларни объект-маконий объектларга ўхшатишдан иборат, одатда бундай ўхшашликнинг асосини – ички дунё ҳодисаларига тааллуқли ёрдамчи субъектнинг статик ва динамик белгиларини кўрсатиш орқали амалга оширилади. Масалан, фикрлар оқимини кўлдаги сувнинг секин ҳаракатланиши билан таққослашга асосланган ўта шошилмайдиган фикрлаш жараёнининг бадий тавсифини куйидаги мисолда кўришимиз мумкин. Масалан:

My thoughts, too, almost stopped their running and splashed almost imperceptibly, like the cold waters of a stagnant lake. - Менинг хаёлларим ҳам учидан тўғтаб худди кўлнинг совуқ сувлари каби деярли сезилмай чайқаларди.

Макон семантик категориясининг лексик ва грамматик базасини тавсифлашдан унинг мазмуни характеристикаси, образли ва ассоциатив салоҳиятини шакллантирувчи асосини ташкил қиладиган субкатегорик маънолар (нутқда актуаллаштирилган ёки актуаллаштирилмаган, бироқ лингвистик бирликларнинг ички шакли даражасида қолган) тизимига ўтиш лозим. Психикани ассоциатив маконда талқин қилиш соҳаси иштирок этадиган лингвистик бирликларнинг семантик таҳлили, биринчи навбатда, инсоннинг ички дунёсининг содда лингвистик тасвирларининг икки гуруҳини – ташқи ва ички маконга ажратишга имкон беради.

Баъзи ҳолларда, ички дунё концептлари ментал ҳодисаларни ташқи, жисмоний дунёнинг ўзига хос предмет-макон реалияларига ўхшатишга асосланган бўлиб, уларнинг номинациялари гапнинг семантик тузилишида ядро ёки периферик позицияларни эгаллайди (предикатлар, актант ва предикат детерминантлар) ва улар учун янги функцияни бажаради. Инсон ички дунёси ҳодисаларини макон нуқтаи назаридан тавсифлаш мумкин. Масалан:



Violetta's soul, of course, was dark, like in an old wine cellar - Виолетта қалби зиндонда қолган каби қоронғуликка чўмган эди.

Баъзи ички дунё концептлари таққослаш/ассимиляция қилишнинг юқоридаги каби ёрдамчи субъектларини воз кечишади. Шу билан бирга, рухий дунёни ва унинг таркибий қисмларини қамраб олувчи шахс грамматик шаклларда умумлаштирилган категорик макон маънога эга, предикатларнинг ушбу шаклларини бошқарувчи префикслар семантикасида бевосита характеристикани олади. Масалан:

Қалбда қайғу - There was sadness in his soul;

Бу нарса унинг чиқиб кетган эди - This fact just dropped out of his memory;

Қалбни ларзага солмоқ - It stirred him to the depths of his soul

Шунингдек, шунингдек, турли ўлчовли (ингл. dimension - ўлчов) маъноларга ега бўлган қайта талқин қилинган хусусият сўзлари билан предикатив ва предикатив бўлмаган бирикмаларда ҳам юқоридаги ҳолатни кузатиш мумкин. Масалан:

Юрак тубидаги туйғулар – deep feelings;

Дунёқараши кенг одам - A man of broad views;

у юзаки билимга эга - He has superficial knowledge;

Ақлий образли-ассоциатив репрезентацияси соҳасига жалб қилинган лингвистик бирликларнинг таҳлили, ўз навбатида, қуйидаги тасвир турларини ажратиб кўрсатиб, инсоннинг ички дунёси концептларининг ташқи макон тасвирларини конкретлаштиришга имкон берди:

Макромакон. Нутқ материални таҳлил қилиш шуни кўрсатадики, образлар метал ҳолатлар, фазилатлар, ҳаракатлар ва уларнинг субъектларини онгли семантик моделлаштириш жараёнида камдан-кам қўлланилади. Сўзловчилар, одатда, ушбу турдаги образларни ички кўринишида олган бир қатор узвал иборалар билан чекланади: булутларда сузиб юрмоқ (осмон ва ер ўртасида) - floating on clouds, soaring in the clouds; “орзулар оламида яшаш, самарасиз хаёлларга берилиш” - living in a dream world/ fantasy (to have hopes and ideas that are not practical or possible); еттинчи осмонда бўлиш “катта қувонч, чексиз бахт ҳолати” - in the seventh heaven (extremely happy).

Микромакон. Табиат образлари образи орқали инсон ички дунёси концептларини бериш - инсон қалби боғ, гулзор каби. Масалан: Her flower-like soul was gradually withering away - Унинг гулга ўхшаш қалби аста-секин сўниб борарди.

Уй-жой образи орқали инсон ички дунёси концептларини бериш - ... Her mind slammed all the doors to prevent the terrible thought in her mind that something irreparable had happened to her brother - ... Унинг ақли акасига ёмо қор-хол юз бериши мумкинлиги ҳақидаги даҳшатли фикрни олдини олиш учун барча эшикларни ёпиб қўйди.

Инсон ички дунёси концептларининг макон нуқтаи назаридан талқини қилишнинг лингвистик (нутқ) воситалари ва усулларини таҳлил қилишга категорик семантик ёндашув инсон ҳақидаги миллий лисоний ғоялар билан боғлиқ бир қатор қоидаларни (бўш/тўлдирилган ички маконни идрок этиш, йўналтирилган/йўналтирилмаган ҳаракат) аниқлаштириш имконини беради. Бундан ташқари, бу лингвокреатив фикрлашнинг ўзига хос хусусиятларини тушунишга ёрдам беради. Хусусан, макон хусусиятлар тизимини жисмоний, моддий дунёдан идела ментал дунёга ўтказиш семантик силжишлар билан бирга келиши аниқ. Инсон маълум бир ички таркибнинг ташувчиси сифатида бошқа "қонунлар" га мувофиқ "ўлчанади". Макон предикатлари психологик фазилатлар, ҳолатлар, ҳаракатлар ёки умуман шахснинг ички дунёсини – дид, меъёрлар, ахлоқий идеаллар, инсоннинг қизиқишлари, унинг фойдалилик ва функционаллик ҳақидаги ғояларини очиқ беради.

Инсон ички дунёсини макон нуқтаи назаридан тавсифловчи концептлар турли хил аксиологик маъноларни ривожлантиради.

Маконсемантик категорияси мисолида кўрсатилган ёндашув инсон ички дунёсининг лингвистик қиёфаси бўйича тадқиқотларнинг услубий базасини кенгайтиришга имкон беради.



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VERBALIZATION OF GLUTTONIK CONCEPT-RELIAS IN LITERARY TEXTS

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ГЛЮТТОНИК КОНЦЕПТ-РЕАЛИЯЛАРНИНГ БАДИЙ МАТНДА ВЕРБАЛЛАШУВИ

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Аннотация. Мазкур мақола глуттоник концепт-реалияларнинг бадий матндаги вазифалари тадқиқига бағишланган бўлиб, тадқиқот реноминация назарияси асосида олиб борилган, мазкур назария доирасида R-реалия, (маданий предметларни аниқлашда) C-реалия (маданий концептлар аниқлашда) ва L-реалия (маданий концептлар ва предметларни аниқлашда) атамалари қўлланилган.

Калит сўзлар: реноминация, реалия, маданий концепт, культурема, миллий колорит, эквивалентсиз лексика, лингвомаданият, концепт-реалия.

Барчамизга маълумки бадий адабиёт лингвомаданий маълумот билан бир қаторда ҳар бир халқнинг миллий ўзлигини ўзида мужассам қилувчи маълумот ташувчиси ҳисобланади, чунки ҳар бир бадий асар яратувчиси муайян тил соҳиби бўлган ва маълум бир маданиятга тегишли бўлган инсондир. Бир томондан, муаллифнинг дунёқароши, диний эътиқоди асарнинг бадий оламига ўз таъсирини кўрсатади. Иккинчи томондан, бадий матн ифодалилигининг асосий мезони ундаги қахрамон ҳисобланади, унинг ўзига хос нутқ сулуи, кундалик ҳаётга бўлган қарашлари муҳим ўрин эгаллайди.

Таъкидлаш жоизки, бадий матнда акс этган лисоний ва нолисоний омилларнинг ўзаро муносабатлари миллий хос сўзларда, яъни бошқача қилиб айтганда реалияларда ўз аксини топади. Мазкур сўзларнинг миллий семантикаси китобхонга асарнинг бадий олами, ундаги қахрамонлар образи маънавий дунёсига кириб боришга ёрдам беради ва шу аснода муаллифнинг бадий интенциясини тўғри талқин қилишга имконият яратади.

Илмий-лингвистик адабиётлар тахлили шуни кўрсатмоқдаки, реалиялар ўзига хос эга лексика тури бўлиб, миллий колоритни ифодалашга хизмат қилади. Тил тизимининг маданий хос элементи ҳисобланган реалиялар шунингдек ўзида экстралингвистик маълумотни мужассам қилади ва фаннинг турли соҳаларида тадқиқот ишларини олиб боровчи олимларнинг эътиборини ўзига жалб қилади (шу жумладан, тилшунослик соҳаси, таржимашунослик соҳаси, лингвомаданиятшунослик соҳаси вакиллари ва б.).

Тилшуносликда реалия тушунчасига изоҳ бериш масаласи ҳалигача мунозарали масала ҳисобланади. Турли тадқиқотчиларнинг илмий ишларида реалиялар турлича талқинга эга бўлиб улар моддий объектларнинг номлари сифатида, кенгрок маънода тарих, география, давлат тузилиши, кундалик ҳаёт ва бошқалар билан



боғлиқ тушунчалар ва вазиятларнинг номлари сифатида изоҳланган бўлиб, эквивалентсиз лексикага қиёсланади [3, 47].

Бироқ шуни таъкидлаш жоизки, реалиялар маданиятнинг ўзига хос “таянч нуқталари” бўлиб, бир маданиятни иккинчисидан фарқлайди. Шу маънода, ўзбек тилшунослигида тез-тез қўлланиладиган “реалия” атамасига Х.Вермеерга тегишли бўлган хорижий лингвомаданият ва таржимашуносликда аксар ҳолларда қўлланиладиган “културама” атамаси мос келади. Х.Вермеернинг културама атамаси қуйидагича изоҳланади: “Х маданият соҳиблари учун аҳамиятли бўлган ходиса, яъни културама, Y маданият билан қиёсланганда, фақатгина Х маданиятга хос бўлиб чиқади”[9]. Шу нуқтаи назардан барча реалиялар маданий хос сўзлардир.

Ўтган асрнинг 50-йилларидан бошлаб реалиялар масаласи турли тиллар доирасида тадқиқ қилина бошланди, А.В.Федоров, Г.В.Чернов, Л.Н.Соболев, Я.И.Рецкер, И.И. Ревзин, Г.Д.Томахин, Л.А.Черняховская, Т.В.Чернов, С.И.Влахов, С.П. Флорин, В.Н.Комиссаров, Р.К.Миньяр-Белоручев, Н.Любимов, А.В. Федоров, Л.Л.Нелюбин, Э.Д.Львовская, В.Н.Крупнов, Л.С. Бархударов, М.Г.Комлев, В.Г.Гак, Е.М.Верещагин, В.Г.Костомаров, А.О.Иванов ўз тадқиқотларида тилларнинг ўзаро таъсири ва ўзаро муносабатларини ўрганишнинг концептуал ва фактик характеридаги фундаментал ғояларини илгари сурганлар. Peter Newmark, Douglas Robinson, Mildred L. Larson, E. Nida ва бошқа олимларнинг хорижий илмий адабиётларда эквивалентсиз лексиканинг назарий муаммоларига бағишланган асарлари мавжуд.

Реалияларни аниқлаш ва уларни таржимада тўғри бериш масаласи ҳали ханузгача таржимашуносликда муҳим ҳисобланади. Влахов ва Флорин реалияларни реалия бўлмаган сўзлардан қандай фарқлаш масаласини ҳам кўрадиларки, бу муаммонинг ечими фақатгина таржимоннинг қўлида деб ҳисоблайдилар: “асрнинг тўғри ўгирилиши таржимоннинг жараёнда қандай қарор қабул қилишига боғлиқ” [2, 30].

Реалиялар тилшуносликнинг лингвомаданиятшунослик ва антропоцентрик парадигмаси доирасида тадқиқ қилинади. Маданий предметларни ёки маданий концептларни ва шу аснода лисоний дунё манзараси фрагментларини аниқлаш лексик бирликлар тадқиқига бўлган қизиқиш бежис эмас. Реалиялар лисоний шахс тезариусида муҳим ўрин эгаллаб, мзкур шахс тегишли бўлган лингвомаданиятда муҳим ҳисобланган предметлар ва ходисаларни акс эттиради. Этник нуқтаи назардан тил соҳиблари фақатгина бир маданиятга хос бўлган ходисаларни тасвирладилар.

Мазкур йўналишда олиб борилган тадқиқот ишлари тахлили шуни кўрсатадики, ҳозирги вақтда замонавий тилшуносликда реалияларнинг ягона таснифи мавжуд эмас. Бу масалада олимлар, бир томондан, улар ишлаётган материалга, иккинчи томондан, ўзларининг илмий қизиқишларига асосланади. Шуни таъкидлаш керакки, миллий хос лексиканинг катта қисмини озиқ-овқат номлари ташкил қилади. Шу ўринда илмий мақоламизга, озив-овқат билан боғлиқ бўлган реалияларни глуттоник дискурс ва глуттоник концептлар билан боғлиқлигини таъкидламоқчимиз. Замонавий тилшуносликдаги долзарб йўналишлардан ҳисобланган концептология турли концептлар тадқиқини қамраб олади, шулар қаторида глуттоник концепт ҳам муҳим ўрин эгаллайди.

Барчамизга маълумки концептлар инсон идрок тизимининг асосий элементлари ҳисобланади. Улар ташқи, жисмоний дунё элементлари, биринчи навбатда, сўзнинг кенг маъносидаги нарсалар, яъни одамлар, ҳайвонлар, дарахтлар, тошлар, тоғлар, дарёлар, осмондаги булутлар, чакмоқ, қуёш ва ой, табиий ходисалар, шунингдек техник цивилизация ривожланишининг маълум бир даражасида (болта, найза, агава, кема, машина, самолёт, робот, телевизор, компьютер ва бошқалар) у ёки бу даврни ифодаловчи турли хил артефактларни қамраб олади.

Миллий колорит тамғаси билан белгиланган концепт- реалиялар бадий матн эстетик вазифалари доирасида турли функцияларни бажаради. Концепт-реалияларни тахлил қилиш жараёнида А.Кретов қуйидаги таснифларни таклиф қилади, яъни – маданий предметлар тахлилида R-реалия, маданий концептлар тахлилида С-реалия ва маданий концептлар номинацияси тахлили L-реалия атамалари қўллаш лозим [4, 13].

Юқоридагиларда келиб чиққан ҳолда, биз ўз илмий мақоламизда озиқ-овқат мазусидаги барча реалияларни, ягона глуттоник концепт-реалиялар атамаси билан ифодалаймиз. Тадқиқотимиз доирасида амалий тахлил материали сифатида жалб қилинган ўзбек тилидаги бадий асарлар ва уларнинг инглиз тилига амалга оширилган таржималари ҳамда глуттоник концепт-реалияларнинг функционал вазифаларини аниқлаш



доирасида глюттоник концепт-реалияларнинг бир неча функцияларини тахлил қилиб чиқамиз, яъни, миллий колоритни қайта яратиш функцияси, тарихий колоритни қайта яратиш функцияси ва б.

1. Миллий колоритни қайта яратиш функцияси.

Глюттоник концепт-реалияларнинг этнографик хусусиятини кўрсатадиган энг муҳим типологик характеристика бу халқнинг моддий ва маънавий маданиятининг турли шакллари билан боғлиқ миллийлик хосликдир. Шунинг учун бадиий асарда кундалик ҳаётнинг этнографик хусусиятларини кўрсатиб бериш учун миллий концепт-реалиялардан фойдаланилади.

Маълум бир давлатнинг ўзига хос тарихи ва маданиятини акс эттирувчи реалия-локализмларда минтақанинг ўзига хос тарихи ва маданиятини кўриш мумкин. Миллий реалиялардан фарқли равишда реалия-локализмлар муайян халқнинг тилида эмас, балки лахжаларга ёки унчалик аҳамиятли бўлмаган ижтимоий гуруҳ тилига тегишли бўлиб ушбу соҳага хос объектларни ёки уларга муносабатни билдиради [2]. Масалан, Ўзбекистоннинг водий вилоятларида, Тошкентда чўғда пиширилган гўшти “кабоб” ёки хамирли овқатни турларидан бирини номини “чучвара” деб айтилса, Самарқанд, Қашқадарё, Сурхондарё ва бошқа вилоятларда “шашлик” ёки “барак” каби реалия локализмларга дуч келишимиз мумкин. Бундай лексик бирликлар асосан маданий реалия объектларини англатади ва R-концепт-реалия деб аталади ҳамда миллий ва маданий ўзига хосликнинг энг юқори даражаси билан ажралиб туради. Бу каби маданий реалияларни бадиий асарларда ҳам учратиш мумкин. Бундай реалияларнинг маъноси кўпинча маҳаллий мансубликнинг изоҳловчиси деб аталадиган мета-матнли шарҳларда баён қилинади. Масалан:

Дастурхонга тортилаётган кийик кабоби, каклик гўшлари ҳазратдан сўнг Қутлуғ Нигор хонимга қўйилар, ундан кейин Фотима Султонга навбат келар эди. Шу сабабли оғизда эрийдиган энг аъло гўшлар ҳам Фотима Султонга илитма овқатдек мазасиз туюларди. Оқшом ифторда ёйилган таомлар ҳазм бўлиб улгурмаган, дастурхон атрофидагиларнинг кўпчилиги ҳали кун бўйи оч юришини ўйлаб, ўзини мажбур қилиб бўлса ҳам кўпроқ овқат ейишга интилар эди. Қутлуғ Нигор хонимнинг ёнида ўтирган Қоракўз бегим овқатдан ҳам кўпроқ бодринг, хандалак ер, шарбат ичар эди – кеча кун иссиғида ташналикдан ниҳоятда қийналгани эсидан чиқмас эди [8, 23].

Tarjimasi

Shashlik from saiga meat, fried partridges, other dishes – all these were served first to Umarshaikh then to Kutlug Nigor-hanum, and only then - to Fatima; freshest, mild, melting in the mouth meat seemed tasteless as slightly burnt food to Fatima-sultan. They were not hungry (only a few hours passed from the evening meal), but everybody was eating, forcing oneself. Only Karakuz-begim, who was sitting next to Kutlug Nigor-khanum, didn't touch meat, just eating cucumbers, handalyak and she was drinking sherbet – yesterday she was tormented by thirst, this day she provided herself with enough water [10, 23].

Реалия-локализмларнинг тарихий романларда кўплаб учратиш мумкин, яъни улар билан бир қаторда нафақат минтақавий ўзига хослик, балки бошқа кўшимча маълумотларни ҳам олиш имконияти мавжуд, масалан, диний мансубликка ишора қилувчи маданий реалия - “ифторлик” (the evening meal). Мазкур реалияларнинг вазифаси бир томондан минтақавий ўзига хосликни кўрсатиш бўлса, иккинчи томондан диний мансубликни ва х.к. ларни кўрсатиб беришдан иборат. Шу тариқа реалия-локализмлар матннинг “типологиязация” жараёнида иштирок этиб, бўлиб ўтаётган воқеа ва ҳаракатларни муҳитини яратишга ёрдам беради.

Пиримқул Қодировнинг “Юлдузли тунлар” тарихий романини тахлил қилар эканмиз кўплаб реалия-локализмларга, реалия-диалектизмларга дуч келамиз. Масалан:

Ҳиротнинг энг зўр пазандалари тайёрлаган ғизол кабоблари, иштаҳа очувчи нордон очарлар, моҳича номи билан машҳур бўлган ўта нозик хуштаъм суюқ ошлар Музаффар мирзо ўз меҳмони билан ўтирган тиллакори кўшкнинг юқориги қаватига кетма-кет олиб чиқилмоқда эди [8, 266].

Tarjimasi

The most skilful cooks of Herat made kabob from the tender saiga's meat; the tastiest dishes with smell of cumin and other seasonings were served one after another on the upper deck of palace, painted with gold patterns [10, 245].



Келтирилган мисоллар шуни кўрсатадики, бадий асар контекстида кўплаб реалиялар маҳаллий ва айна пайтда тарихий маълумотнинг ташувчиси сифатида хизмат қилади. Албатта глуттоник концепт-реалияларни аниқ чегара асосида “тартибга солиш” мураккаб ва уларнинг маълум гуруҳларга бўлиниши асосан шартли, схематик ва мутлақ тўлиқликни талаб қила олмаслигини яна бир бор тасдиқлайди.

2. Тарихий колоритни қайта яратиш функцияси.

Реалияларнинг вақт нисбийлиги инсон моделини яратишда муҳим рол ўйнайдиган ва дунёнинг лисоний манзарасини муҳим элементи бўлган вақт омили билан боғлиқ. “Вақт омили” ва “инсон омили” ўртасидаги муносабатлар, Н. Д. Арутюнованинг сўзларига кўра, вақт чизиғини шартли равишда таркибий қисмларга ажратадиган мавжудлик нуктасида бўлган одам вақт моделига иккита мураккаб ва қарама-қарши компонентни - ҳаракат ва ҳаракат йўналишини - киритишида намоён бўлади. Нукта ҳаракат қилади, вақт у билан бирга ҳаракат қилади, шу билан бирга воқеалар дунёси вақт чизиғи бўйлаб ҳаракат қилади [1].

Вақт асосида боғлиқлик – глуттоник концепт-реалияларда белгиланган вақт (тарихий ва маданий) даврни акс эттирувчи воқеликнинг ўзига хос хусусияти - реалияни ўз даврининг белгисига айлантиради.

Луғатнинг муҳим қатлами тарихий реалиялардан иборат бўлиб, тарихийлик – “ўлик реалиялар” – вақт нисбати асосида даврий узоклиги туфайли ҳатто улар тегишли бўлган тил маданиятида ҳам ҳақиқий маъносини йўқотади. Улардан фойдаланиш доираси касбий алоқа ёки тарихий фантастика билан чекланган.

Тарихий колоритни бериш – бадий матндаги реалияларнинг асосий вазифаларидан бири ҳисобланади. Масалан:

Базм авжига чиққанда соқий Бобур қаршисига келиб, бир тиззасини гиламга тираб чўккалади, сўнг йигирма йилдан бери хумда куч йиғиб ётган ва бугунги зиёфат учун очилган тиниқ хушбўй майин обдан суроҳийга куйди-да, Бобурга узатди. Бобур ҳали май ичмаган эди [8, 267].

Tarjimasi

The royal carver came up to Babur, having kneeled, poured out of the jug a gold glass of maynob, the powerful and spicy, having taken the power and spice during twenty years. Babur had never drunk wine [11, 245].

Келтирилган мисолда кўплаб тарихий глуттоник реалияларга дуч келамиз. Маданий предметларни акс эттириб берувчи С-реалиялар (базм, хум, майноб, суроҳий) матндаги тарихий колоритни ўзида мужассам қилади.

Ўтказилган тадқиқотлар шуни хулоса қилишга имкон берадики, глуттоник реалия-концептлар бадий матн эстетикасининг бевосита таркибий қисми бўлиб, унда кўп ва хилма-хил функцияларни бажаради: улар ёзувчининг дунёқарашини акс эттиради, матннинг барча универсал бадий маъноларини намоён қилади, унинг эстетик экспрессивлигини шакллантиришда иштирок этади.

Бироқ, уларнинг функционал салоҳияти ўзгача. R-реалиялар энг кўп миллий ва тарихий колоритни қайта тиклаш функциясига эга. L-реалиялар асосан маҳаллий колорит белгилари (диалектик реалиялар) ёки хорижий маданият белглари сифатида ишлайди. С-реалиянинг функционал салоҳияти бадий матнда устунлик қиладиган ва юқорида санаб ўтилган барча функцияларни амалга оширадиган реалиялардир. Шу билан бирга, матндаги С-реалиялар сони категорик транспозицияси туфайли сезиларли даражада ошиши мумкин. Улар рамзий ва ассоциатив функцияларда қўлланилиб, кўшимча маъноларга эга бўлади ва шу билан С-реалиялар синфини тўлдиради.

Глуттони концепт-реалияларнинг функционал имконияларини амалга оширишнинг ўзига хос хусусияти бадий асар доирасида реалиялар йиғиндиси ягона мазмун-эстетик вазифани бажаради ва тасвирланган воқелик ҳақидаги индивидуал муаллифнинг ғоясини акс эттирувчи таркибли комплекс сифатида қаралиши мумкин деган фикрни тасдиқлайди. Бундай мақсадли йўналтирилган комплексни “муаллифнинг индивидуал реаликони ёки идиолекти” атамаси билан белгилаш мумкин. Асарларни ёзиш жараёнида тақдим этилган элементларнинг ўзаро таъсири, концептларнинг семантик тўйинтирилиши ва натижада уларнинг вербализацияси содир бўлади. Умун олганда, муаллифнинг концептосфераси шахсий тажрибаси, дунёқараши ва қадриятларига асосланган бўлиб, улар ёзувчи ижодининг асосий ёки устувор мотивларини ташкил қилади. Ёзувчининг шахсий ҳаётидаги воқеалар ёзувчи ижодий фаолиятининг барча даражаларида акс этади: лингвистик ва стилистик воситаларни танлашда, асарлар персонажларини тақдим этишда ва ҳоказо [11, 42].



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ESTABLISHMENT OF ACTIVITY BASED MANAGEMENT ACCOUNTING FOR STRATEGIC PRICING IN A TRADING COMPANY IN THE FURNITURE INDUSTRY

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ABSTRACT

Today, businesses need the right tools to use scarce resources more efficiently. As well as allocating resources in an efficient way, companies must develop and support ideal management approaches with these tools. The application of activity-based management accounting for strategic pricing in companies includes a shift from traditional cost accounting methods to a more comprehensive approach relating costs to activities and ultimately to pricing decisions. Activity-based management accounting provides a better understanding of cost behavior by identifying and analyzing the activities which are involved in producing and delivering products or services. In this regard, the purpose of this study is to develop an activity-based management model for strategic pricing in a trading company in the furniture industry. The developed model is significant since it details the stages of realization, considers strategic price variables and fixed costs of resource production one by one. To establish activity-based management accounting, all activities involved in the company's operations must be defined, classified, and cost assigned to each activity, which will enable the company to identify the cost factors for each activity and how these affect the overall cost of production. Companies can also analyze the profitability of their products or services using activity-based management accounting to determine which activities contribute to profit and which do not.

KEY WORDS: Strategic Pricing, Activity-based costing, Activity-based management

1. INTRODUCTION

In today's competitive business environment, companies must adopt the most effective cost accounting methods so as to make the right pricing decisions and maintain their profitability. Traditional cost accounting methods have some limitations in determining the true cost of products or services accurately, which can lead to incorrect pricing decisions. On the other hand, activity-based management accounting has emerged as a more comprehensive cost accounting approach which relates costs to activities and pricing decisions. Activity-based management accounting comes up with a better understanding of cost behavior by identifying and analyzing the activities involved in producing and delivering products or services. This approach enables managers to make the right pricing decisions in line with the company's strategic aims and increase overall profitability.

The aim of this study is to construct an activity-based management accounting modeling for strategic pricing and to apply it in the furniture industry. In this regard, a case study approach was applied to display how operational management accounting models can be adapted to proposed strategic pricing. By reviewing the theoretical background of activity-based costing, activity-based management and strategic pricing, the necessary data for the company operating in the furniture sector, which is the subject of the study, were collected through interviews with the operators. The proposed implementation

approach to build and apply an activity-based management accounting model for strategic pricing consists of three stages:
Stage 1: Structuring the activity center and its sub-activity
Stage 2: Identifying activity factors
Stage 3: Defining and grouping resources.

The data relevant for 2021 are used to compare the cost system of the company operating in the furniture sector. In the distribution of the expenses, the expenses that are 1% or less of total expenses are distributed as head office expenses. Variable expenses are distributed equally to product groups as equal time is spent in marketing the product in the activity centers. Export sales are not taken into consideration. It is not checked whether there are semi-fixed variables in expense types and they are taken as variable expenses.

To establish an activity-based management accounting in the business, the company needs to identify and classify all activities involved in its operations and assign costs to each activity. This action will enable the company to identify the factors of the cost for each activity and how they affect the overall cost of production. Companies can also analyze the profitability of their products or services using activity-based management accounting to determine which activities contribute to profit and which do not.

2. LITERATURE REVIEW

Activity-based costing (ABC) is a modern costing technique introduced on the basis of classical costing systems and offers



a new option for allocating production costs in general (Ergun and Karamaraş, 2002: 94). According to ABC, the general expenses incurred in the production process arise from the activity efforts that are necessary for the continuation of the production and the execution of the operational processes (Roztock and Needy, 1999: 17-25). Hence, with this approach, calculations are made process-oriented, not product or sectoral (İlter, 2001: 214). The main objective of ABC is to avoid errors in product cost estimation by assigning costs to each product according to the power consumed using the appropriate allocation key. To do this, ABC relates cost objects to the activities they consume and activities to the resources they consume (Kaplan, 1992: 58; Şakrak, 1997: 80). It is a method that can provide significant information about cost factors, activities, resources, cost objects and key success indicators according to the current cost of the activity (Karcıoğlu, 2001: 12). ABC provides sufficient and accurate data to make strategic decisions such as pricing of products and services and process improvement in the profitability analysis of the buyer and the product (Christensen and Sharp, 1993: 38). Moreover, this method reveals causal relationships in the costing process by adding activities to the relationship between costs and outputs (Ülker and İskender, 2005: 196). The ABC method also helps to measure a company's profitability potential, analyze profit volume according to sales targets and sales lines, and constitute sales and marketing strategies (Pazarçeviren, 2006b: 53).

Pricing processes are required to analyze a business's cost structure and objectives, customer preferences and competitors' pricing intentions in order to understand them (Nagle, Hogan and Zale, 2015: 124). Pricing strategies can be categorized as cost-based pricing, demand-based pricing, competitive pricing, and value-based pricing. Cost-based pricing is characterized by being the most common price setting strategy. In cost-based pricing, the product is first designed, manufactured and then costed. In demand pricing, firms need to develop methods to measure demand at specific times in order to develop more effective strategies. The information gathered through measurement can give firms an idea about price. Competitive pricing is used when competition is high and companies generally do not differentiate their products. Companies should not ignore consumer demands and expectations when observing what competitors are doing. It is much better for companies to use both approaches in a hybrid way, since it puts them at risk to be unknowingly committed to one of the price-setting strategies discussed so far (Phillips, 2011: 49).

The purpose of an activity-based costing system for strategic pricing is to create a vital link between the financial and operational process by combining planning and budgeting from an activity-based perspective to create achievable plans and budgets. To achieve this objective of an activity-based costing system for strategic pricing, an organization determines how much resource it needs and how much it costs to achieve its objectives in a given time frame. The activity-based costing system for strategic pricing helps to clearly represent the cause-and-effect relationships between techniques, works, products and services since it is the stage of planning and controlling the planned work in an organization. As a consequence, activity-

based costing for strategic pricing is the approach that can support continuous improvement and process system, and activity-based costing for strategic pricing can be associated with operational control.

Cinoğlu (2019) determined the pricing strategy with accurate cost information by comparing the existing system in the gear manufacturing company with the system prepared in accordance with management accounting tools. It is stated that the company does not reflect the activities and cost expenses consumed in the production process to the resources. In this context, the costs were categorized within the framework of strategic management accounting and a pricing system was created to price the products. With this system, the information provided by the departments of the company was associated with each other and the financial situation of the company, pricing decision, the most profitable product and customer profile were revealed.

Yılmaz and Altın (2022) revealed the effect of new product development on pricing decisions within the framework of strategic management accounting. They emphasized that one of the prominent issues in the new product development phase is the measurement of the benefit that the product will provide to the company and that this benefit should be calculated over the price and cost of the product. However, if the company's new product is similar to its existing products, idle capacity should be considered when calculating the cost of the new product since the processes are the same. In this study, the effect of idle capacity on the benefit that the new product brings to the company is shown by considering cost data.

Demireli and Yılmaz (2013) discussed the effects of time-oriented activity-based costing method on product costs and product pricing activities on strategic marketing decisions in businesses. They emphasized that when time-oriented activity-based costing method is used while making strategic marketing decisions, costs and therefore product profitability will be calculated more accurately with the use of time-oriented activity-based costing method because it will create more effective results than traditional cost methods and ABC method. It will also realize decision making in a shorter time.

Özdemir and Kaygusuz (2009) showed how to use activity-based costing to accurately calculate customer profitability and how the information obtained from customer profitability analysis can help improve marketing decisions on product design, pricing, promotion, segmentation and targeting.

Yılmaz and Altaş (2018) explained the effect of strategic management accounting pricing decisions on the cost, profitability and market of the product, showing its effect on the sales capacity in the market and the effect of the enterprise on its own capacity in the internal process. He stated that the change in the capacity and production resources of enterprises also manifests itself in pricing strategy, cost behavior and resource consumption.

Last but not least, İtik (2020) stressed that hotel businesses operating in the service sector should benefit from the ABC method in order to reach more accurate cost data.



3. APPLICATION

A case study was carried out in order to indicate how operational management accounting models could be adapted to proposed strategic pricing in this study. The data belonging to the company operating in the furniture industry for the year 2021 were used. The furniture company, which is the subject of the study, follows its costing in three different expense accounts, which are: a) marketing, sales and distribution expenses, b) general administrative expenses and c) financing expenses, since it is a trade business. According to the operational data of 2021, it has three branches, namely the headquarters, Serdivan and İnegöl. There are 6 regional marketers in Istanbul Anatolia, Istanbul Europe, Aegean region, Eastern Anatolia, Black Sea and Ankara regions. To deal with the activities and costs in each of them separately, each of them was created as a different activity center.

Due to the fact that there are no activity centers & fixed and variable cost distinctions in the current cost structure of the company, activity centers were created in the system. In the uniform chart of accounts, costs were categorized as fixed and variable costs. The types of expenses were distributed to the determined activity centers by making a distinction between fixed and variable. The distinction between fixed and variable costs of related expenses was categorized on the basis of whether that expense changes on a monthly basis or not. Interest cost was considered as variable cost. The distribution of interest expenses was calculated by subtracting the weighted average maturity days from the weighted average maturity days in the sales made by each activity center. Then this maturity was multiplied by the total turnover in days and the weighted average was found again. With these averages, a distribution key was created to the activity centers in direct proportion to the total interest payment. The distribution key of interest expenses is displayed in Table 1.

Table 1. Distribution Key Table of Interest Expenses

PAID INTEREST: 2.043.198	IST.EUROPE	MEDITERRANEAN	IST. ANATOLIA	ANKARA	EASTERN ANATOLIA	BLACK SEA
AVERAGE MATURITY	164	204	141	112	169	141
PURCHASING MATURITY	102	102	102	102	102	102
THE REST MATURITY /DAY	62	102	39	10	67	39
INTEREST COST (TL)	770.175,15	946.715,60	66.183,74	41.853,02	210.746,71	7.524,37

By subtracting the total purchase maturity from the calculation total sales maturity, the total finance maturity incurred was found. The average interest rate was revealed by dividing the total interest by the total purchase amount. In this way, the daily interest rate was calculated as 0.000339664. The daily interest cost of the activity center was detected by multiplying the net purchase amount obtained by subtracting the gross profit from the total turnover in the relevant activity center and the average interest amount. This amount was included as variable cost in

the 780 financing costs of distribution activity centers by deducting the purchase maturity of the relevant activity center and multiplying it by the net sales maturity obtained. In the branches, on the other hand, owing to the fact that the sales are in cash and credit card installments, the maturity of the installment sales is taken as 120 days and a cash day, and as a result, the average net maturity is one day and this does not create any costs in the branches. The distribution of the paid interest to the activity centers is presented in Table 2.

Table 2. Distribution of Interest Paid By Activity Centers

		IST.EUROPE	MEDITERRANEAN	IST.ANATOLIA	ANKARA	EASTERN ANATOLIA
760	FIXED EXPENSE	-	-	-	-	-
	VARIABLE EXPENSE	40.836,94	48.406,00	57.312,05	26.985,21	53.133,81
770	FIXED EXPENSE	118.060,00	111.541,00	50.740,00	108.195,50	100.028,14
	VARIABLE EXPENSE	14.473,71	14.589,71	14.223,71	26.233,61	14.683,71
780	FIXED EXPENSE	-	-	-	-	-
	VARIABLE EXPENSE	770.175,15	946.715,60	66.183,74	41.853,02	210.746,71
TOTAL	TOTAL FIXED EXPENSES	118.060,00	111.541,00	50.740,00	108.195,50	100.028,14
	TOTAL VARIABLE EXPENSES	825.485,80	1.009.711,31	137.719,50	95.071,84	278.564,23
	TOTAL EXPENSE	943.545,80	1.121.252,31	188.459,50	203.267,34	378.592,37
	TOTAL TURNOVER	43.826.473,00	33.547.221,00	6.311.250,00	15.115.866,00	11.339.968,00
	TOTAL INCOME (GROSS PROFIT)	7.254.509,00	6.221.613,00	1.315.080,14	2.793.976,19	2.079.424,57
		BLACK SEA	HEADQUARTERS	SERDİVAN	BURSA	TOTAL
760	FIXED EXPENSE	-	701.000,00	109.000,00	60.000,00	-
	VARIABLE EXPENSE	37.191,13	1.412.940,60	29.988,72	191.838,25	226.674,01
770	FIXED EXPENSE	60.487,75	3.072.357,38	42.719,28	71.430,26	488.564,64
	VARIABLE EXPENSE	16.352,84	2.552.966,92	36.231,54	22.743,96	84.204,45
780	FIXED EXPENSE	-	13.691,83	-	-	-
	VARIABLE EXPENSE	7.524,37	-	-	-	2.035.674,22
770	TOTAL FIXED EXPENSES	60.487,75	3.787.049,21	151.719,28	131.430,26	488.564,64



TOTAL VARIABLE EXPENSES	61.068,34	3.965.907,52	66.220,26	214.582,21	2.346.552,68
TOTAL EXPENSE	121.556,09	7.752.956,73	217.939,54	346.012,47	2.835.117,32
TOTAL TURNOVER	777.247,00	41.616.781,00	14.423.102,00	16.014.037,00	110.140.778,00
TOTAL INCOME (GROSS PROFIT)	209.237,23	9.954.349,50	6.306.106,07	3.876.548,30	40.010.844,00

Table 3 displays 760 marketing expenses. According to each license plate, vehicle maintenance-repair expenses and fuel expenses are revealed separately. To this end, it is shown as a single account by specifying as multiple accounts. Since the costs in the promotional truck mobile showroom could not be clearly distributed to the relevant activity center, they were added to the costs of the headquarters. Nevertheless, the total of

the fair participation expenses is a common expense and could not be distributed to the activity centers and was added to the costs of headquarters. Since the benefit and effectiveness of TV radio advertisements and training expenses cannot be measured on the basis of activity center, they were added to the cost of the headquarters.

Table 3. Table of costs of marketing, selling and distribution expenses and general administrative expenses

Costs of marketing, selling and distribution expenses		Costs of general administrative expenses	
Category of Expense	Type of Expenses	Category of Expense	Type of Expenses
Variable Expense	Vehicle Fines	Fixed Expense	Normal Wage Expenses
Variable Expense	Work Clothes Clothing Aid	Variable Expense	Additional Payment Excluding Salary - Allowance
Variable Expense	Forklift-Machine and Fixture Maintenance and Repair Expenses	Fixed Expense	Annual Leave Fees
Variable Expense	Promotion Truck, Mobile Showroom Project Expenses	Fixed Expense	Health Insurance (SGK) Premiums
Variable Expense	Exhibition Participation Expenses	Fixed Expense	Health Insurance (Bağkur) Premiums
Variable Expense	Internet Sales Commission Expenses	Fixed Expense	Severance Pay Expense
Variable Expense	Marketing Sales Travel Expenses	Fixed Expense	Food Expenses
Variable Expense	TV Radio Advertising Expenses	Fixed Expense	Personnel Transportation Expenses
Variable Expense	Vehicle Insurance-Hull Policy Expenses	Variable Expense	Electricity Expenses
Fixed Expense	Workplace Rents	Variable Expense	Telephone Expenses
Variable Expense	Vehicle Rents	Variable Expense	Cargo and Courier Expenses
Variable Expense	Highway Pass Expenses	Variable Expense	Workplace Maintenance
Variable Expense	Training Expenses	Fixed Expense	Financial Consultancy Expenses
Variable Expense	Stationery and Printed Document Expenses	Variable Expense	Certified Public Accountancy Expenses
Variable Expense	Accommodation Expenses	Variable Expense	Water Expenses
Variable Expense	Various Material Expenses Used in Warehouses	Variable Expense	Contract Manufacturing Fees
Variable Expense	Transportation Expenses for Sales	Fixed Expense	Teamgram Payments
Variable Expense	Marketing-Sales Miscellaneous Expenses	Variable Expense	Travel Expenses (Abroad)
Variable Expense	Fuel Expenses (Multiple Accounts)	Variable Expense	Social Media Consultancy Expenses
Variable Expense	Vehicle Maintenance and Repair Expenses (Multiple Accounts)	Variable Expense	Stationery and Printed Document Expenses
Variable Expense	Forklift-Generator Fuel Expenses	Variable Expense	Aid and Donations
Variable Expense	Rental Car and External License Plate Small Amount Expenses	Fixed Expense	Room Dues
Variable Expense	Representation Expenses	Variable Expense	Expenditures for Barcode



Table 4. Table of Finance Expenses

CATEGORY OF EXPENSE	TYPE OF EXPENSE
Variable	Bank TL. Loan Interests
Variable	Pos Costs
Fixed	Letter of guarantee. Commission. deductions
Variable	Currency Difference Expenses

In the current costing system, the company can access the details of the sales turnover, gross profitability of the activity centers and how much these are in which product groups, but cannot see further. The company can see its net profit by subtracting the costs incurred during the year from the total gross profit. It cannot reduce this net profit to the branch or marketing/region, so it cannot see which product is profitable in which market. The present situation makes the business uncontrolled and causes not to see the possibility of making low profits although it generates high income. In this way, the market investments in the business weaken or the accuracy of the investment decisions is questioned. With reference to this point, we first need to calculate the contribution margin on the

basis of product group as a result of the distribution of the activity costs. It is a must to reveal which product group is more profitable in which activity center. While calculating the contribution margin, the gross profit is obtained by subtracting the purchase price from the selling price of the product. After that, the variable costs of the relevant product group are subtracted from the gross profit and the contribution margin of that product group is calculated. It is a necessity to find the contribution margin according to the activity centers. Thus, it can be seen which product group has a high contribution margin in which market. Table 5 displays the total contributions by regions.

Table 5. Total Contribution Margin by Regions

CATEGORY OF EXPENSE	IST.EUROPE	MEDITERRANEAN	IST.ANATOLIA	ANKARA
760				
FIXED EXPENSE	-	-	-	-
VARIABLE EXPENSE	40.836,94	48.406,00	57.312,05	26.985,21
770				
FIXED EXPENSE	118.060,00	111.541,00	50.740,00	108.195,50
VARIABLE EXPENSE	14.473,71	14.589,71	14.223,71	26.233,61
780				
FIXED EXPENSE	-	-	-	-
VARIABLE EXPENSE	770.175,15	946.715,60	66.183,74	41.853,02
TOTAL				
TOTAL FIXED EXPENSES	118.060,00	111.541,00	50.740,00	108.195,50
TOTAL VARIABLE EXPENSES	825.485,80	1.009.711,31	137.719,50	95.071,84
TOTAL EXPENSE	943.545,80	1.121.252,31	188.459,50	203.267,34
TOTAL TURNOVER	43.826.473,00	33.547.221,00	6.311.250,00	15.115.866,00
TOTAL INCOME (GROSS PROFIT)	7.254.509,00	6.221.613,00	1.315.080,14	2.793.976,19
CONTRIBUTION MARGIN	6.429.023,20	5.211.901,69	1.177.360,64	2.698.904,35

In Table 5, the contribution margins of the activity center are indicated. The activity centers with high or low contribution margins or the contribution margin of each activity center can be evaluated separately. While calculating the contribution margin on the basis of the product group, the sum of the variable expenses of the relevant activity center is shared equally with the number of product groups. The reason for this process is

that equal time is allocated in the marketing of each product group. While it would also be very meaningful to distribute fixed costs in the present study, this activity was not carried out because it would be the subject of another study. In addition, the contribution margin of activity centers on the basis of product group is displayed in Table 6.

Table 6. Analysis of Gross Profit and Contribution Margins in Product Groups by Activity Center

		IST.EUROPE	AKDENİZ	IST.ANATOLIA	ANKARA	
GROSS PROFIT AND	Profile	Gross Profit	1.548.856,84	2.358.818,53	63.188,64	284.228,27
		Contribution Margin	1.497.263,97	2.295.711,57	54.581,17	278.286,28
		Difference	51.592,86	63.106,96	8.607,47	5.941,99
	Bedding fabric	Gross Profit	2.473.592,94	1.578.711,24	306.169,47	152.878,91
		Contribution Margin	2.422.000,08	1.515.604,28	297.562,00	146.936,92
		Difference	51.592,86	63.106,96	8.607,47	5.941,99
	Sponge	Gross Profit	453.620,01	267.527,89	145.379,79	627.128,44
		Contribution Margin	402.027,15	204.420,93	136.772,32	621.186,45



	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Chipboard	Gross Profit	634.293,42	181.865,83	127.319,51	207.746,92
	Contribution Margin	582.700,56	118.758,87	118.712,04	201.804,93
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Wire	Gross Profit	512.894,65	471.826,02	-	91.405,85
	Contribution Margin	461.301,79	408.719,06	- 8.607,47	85.463,86
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Fiber	Gross Profit	380.329,68	76.649,81	230.435,84	25.767,70
	Contribution Margin	328.736,82	13.542,85	221.828,37	19.825,71
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Felt	Gross Profit	322.800,61	37.785,46	127.303,36	7.567,08
	Contribution Margin	271.207,75	25.321,50	118.695,89	1.625,09
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Upholstery fabric	Gross Profit	355.869,84	52.292,07	53.622,59	731.749,71
	Contribution Margin	304.276,98	-10.814,89	45.015,12	725.807,72
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Lining	Gross Profit	172.099,78	154.388,38	20.434,13	53.110,18
	Contribution Margin	120.506,92	91.281,42	11.826,66	47.168,19
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Material	Gross Profit	142.017,14	247.358,66	134.193,67	167.486,54
	Contribution Margin	90.424,28	184.251,70	125.586,20	161.544,55
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Mechanism	Gross Profit	101.215,68	567.678,91	5.183,71	163.569,01
	Contribution Margin	49.622,82	504.571,95	- 3.423,76	157.627,02
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Package	Gross Profit	55.008,10	-2.132,75	21.231,53	41.299,03
	Contribution Margin	3.415,24	- 65.239,71	12.624,06	35.357,04
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Leg	Gross Profit	87.967,55	89.466,24	27.055,18	173.980,67
	Contribution Margin	36.374,69	26.359,28	18.447,71	168.038,68
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Adhesive	Gross Profit	12.703,44	104.874,40	29.224,67	5.228,61
	Contribution Margin	- 38.889,42	41.767,44	20.617,20	- 713,38
	Difference	51.592,86	63.106,96	8.607,47	5.941,99
Screw	Gross Profit	1.134,63	34.109,52	23.912,35	57.813,81
	Contribution Margin	-50.458,23	-28.997,44	15.304,88	51.871,82
	Difference	51.592,86	63.106,96	8.607,47	5.941,99

There are 3,286 product types in the company. Due to the fact that the profit margins of the product groups are the same, it was deemed suitable to conduct the contribution margin analysis at the product level. Moreover, special software is required to perform contribution margin analysis at the product level. For this reason, analysis was made at the product group level.

With the activity-based costing created in the company, the contribution margins obtained from 16 product groups in 9 activity centers were examined. While the contribution margin of the product group in one activity center is very high, the contribution margin of the same product group in another activity center may be very low or negative, or vice versa.

The contribution margins and rates in the product group of Istanbul Europe activity center are indicated in Table 7. The product with the highest contribution margin in this activity center is bedding fabric with 37.37%, which was sold to 49 different customers with an average gross margin of 28%. The second item was the profile, which was sold with a gross profit

of 12% to 17 different customers with 23.10%. The weight of these two items in the total contribution margin was 60.47% in all product groups. The contribution margin of the bedding fabric and profile has a big difference with the particle board, which is the third item with a contribution margin of 8.99%. The contribution rate of the arm product group is very close to zero. The sales made in the product group barely covered the equally distributed variable expenses, and a contribution margin of 104.88 TL was calculated for the remainder. When examined in detail, it was understood that only 1 item of product was sold to 2 companies. On the other hand, it is seen that the adhesive and screw product groups are not able to meet even the variable costs that are evenly distributed. Only 6 items of products from the adhesive product group were sold to 7 different customers. In the screw group; 8 items of products were sold to 4 different customers. While the arm product group causes a waste of time, the screw and adhesive group is seen to be a waste of time.

When the marketing expert was interviewed about these product groups, he informed that there was intense competition



in the relevant market and that the sales prices of the products were almost half as low as in the market, and this was confirmed with some customers. Considering all these details, the relevant marketing expert should focus on the marketing of the bed fabric product group with high contribution margin and gross profitability, and selling more to the existing customers instead of continuing to market the above-mentioned products because they cannot increase the profit margin in the product groups.

Also, it is suggested that, by giving up the marketing of screw, arm and adhesive product groups, new customers can be gained in total. And marketing service can be provided to these customers, starting with the bed fabric product group. Thus, total contribution margin will increase and the company will increase its profit by using its resources more efficiently.

Table 7. Contribution margins and rates in the product group of Istanbul Europe activity center

CONTRIBUTION MARGIN	Bedding fabric	2.422.000,08	37,37%
	Profile	1.497.263,98	23,10%
	Chipboard	582.700,56	8,99%
	Wire	461.301,79	7,12%
	Sponge	402.027,15	6,20%
	Fiber	328.736,82	5,07%
	Upholstery fabric	304.276,98	4,70%
	Felt	271.207,75	4,18%
	Lining	120.506,92	1,86%
	Material	90.424,28	1,40%
	Mechanism	49.622,82	0,77%
	Leg	36.374,69	0,56%
	Package	3.415,24	0,05%
	Arm	104,88	0,00%
	Adhesive	- 38.889,42	-0,60%
Screw	- 50.458,23	-0,78%	
TOTAL	6.480.616,29	100%	

The distribution of contributions in the product group of the Black Sea activity center is indicated in Table 8. The product with the highest contribution margin among the total contribution margins, with 67.57%, was bedding fabric which was sold to 14 different customers and with an average of 30% gross profit margin. The second item was upholstery fabric, which was sold to 16 different customers in the rate of 36.90%, with a gross profit of 47%, as 43 different products. The fact that the firm is new in the market and the marketing expert is new in the sector causes not to earn enough income in an activity center reserved for the company yet. In return, this situation also causes the contribution margin to be low. When the regional market is examined, it serves the provinces of Kastamonu, Amasya, Samsun, Ordu, Giresun, Trabzon, Rize, Gümüşhane and Erzurum. The longest route distance between Kastamonu and Erzurum is 931 km, a journey of approximately 11 hours. The present distance causes the marketing expert to

lose days/time. The company has one customer in Erzurum and one in Rize, and two in Trabzon. The ratio of the revenue obtained from the customers in these provinces to the total turnover of this activity center is 5.8%. The sector center in the regional market is Samsun. The number of furniture manufacturers in Samsun is much higher than the number of manufacturers in other provinces of the region. There are 110 customers on a 320 km, 4-hour route such as the provinces of Amasya, Samsun, Ordu, Giresun in the records of the company. By having the marketing expert communicate with customers in this short space, the company can quickly penetrate this market by reducing its gross profitability in the upholstery fabric and bedding fabric product group with a high contribution margin. In order for the region to become productive in a short time, scarce resources such as time should be used in the most efficient way.

Table 8. Contribution margins and rates in the product group of the Black Sea activity center

CONTRIBUTION MARGIN	Bedding fabric	102.699,76	67,57%
	Upholstery fabric	56.076,64	36,90%
	Package	18.136,75	11,93%
	Chipboard	2.326,83	1,53%
	Fiber	2.001,80	1,32%
	Leg	1.286,88	0,85%
	Arm	168,80	0,11%
	Material	- 2.418,99	-1,59%
	Lining	- 2.502,38	-1,65%
	Screw	-3.253,87	-2,14%
	Sponge	-3.597,45	-2,37%
	Adhesive	-3.707,86	-2,44%
	Mechanism	-3.780,92	-2,49%



	Profile	- 3.816,77	-2,51%
	Wire	- 3.816,77	-2,51%
	Felt	- 3.816,77	-2,51%
	TOTAL	151.985,68	100%

The distribution of the Headquarters activity center in the product group and the contribution margins are presented in Table 9. The product with the highest contribution margin among the total contribution margins is bed fabric with the ratio of 37.25%. The second item was upholstery fabric with 20.58%. The remarkable point in this center is that the contribution margin of the arm product group constitutes a contribution share of 44,224.85 TL, which is close to 1%. Considering that there is no marketing activity here, the contribution of the arm product group is higher in this center compared to other centers. The product groups in which the contribution margin is negative are; chipboard, adhesive, felt and wire. Due to the hot sales the headquarters makes, the segment it serves is boutique manufacturers rather than industrial productions. The sales turnover was not observed to be high because the manufacturers of this style use their chipboard product groups ready-made. Furthermore, in the same customer portfolio, the adhesive is important in terms of price. For this reason, the company made a campaign by acting

aggressively in the pricing of the adhesive product group, drawing attention to the cost of the adhesive product by selling the adhesive product, and focused on the strategy of selling different products besides the adhesive and making a profit from the whole. This campaign could not be measured and the result could not be calculated, either. The customers who both bought adhesive and another product could not be reported, and even if it had been reported, the question of whether the customer who bought adhesive would already buy the other product could not be answered at all. Whether this campaign has a profit or not created a result which is based on the experience of the company. The felt product group, on the other hand, has a very low turnover since it is a product group that is not sold in the market in hot sales, and is generally used by industrial manufacturers who buy in bulk. Another product with negative contribution margin is wire. The wire product group is not usually a hot sale or retail product. Hence, it was almost never sold and its turnover was close to zero, and therefore its contribution margin was negative.

Table 9. Contribution margins and rates in the product group of Headquarters activity center

CONTRIBUTION MARGIN	Bedding fabric	2.141.354,28	37,25%
	Upholstery fabric	1.183.111,36	20,58%
	Sponge	964.149,13	16,77%
	Material	685.340,42	11,92%
	Leg	510.753,56	8,88%
	Mechanism	311.416,49	5,42%
	Fiber	200.390,99	3,49%
	Profile	96.864,67	1,68%
	Lining	55.630,18	0,97%
	Arm	44.224,85	0,77%
	Package	23.300,23	0,41%
	Screw	22.143,91	0,39%
	Chipboard	-15.978,40	-0,28%
	Adhesive	-46.137,31	-0,80%
	Felt	-205.032,02	-3,57%
	Wire	-222.480,18	-3,87%
TOTAL	5.749.052,16	100%	

The distribution of the Serdivan branch activity center by product group is displayed in Table 10. Among the total contributions, the product with the highest contribution margin is sponge with the ratio of 36.72%. The second item was upholstery fabric with 19.70%. The remarkable point in this center is that the contribution margin of the arm product group constitutes a contribution margin of 49,244.86 TL, which is close to 1%. Considering that there is no marketing activity here, the contribution of the arm product group is higher in this center compared to other centers. Profile was observed to be the product group in which the contribution margin is negative.

Owing to the hot sales Serdivan makes, the segment it serves is boutique manufacturers and upholsterers rather than industrial productions. Manufacturers of this style do not use profiles. Particularly, no marketing activities are observed in this center, and the needs of the customers who come to the workplace are fully met. The reason why the bedding fabric product group contribution margin is high in each center and low in this center is that there are 4 bed manufacturers in or around this center's customer portfolio. The company sold bedding fabrics to 4 manufacturers. Additionally, there are no other bedding fabric vendors providing local service in the region.



Table 10. Contribution margins and rates in the product group of Serdivan activity center

CONTRIBUTION MARGIN	Sponge	2.293.019,43	36,72%
	Upholstery fabric	1.230.309,47	19,70%
	Material	879.422,80	14,08%
	Leg	500.157,92	8,01%
	Screw	257.742,31	4,13%
	Mechanism	252.443,97	4,04%
	Fiber	184.781,93	2,96%
	Lining	165.112,63	2,64%
	Package	162.758,20	2,61%
	Adhesive	134.257,00	2,15%
	Bedding fabric	93.163,32	1,49%
	Arm	49.244,86	0,79%
	Felt	27.704,04	0,44%
	Wire	9.913,37	0,16%
	Chipboard	8.132,08	0,13%
	Profile	-4.138,77	-0,07%
TOTAL	6.244.024,56	100%	

4. CONCLUSION

In the present study, the total gross profitability of the company operating in the furniture sector can be seen in the regions where it sells. The fact that the contribution margin, which is the more detailed framework, cannot be reached and the contribution margin cannot be obtained on the basis of the product group causes the company not to make the right or necessary decisions in the relevant market, and to the inefficient use of resources. For this reason, the need for the establishment of an activity-based costing system appeared. With activity-based costing, much more detailed data can be obtained. With these data, decisions can be made according to the product group and the relevant market. While establishing this structure; in 2021, a total of 9 fields of activity were determined with regional marketers and branches. All expense accounts of the company were divided into fixed and variable expenses. All expenses were analyzed on the basis of the journal entry for which activity center they were incurred and then associated with the relevant activity center. Common expenses such as head office staff (accountants, security guards, purchasing/supply employees) wages, national or international fair expenses they participate in, and advertising were transferred to the headquarters branch cost pool. Thus, variable and fixed costs related to activity centers were detected. The turnover and weighted average sales maturity information of each activity center was withdrawn from the system and the financial expenses of the enterprise were distributed to the relevant center accordingly. The gross profitability obtained from the sales made by the activity centers (obtained by multiplying the sales amount by subtracting the purchase price from the sales price) was detected. Here the purchase cost was not created by adding the product transportations to the purchase price, if any, instead, they were tracked in the transportation expenses account and accumulated in the cost pool of the headquarters branch. Together with the gross profit calculation, it was possible to calculate the contribution margin of each activity center. Contribution margins were calculated by subtracting the variable expenses of the relevant center from the gross profit of the relevant center. To analyze the contribution margin on a product group basis, the variable cost

was distributed equally to 16 product groups and the contribution margin was calculated. According to the obtained results, in order to increase the profit of the enterprise and use the resources with maximum efficiency, suggestions were made as a result of the analysis.

In marketing, the contribution margin of the Istanbul Europe center is 6,429,023,20 TL, which has the highest contribution share compared to other centers. The fact that the number of employees in this region is only one person and there are many more potential customers and sales in the market, but the existing employees are working at almost their theoretical capacity in terms of time limitation causes the opportunity to be evacuated in the market. Therefore, very fast and precise investment should be made in these markets. One or two personnel to be added to the current market will not reduce the activity center contribution margin in terms of costs, and each additional sale will positively affect the gross profit. Owing to the fact that the branches do not have marketing activities, it is a must to attract more customers to the workplaces so as to increase their contribution margins, namely their commercial profits. This can be done through social means such as various customer relations, or it can be done with pricing strategies. For example, the arm product group, which creates an extra cost because it cannot be sold in all activity centers, can make contribution in the headquarters and Serdivan branch. By reducing all sales of these products to the point where the contribution margin can be reduced to zero, sales can be accelerated and more customers can be attracted to the workplace. Furthermore, by giving up the sale of the arm product group in the marketing regions, waste of time can be avoided and the actual capacity of marketing experts can be expanded. In this way, more opportunities to market new customers or existing high contribution products can be provided. Such an approach would increase the total contribution margins both in the branches and in the marketing regions. Besides, in the adhesive sales of the branches, either the campaign should be terminated and gross profit should be increased, or the effects of the pricing policy should be



calculated and the results of the campaign should be reported and analyzed.

Looking at the Black Sea region's center of activity, there is a number of customers that a marketing expert cannot reach with his/her actual capacity. Here, very long routes take up the time of the employee. The time spent and the contribution gained create different alternatives. The marketing expert's lack of experience in the sector also slows down his/her time along with the rate of increase in the contribution margin. If an additional staff member with experience in the sector is employed for this region and the branch is divided by two, the contribution margin will increase rapidly in a short time. If the company is hesitant to consider the risk that the contribution share will decrease to negative manner with the additional personnel cost, then it should reduce the cost and ensure effective and efficient use of time by keeping the existing staff responsible only for the customers between Amasya and Giresun, which are already registered more than 100 in the system. In this way, the company gives up 4 customers in the remote area and 5.7% turnover for a certain period of time. While the company currently fills its actual capacity with 36 customers, it can exceed 50 customers in the alternative offered, and in a short period of time, it can make its contribution margin much higher than the present one.

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PREDICTIVE ANALYSIS OF FAULTS IN ELECTRIC VEHICLES

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ABSTRACT

Electric vehicle (EV) development has produced a number of advantages in terms of sustainability and energy efficiency. The dependability and safety of EV systems must still be ensured, though. In-depth study of predictive modeling methods for EV fault finding is provided in this research. The work focuses on the creation and use of defect prediction models utilizing real-time data gathered from EV systems, building on the foundations of predictive analysis and machine learning. The approach for data collecting, preprocessing, feature extraction, and model training is described in detail, with an emphasis on the necessity of reliable and representative data for successful fault diagnosis. Additionally, it analyzes the performance criteria employed for assessing the precision and dependability of these models and illustrates the difficulties in incorporating predictive analytic models into EV designs. The research results illustrate how predictive analysis may be successfully applied to problem detection and diagnosis, highlighting its potential to improve the safety and effectiveness of EV systems. In order to achieve more robust and accurate defect prediction in EVs, the article finishes with insights into future research areas, highlighting the need for more breakthroughs in data gathering techniques, model optimization, and real-time monitoring systems.

KEYWORDS—*Electric vehicles; predictive analysis; fault detection; machine learning; data collection; data preprocessing; feature extraction; model training; performance metrics; real-time monitoring;*

I. INTRODUCTION

The use of electric vehicles (EVs) as a sustainable and environmentally friendly means of transportation has significantly increased. As EV technology develops, it becomes more and more important to guarantee the dependability and performance of electric vehicle systems. The capacity to correctly foresee and detect failures in EV components is a crucial factor in this respect. Techniques for predictive analysis provide promising ways to identify possible faults beforehand, enabling proactive maintenance and raising the general safety and effectiveness of EV operations. With an emphasis on the creation and assessment of prediction models to recognize and minimize probable defects in EV systems, this research article intends to investigate the use of predictive analysis for fault detection in electric vehicles.

This study intends to add to the body of knowledge that is developing in the area of fault prediction for electric cars. We will design and test prediction algorithms that can precisely identify and anticipate failures in various components using previous data gathered from EV systems. Data gathering from actual EVs, data preparation methods, feature selection, and the use of machine learning algorithms for fault identification are all part of the study project. Utilizing suitable assessment measures, the efficacy of the proposed models will be assessed, and comparisons with current methodologies will be made. The findings of this study might be extremely helpful in developing proactive maintenance plans and defect detection systems for electric vehicles, which would eventually increase their dependability and driving pleasure.

II. LITERATURE REVIEW

Recent studies have focused a lot of emphasis on predictive analysis in the context of problem detection and prognosis in electric vehicles. The use of machine learning techniques for predictive fault analysis has been examined in a number of research. One example is the predictive fault analysis method put out in [1] based on machine learning techniques. Their research shows how well the method works for locating and diagnosing issues with electric vehicle systems. This study intends to add to the body of knowledge that is developing in the area of fault prediction for electric cars. We will design and test prediction algorithms that can precisely identify and anticipate failures in various components using previous data gathered from EV systems. Data gathering from actual EVs, data preparation methods, feature selection, and the use of machine learning algorithms for fault identification are all part of the study project. Utilizing suitable assessment measures, the efficacy of the proposed models will be assessed, and comparisons with current methodologies will be made. The findings of this study might be extremely helpful in developing proactive maintenance plans and defect detection systems for electric vehicles, which would eventually increase their dependability and driving pleasure. [2] Compared machine learning techniques for defect diagnostics in electric vehicle engines in a different research.

A defect detection technique for electric vehicle battery packs based on adaptive LASSO and support vector machines (SVM) is also proposed in [3]. In addition, [4] describes a unique unsupervised learning approach for diagnosing electric vehicle faults. In addition,



[5] suggests a hybrid deep learning model for defect prediction and diagnostics in electric car batteries. Contributions to the field of electric vehicle fault diagnosis and prognosis have been made by [6] and [7]. A prediction technique for electric vehicle failures is presented in [8] and is based on correlation analysis and a dynamic clustering algorithm. Using machine learning approaches, [9] and [10] concentrates on failure prediction and diagnostics of electric vehicle batteries.

III. METHODOLOGY

A. Data collection and preprocessing

Sensors, on-board diagnostic systems, and maintenance logs are just a few of the places where information on electric vehicles and their parts is gathered. Voltage, current, temperature, and operational circumstances are only a few of the many characteristics covered by the data. Data are preprocessed after collection, which entails a number of procedures. In order to remove any outliers, missing numbers, or discrepancies, data cleansing is first carried out. To assure compatibility and eliminate any scale effects, the data is then normalized or standardized. Additionally, new features that extract crucial information from the raw data can be created using feature engineering approaches. The preprocessed data is then ready for additional analysis.

B. Feature Selection and Extraction

The preprocessed data is chosen to represent the important features with the greatest influence on fault analysis. The most informative characteristics can be found using a variety of feature selection approaches, including statistical methods, correlation analysis, or machine learning algorithms. The chosen characteristics must be closely related to fault occurrences or offer understanding of the underlying fault patterns. Additionally, lower-dimensional representations that capture the crucial information while lowering the dimensionality of the dataset may be created by applying feature extraction techniques like principal component analysis (PCA) or wavelet transform.

C. Predictive modeling techniques for fault analysis

To create models that can forecast failures in electric vehicle systems, a variety of predictive modeling approaches are used. Predictive models may be created using machine learning methods like decision trees, random forests, support vector

machines (SVM), or neural networks. These models are trained using the preprocessed data, with the goal variable being the presence or absence of defects, and the chosen features acting as input variables. In order to generate predictions on fresh, unforeseen data, the models understand the underlying patterns and correlations between the characteristics and the problems.

D. Evaluation metrics and performance criteria

Numerous assessment indicators and performance criteria are used to evaluate the prediction models' performance. The overall predictive performance of the models may be assessed using metrics like accuracy, precision, recall, and F1-score. Confusion matrices can also provide light on the predictions that are true positive, true negative, false positive, and false negative. To gauge the effectiveness and discriminative capability of the models, additional performance metrics can be used, such as ROC curves and area under the curves (AUC). To guarantee the generalizability and robustness of the models, appropriate cross-validation procedures are used in their evaluation.

IV. DATASET DESCRIPTION

A. Data sources and collection methods

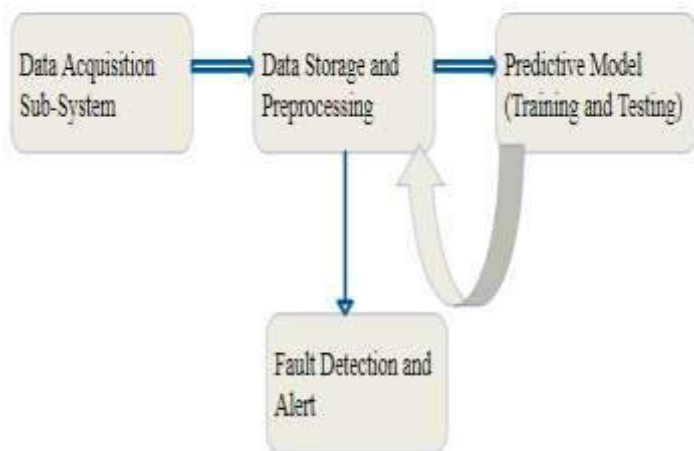
The information utilized in this study comes from a number of dependable and representative databases about electric vehicles and their parts. Real-world EV fleets, test setups, and publicly accessible databases are all possible data sources. The techniques for gathering data entail equipping electric cars with sensors and data recording equipment to record important variables including voltage, current, temperature, speed, and operating conditions. Data may also be gathered through maintenance logs and on-board diagnostic devices. The technique of gathering data guarantees a wide and thorough representation of various electric car models and usage trends.

B. Data preprocessing techniques applied

To guarantee that the gathered data is of high quality and appropriate for further analysis, preprocessing is applied. Data cleaning is one of the preprocessing approaches used to get rid of anomalies, missing numbers, and inconsistencies that might harm the study. Additionally, scale effects may be addressed and feature compatibility may be ensured by using normalization or standardization procedures. Data may also be aggregated or resampled to other time intervals depending on the precise requirements of the investigation. Additionally, additional features or transformations that extract pertinent information from the raw data, such as energy consumption, power efficiency, or operational profiles, may be created using feature engineering approaches.

C. Description of features and target variables

A variety of characteristics in the dataset are important for fault analysis in electric car systems. Voltage levels, current readings, temperature readings, motor speeds, battery state-of-charge (SoC), and different diagnostic metrics are examples of these capabilities. Contextual details like traffic conditions, weather forecasts, and location can also be added as features. The goal variable in the dataset shows whether there are systemic issues in electric vehicles or not. It can be multiclass, classifying several fault kinds, or binary, indicating whether or not there are problems. A thorough knowledge of the data structure and its significance to fault analysis in electric cars is made possible by the dataset description, which offers a clear overview of the features, their properties, and the target variable.



V. PREDICTIVE MODELING FOR FAULT ANALYSIS

A. Model selection and justification

For fault analysis in electric vehicle systems, suitable prediction models are used. The properties of the dataset and the unique needs of the research endeavor are taken into account while choosing a model. Different machine learning techniques can be taken into consideration, including decision trees, random forests, support vector machines (SVM), and neural networks. Assessing each model's advantages and disadvantages while taking criteria like interpretability, computational effectiveness, and prediction accuracy into account is part of the selection process. The selected models should be able to handle the dataset's characteristics and target variables with ease while also revealing the fundamental fault patterns in electric cars.

B. Training and testing procedures

Following the selection of the prediction model, the dataset is divided into training and testing subsets. By providing the input features and related target variables to the training subset, the models are trained. The models alter their internal parameters to reduce prediction errors as they understand the links between the characteristics and defects throughout the training phase. The prediction performance of the models is assessed after training using the testing subset, which is hidden from the models during training. The testing data gives an idea of how well the models work on real-world data and evaluates how well they generalize to new, unforeseen circumstances.

C. Model evaluation and validation

To determine the efficiency and dependability of the prediction models for fault analysis in electric vehicles, model assessment and validation are essential. To evaluate the performance of the models, many assessment criteria and methods are used. For binary classification tasks, common assessment measures include accuracy, precision, recall, F1-score, and area under the curve (AUC). Metrics like accuracy, recall, and F1-score can be computed separately for each class in multiclass classification. The performance of the models on various subsets of the data may be estimated using cross-validation approaches, such as k-fold cross-validation. This ensures that over fitting and dataset bias problems are reduced, allowing the models to generalize successfully to new data.

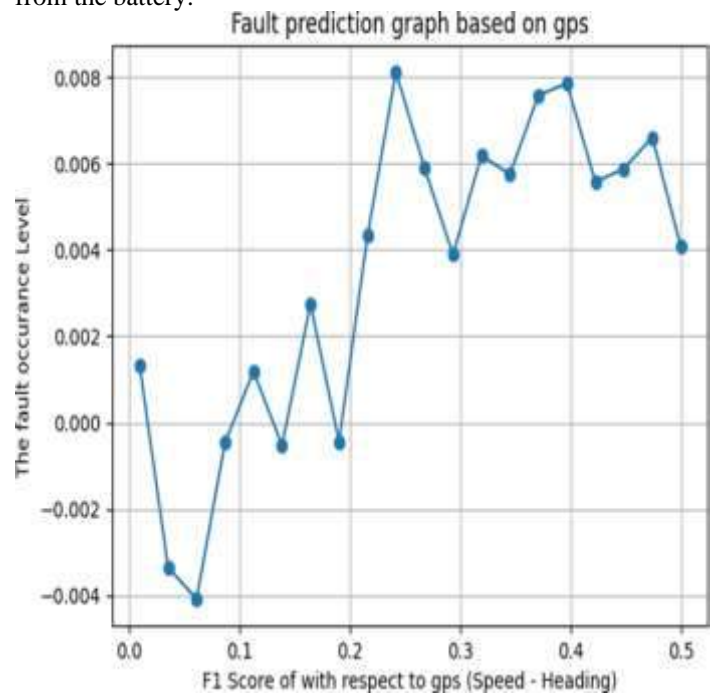
VI. RESULTS AND ANALYSIS

A. Experimental Results

The experimental findings from the fault analysis forecast models for electric vehicle faults are provided. Depending on the assessment criteria employed, the findings include a variety of performance indicators like F1-score, and AUC. These metrics give numerical evaluations of how well the models are able to forecast and diagnose errors in electric vehicle systems. To make the experimental results easy to visualize and comprehend, they are frequently presented as tables, charts, or graphs. The frequency of defects in electric vehicles varies depending on a number of variables. Here are a few elements and comparisons of the causes of the fault.

B. Fault prediction based on Speed and Heading

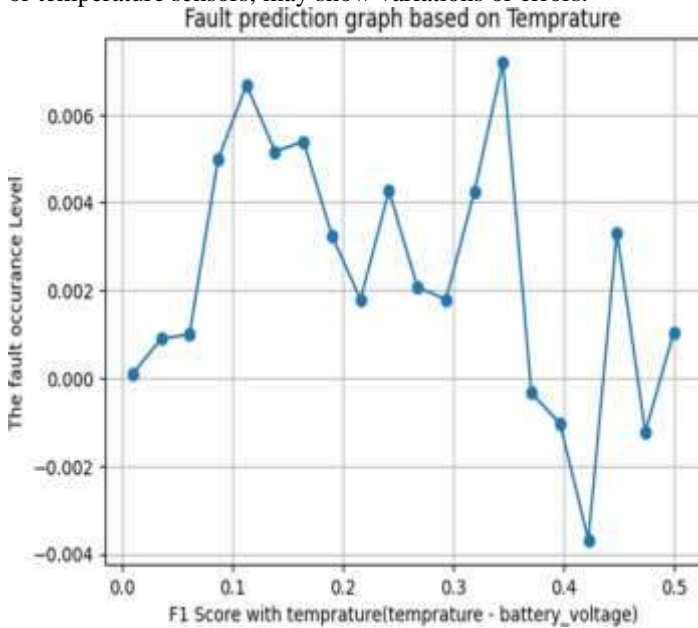
The electric vehicle may be exposed to various environmental conditions depending on its direction and speed. The efficiency and dependability of many vehicle components can be impacted by variables including temperature, humidity, traffic circumstances, and terrain differences. Variable degrees of stress may be placed on the suspension, brakes, and types of the electric vehicle by changes in heading and speed. High-speed maneuvers or frequent, sudden direction changes might place additional stress on these parts, thereby increasing wear and the chance of failure. Heading and speed changes can cause vibrations in an electric vehicle, which can compromise the structural integrity of its parts. Continuous vibration exposure can eventually wear out materials and cause them to degrade, especially at higher speeds or during frequent direction changes. Changes in heading and speed can have an impact on an electric vehicle's powertrain, which includes the motor, battery, and related control systems. Higher speeds or abrupt direction changes may need the motor to produce more power or draw more electricity from the battery.



C. Fault prediction based on temperature

The batteries in electric vehicles are sensitive to temperature variations. Extreme temperatures can harm the battery pack's performance and health in both hot and cold temperatures. In the battery, high temperatures can hasten chemical processes, which over time can increase deterioration and diminish capacity. When operating, the electric vehicle's motor and power electronics produce heat. The performance and dependability of these components might be impacted by high temperatures. Increased resistance, decreased efficiency, and thermal stress brought on by high temperatures might result in defects such as motor overheating, insulation breakage, or power electronics failure. As temperatures change, certain parts of an electric vehicle experience thermal expansion and contraction. Materials subjected to cyclic stress may eventually experience mechanical fatigue, stress concentrations, and component failure. The accuracy and dependability of sensors used in electric vehicles can be impacted by temperature variations. Under situations of severe heat, temperature-sensitive sensors, such as pressure sensors

or temperature sensors, may show variations or errors.



VII. CONCLUSION

The success of predictive analytic methodologies for fault analysis in electric vehicles has been proved by this study effort. We have effectively found and forecast defects in electric vehicle systems, improving their dependability and safety, through the creation and validation of predictive models. The experimental findings have demonstrated the models' capacity to recognize and categorize errors effectively, offering useful information for preventative maintenance and fault detection tactics. We have validated the effectiveness of our models by contrasting our findings with previously used techniques and benchmarks. This study advances the field of fault analysis in electric cars and establishes the groundwork for future studies aimed at enhancing the overall effectiveness and efficiency of electric vehicle systems.

Furthermore, the results of this study have important ramifications for how fault analysis is actually put into practice in electric cars. Proactive maintenance methods may be created to prevent probable problems and save downtime by utilizing predictive analytic techniques. Electric cars operate more efficiently overall, need less maintenance, and provide a better overall user experience when defects can be anticipated and fixed before they occur. The knowledge gathered from this research can also help in the development of sophisticated diagnostic systems for electric cars, allowing for real-time monitoring and early defect identification. Such systems can send timely notifications and advice to car owners, mechanics, and manufacturers, assuring quick and precise maintenance activities.

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EXPLORING THE VARIOUS FACETS OF ETHNOMEDICINE AND TRADITIONAL FOOD HABITS

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ABSTRACT

Throughout human history, food and medicine have been inseparable components essential to our well-being. Since ancient times, humans have been exploring their surroundings in search of natural resources for sustenance and healing purposes. This exploration extended to the realms of plants and animals as early humans sought to diversify their food sources and find remedies for various ailments and discomforts. The pursuit of vitality and longevity further motivated these early humans to experiment with whatever resources were available in their immediate environment. Through a process of trial and error, careful observation, and empirical reasoning, they consciously selected a wide array of biological materials to improve their health, alleviate pain, and address both physical and mental afflictions. This article provides an exploration of the diverse dietary practices which hold significance as ethnomedicine.

KEY WORDS: *Ethnomedicine, Dietary practises*

INTRODUCTION

Ethnomedicine refers to the age-old traditional knowledge of utilizing plants for medicinal purposes, practiced by ethnic communities. In India, ethnomedicine operates through two social streams. One is the local folk stream, predominantly found in rural and tribal villages across the country. This tradition is carried forward by numerous housewives, traditional birth attendants, bone setters, acupressure practitioners, specialists in eye treatments, snakebite remedies, and the village-level herbal physicians known as "vaidyas" or tribal physicians in tribal regions¹. These local healthcare traditions form an independent community-supported healthcare system at the village level, running parallel to the state-supported system. The potential of ethnomedicine often goes unnoticed due to the dominance of Western medicine.

The next tier of the traditional healthcare system is the scientific or classical systems. This category encompasses the structured and systematized medical knowledge with well-developed theoretical foundations and philosophical underpinnings, which are documented in numerous classical and regional manuscripts covering various branches of medicine and surgery. Examples of such systems include Ayurveda, Siddha, Unani, Amchi, Tibetan, and others. While ethnomedicine is primarily transmitted orally, certain systems like Ayurveda, Siddha, and Unani have a documented framework, which was historically practiced by the privileged class in society.

1. Native Cultural Tuning in India

A plethora of guidelines, originating from the collective wisdom of ancient times, regulated the lives of individuals in diverse ethnic groups across India.

Different regions and socio-cultural settings within rural societies had their own distinct systems. The socio-religious prescriptions, as outlined in the time-honored "Shodasa Samskaras" of India, provided the framework for leading a healthy life. Starting from the conception of a child (Garbhadhanam), the proper environment, precautions, mental states, and herbal remedies, along with the rituals of the third month (Pumsavanam) and the fourth month (Seemantham), accompanied by appropriate dietary supplements, all detail the steps to be followed for ensuring the well-being of the child². Stages such as Brahmacharya, the practice of celibacy for young adults, Grihasthasrama, the path of householders, Vanaprastha, the partial withdrawal from active life, and Sanyasa, the complete renunciation of worldly affairs, were created to cater to the needs of both individuals and society. However, in recent times, these stages have faced challenges due to the cultural homogenization brought about by the Western model.

The process of sprouting grains, such as Bengal gram and green gram, after soaking them in water, is a well-known traditional technique in India. This method enhances the nutritional value of the grains, with the body's assimilation of protein increasing by 10 to 60 percent compared to non-sprouted grains. From a nutritional perspective, this process also provides various enzymes that are easily absorbed by the digestive system. Sprouted grains are commonly consumed by pregnant and lactating mothers due to their benefits. In addition, there are other customary



practices observed among rural communities in South India, such as consuming rice that has been fermented overnight. In traditional societies, farmers who worked in the fields would consume "pazhankanji," which refers to rice from the previous day. When rice is left to ferment overnight, it undergoes a transformation that results in an increased concentration of diverse antioxidants. This property provides protection to farmers who work under the scorching sun. Additionally, fermented rice has been found to contain isolated vitamins such as B6, B12, and more. Unfortunately, in recent times, the significance and utilization of fermented rice have diminished, and its usage is now limited.

The absence of traditional food preservation techniques in rural areas has resulted in a loss of nutrition. In the past, there were methods for drying and preserving seasonal foods, which allowed for year-round availability until the advent of canned foods. For instance, during the mango and jackfruit season, there was a rural tradition of sun-drying the fruit pulp, layer by layer, on herbal mats each day. Once dried, it would be stored in sealed containers with native herbal preservatives. This preserved fruit pulp served as a pure and nutritious supplementary source of food for both young and old individuals. Additionally, there were techniques for preserving raw mangoes in salt and storing dried jackfruit seeds in containers, among others. These affordable and highly nutritious food items have largely vanished, leaving behind no alternative practices. As a result, significant quantities of surplus seasonal food now go to waste.

2. Nourishing Food for Mother and Child

Reproduction and the continuation of cultural heritage across generations are fundamental aspects of any society. In agrarian societies, preparations for this process started at an early stage, and the birth of a child, especially a girl, held great significance. Engaging in practices such as offering prayers to conceive a girl and participating in ritual arts like 'theyyam' in Malabar. In traditional societies, the crucial period of pregnancy care begins as soon as the pregnancy is confirmed. The expectant mother is advised to adhere to a series of customary practices, with close monitoring from elder family members or villagers. In day-to-day activities, the pregnant woman receives special care, a practice that has been lost in modern lifestyles. The wealth of native wisdom on this subject is shared with the expectant mother, providing guidance and knowledge. Certain foods are considered taboo for pregnant women, while others are deemed mandatory. The do's and don'ts are all part of the folk wisdom surrounding pregnancy. For instance, specific household chores like sweeping the floor may be mandatory for those in the advanced stages of pregnancy, while other activities are restricted. These natural exercises were believed to facilitate easier

childbirth and are now endorsed by modern obstetricians. Many aspects of this traditional knowledge are unwritten but kept alive through intergenerational transmission, ensuring their preservation and continuity.

In most villages, pregnant women are typically not allowed to be outside during the night. They also face restrictions when it comes to visiting sick individuals or witnessing traumatic events. Additionally, in many families, there are guidelines for pregnant women to engage in activities such as listening to music, praying, and reading epics like the Ramayana. These practices reflect a profound understanding of the psychosomatic connections, which highlight the link between the mind and body. It is now recognized that turbulence in the mother's mind, fear, or extreme anxiety can have an impact on the unborn child. The traditional Indian science of Yoga offers various postures suitable for different stages of pregnancy, facilitating easier and more natural childbirth. There are also specific asanas and exercises for postnatal stages that help restore body tone after delivery. In conjunction with these practices, there are herbal preparations like medicated oils and herbal supplements that are used to support maternal health during pregnancy.

3. Child Wellness - An Indigenous Approaches

A distinct branch of Ayurveda focuses on the intricate procedures involved in traditional child care in India, similar to the field of pediatrics in modern medicine. In South India, there is a customary practice known as 'ora marunnu,' where a mild paste made from a combination of herbal ingredients like plant roots, dry fruits, and sometimes mixed with mother's milk, is given to newborns. Interestingly, this knowledge stems from the ancestral wisdom of elder women in the household and does not require medical intervention. 'Ora Marunnu' can be likened to a form of vaccination in modern medicine, as it is now understood that it helps prevent various childhood diseases while promoting enhanced brain activity. The coexistence of modern medical facilities and these native practices in South India today serves as evidence of the complementary nature of these two approaches. Other practices deeply embedded in the native culture include having pregnant women listen to music and religious discourses, as well as soothing children to sleep with lullabies. These practices cater to the well-being of both the mind and body, reflecting the holistic nature of the native traditions. Breastfeeding holds immense significance in infant care within Indian culture. Mother's breast milk is not only regarded as a vital source of nutrition but is also used medicinally, including as eye drops and for various aspects of baby care. Breast milk is believed to provide all the necessary nutrients and antibodies that a child requires. It fosters a bond of love between



the mother and child and establishes a strong connection. Studies have shown that individuals who receive prolonged breastfeeding tend to exhibit greater resistance to various illnesses. Native healers often utilize herbs such as Brahmi (*Bacopa monnieri* (L) Pernel) as stimulants in child care. Additionally, there are specific potions derived from animal sources that are administered to children during later stages. Since the foundation of good health is established during childhood, traditional healing practices assign great importance to child care. With the growing awareness of the detrimental effects of toxins and chemicals present in cosmetics, an increasing number of individuals are turning to herbal and traditional approaches in child care.

4. Traditional Food and Nutraceuticals

The key to the advancement of health foods, pharma foods, or nutraceuticals lies in enhancing the value of traditional natural diets. India boasts a heritage of health science spanning over 5000 years, where food has played a vital role in promoting a healthy life. People residing in diverse agroclimatic regions across the country have conducted experiments and developed a wide array of food, diet, and healthcare products, now referred to as ethnic foods and ethnic nutritional diets. As previously mentioned, Ayurvedic medicine encompasses a distinctive management system known as 'Rasayana,' which primarily involves a combination of food and medicinal herb recipes designed to rejuvenate the entire body system and restore its optimal health and functionality.

Phytonutrients, also known as phytochemicals, have a significant impact on the healthcare system and can offer various health benefits, including disease prevention and treatment, as well as addressing physiological disorders. Among the different groups of phytochemicals, polyphenols are widely distributed and contribute to the health-promoting effects of nutraceuticals. These polyphenols range from simple phenols to highly polymerized tannins. They not only protect plants from oxidative damage but also serve a similar role in humans by safeguarding tissues against oxidative decay, functioning as antioxidants. One remarkable characteristic of these phytonutrients is their capability to inhibit specific enzymes that trigger inflammation. Additionally, they can modify prostaglandin pathways, thereby safeguarding platelets from clumping.

served as a commendable initiative to bring together key stakeholders in the field of ethnomedicinal research within the country.

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CONCLUSION

The global demand for medicinal plants is on the rise, which serves as evidence of the widespread popularity and trust in herbal medicines and dietary supplements. This provides us with a significant opportunity to harness our abundant plant resources and traditional knowledge of medicinal practices for the betterment of humanity, while also contributing to the economic growth of our nation. In conclusion, the conference



TYPES AND SPREADING AREAS OF WEEDS SPREAD IN WINTER WHEAT FIELDS IN KARAKALPAKSTAN

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ANNOTATION

This article presents the results of identifying the types of weeds spread in the fields where winter wheat is cultivated in the irrigated lands of the southern, central and northern regions of the Republic of Karakalpakstan. 16, 17, 15 families, 55, 46, 47 species, 63, 53, 52 types of weeds were detected in the southern region Amudarya, Khojeyli in the center, and Chimboy in the north, respectively.

KEY WORDS: Republic of Karakalpakstan, regions, winter wheat, weeds, spreading, family, type, order, annual, biennial, perennial.

INTRODUCTION

Currently, there are more than 30,000 types of weeds in world agriculture, and the most damaging ones are 1,800 species [3] In the CIS countries, there are more than 2,000 types of weeds, and in Uzbekistan there are 841 types of weeds belonging to 72 families, of which 519 322 species are annual weeds, and 322 species are perennial weeds [2] Depending on their biological characteristics, growth, development, and soil-climatic conditions, some of these weeds are widespread, some are less common, and some are in the south, and some are in the north or west, and some are found in all cultivated areas [5].

According to the data, the weed species that cause the most economic damage in world agriculture are 59 families, 206 species of L. Holm, of which: 80 species are extremely dangerous and belong to the following families: Roaseae - 44, Solanaceae - 4, and the remaining 47 it was determined that there are 1-3 dangerous weed species in the family [4].

Also, more than 1030 types of weeds are spread in the CIS countries, 80-120 of the main harmful ones are, and it is noted that 15-20 types of extremely dangerous weeds can be found in one field [1; 6].

In the Republic of Karakalpakstan, where scientific research was carried out, in the next 50 years, the drying up of the Aral Sea, the deterioration of the natural components in the region, the increase in the salinity level of the soil cover, and the negative impact on the agrochemical, land reclamation and fertility indicators of the soil in the region, as well as the environmental conditions have been showing their influence on the formation of the flora.

Taking into account the above, in controlling weeds in agriculture, it is advisable to implement one or another

measures, taking into account the family, type and biological characteristics of the weeds spread in the fields.

It is known that the Republic of Karakalpakstan is divided into Southern, Northern and Central regions according to the soil and climate conditions, the salinity level of the soils of these regions, their mechanical composition, the depth of the underground waters and the sudden change in climatic conditions. It was also noted in our field expeditions that this had an effect on the spread of weed species spread on irrigated lands in the cross-section of the regions.

CONDITIONS OF CONDUCTING RESEARCH

Field expeditions were carried out in the Northern region Amudarya, Central region Khojeyli and Chimboy districts of the Southern region of the Republic of Karakalpakstan in order to determine the types of weeds spread in the areas where winter wheat is grown on irrigated lands.

Identification of weed species in winter wheat fields in irrigated lands was considered in three periods: in autumn - before sowing of winter wheat, in spring - during the growing season of winter wheat, and in summer - after harvesting of winter wheat grain.

RESULTS OF THE RESEARCH

According to our field expeditions, 21 families, 78 types of weeds belonging to 65 orders are spread in the winter wheat fields of the Republic of Karakalpakstan, of which: annual - 48, biennial - 4, perennial - 26. In particular, there are 15 species Poaceae, 14 Chenopodiaceae, 9 Brassicaceae, 9 Asteraceae, 5 Fabaceae, and the rest of the family, it was found that the weeds belonging to it constituted 1-3 species.



It was noted that annual weeds - 61.5%, biennial weeds - 5.1%, and perennial weeds - 33.3%, were the highest in terms of pollution index in winter wheat fields.

The southern region of the Republic of Karakalpakstan, where our scientific research was carried out, the Amudarya district borders to the north, the Karaozak district, the Gurlan district of the Khorezm region to the east, and the Gubadog district of Turkmenistan to the south and west. The terrain of the district is mainly flat, the climate is sharply continental, with an average annual rainfall of about 100 mm.

According to the information obtained during our field expeditions, 16 families, 63 types of weeds belonging to 55

families are distributed in the winter wheat fields of the southern region of Amudarya district, of which: annual - 40, biennial - 4, perennial - 20. (Figure 1). Among them, common in wheat fields, weeds belonging to the Poaceae family - 13, Chenopodiaceae - 12, Brassicaceae - 6, Asteraceae - 9, Fabaceae - 4, Papaveraceae family made up 3 types, and 6-14 more types of weeds were recorded in the winter wheat fields than in the central and northern regions. This indicates that in the southern part of the region, compared to the central and northern regions, the soil salinity level is relatively low, which indicates the favorable climatic conditions for the growth and development of plants.

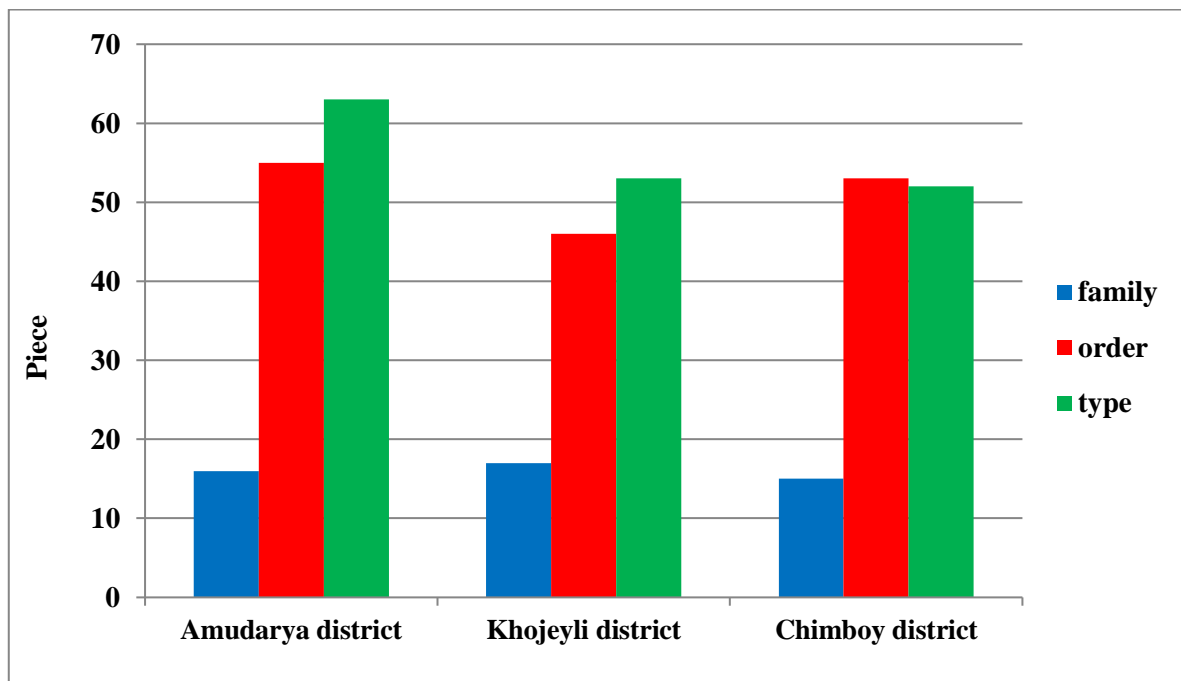


Figure 1. Spreading types of weed in winter wheat fields in the territory of the Republic of Karakalpakstan

When the spread of weeds was analyzed by species composition, it was found that annual weeds - 62.5%, perennial - 31.2%, biennial weeds - 6.3% were spread in a small amount, it was noted that annual weeds cause significant damage.

Therefore, when developing measures to control them, it is necessary to take into account the type of weed contamination in each crop field.

Khojeyli district, which is considered the central region of Karakalpakstan, is located on the left coast of Amudarya. It borders Nukus from the north, Karaozak from the southeast, Kanlikol, Shumanay districts from the northwest, and Urganch district of Turkmenistan from the west and south. The terrain is mainly flat. The climate is sharply continental, the vegetation period is 190-195 days, and the annual rainfall is 120 mm. The main branch of agriculture is cotton and grain growing.

The results of identifying the weeds spread in the winter wheat fields in the central region of the zone show that there are 17 families belonging to 46 orders and 53 types of weeds in the winter wheat fields, 32 (60.4%) are annuals, 2 (3,

8 %) and perennial weeds are 19 (35.8 %), annual weeds occupy a high index of damage.

Analyzing the weed family spread in the winter wheat fields, the most numerous are Chenopodiaceae - 10, Poaceae - 9, Brassicaceae - 8, Asteraceae - 5, Papaveraceae -3, Fabaceae - 3, Amarantaceae -2, Plumbaginaceae - 2, Plantaginaceae - 2, weeds belonging to the rest of the family made up 1 species each.

Chimboy district, which is located in the northern part of the Republic, where scientific research was carried out, borders Kegayli district to the west and south, Muynak district to the north, and Karaozak district to the east. Chimboy district is located on the northern right coast of the Republic of Karakalpakstan, along the coast of the "Kegeyli" channel. The climate of the district changes dramatically, the underground water is close, the summer is hot and dry, and the winter is cold.

In terms of climatic conditions, the northern and southern regions of the Republic of Karakalpakstan differ from each other. In the northern region compared to the southern region, the vegetation period is shorter by 15-18 days, the soil salinity is high, the relative humidity of the air is low and the



useful temperature during the vegetation period is low, there is little rainfall, there is a lot of drought, strong winds, and rapid evaporation of moisture from the surface of the soil in the summer months. In the northern region, it affects not only agricultural crops, but also the amount and types of weeds spread in cultivated fields.

The irrigated lands of Chimboy district have varying degrees of salinity. The results of the study of the families and types of weeds spread in the winter wheat fields of the district show that 15 families, 47 order, and 52 types of weeds are spread in the grain fields of the district, and in the winter wheat fields of the central and southern regions of the region, these indicators are 16-17 families, 46-55 orders, 53-63 species, and it was taken into account that in the northern region it is less than 1-11 pieces. Also, in the northern region, it was observed that annuals made the highest rate of contamination at 59.6% (31), biennials at 5.8% (3) and perennials at 34.6% (18).

In the northern region, annuals are widespread in winter wheat fields, preventing the growth and development of winter wheat from germination to the end of the growing season, causing a decrease in grain yield.

CONCLUSION

More than 78 species of 21 families, 65 orders of weeds are spread in the fields where winter wheat is grown in the southern, central and northern regions of the Republic of Karakalpakstan with varying degrees of salinity, of which: annuals - 48 (61.5%), biennials - 4 (5.1%), perennials - 26 (33.3%) species. In particular, there are 15 types of weeds belonging to the Poaceae family, Chenopodiaceae - 14, Brassicaceae - 9, Asteraceae - 9, and Fabaceae - 5 species, it was found that weeds belonging to the rest of the family constituted 1-3 species.

In the southern, central and northern regions of the republic, according to soil-climate conditions, soil salinity, land use and agrotechnical and chemical measures used to control weeds, the spread of weeds also differs from one another. 16, 17, 15 families, 55, 46, 47 orders, 63, 53, 52 types of weeds were identified in Chimboy districts in the north, including annuals - 40, 32, 31, biennials - 4, 2, 3, perennials - 20, 19, 18 species. It was noted in our field studies that annual weeds are dominant in causing damage to winter wheat fields, occupying the highest rate (62.5%, 60.4%, and 59.6%, respectively).

So, the data obtained in our scientific research show that the families and types of weeds spread in the winter wheat fields of Karakalpakstan with varying degrees of salinity are various in different regions of the zone under the influence of soil and climate conditions and the type of crop rotation.

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DISRUPTIVE INNOVATION: EMBRACING CHANGE AND DRIVING MARKETING SUCCESS

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ABSTRACT

In today's rapidly evolving business landscape, companies face the constant challenge of adapting to disruptive innovation to maintain a competitive edge. This research article aims to explore the concept of disruptive innovation and its profound impact on marketing strategies. By examining the principles of disruptive innovation, assessing its potential benefits and challenges, and identifying the success factors, this study provides insights on how organizations can embrace change and leverage disruptive innovations to achieve marketing success. The article also discusses key considerations for marketers to effectively navigate the dynamic environment shaped by disruptive innovation. This article concludes by summarizing the key findings and takeaways. It reinforces the importance of embracing disruptive innovation as a substance for marketing success and provides recommendations for organizations to proactively adapt to and capitalize on disruptive changes. The conclusion also highlights the need for continuous learning, flexibility, and agility in a world where disruptive innovation is an ever-present force.

KEYWORDS: *disruptive innovation, marketing strategies, success factors, dynamic environment, capitalize, disruptive changes, digital transformation, innovation strategy*

INTRODUCTION

The advent of disruptive innovations has revolutionized various industries, reshaping traditional business models and challenging established market leaders. This section provides an overview of the concept of disruptive innovation, its significance in today's business landscape, and the need for companies to embrace change to drive marketing success. By embracing change and leveraging disruptive innovation, companies can position themselves at the forefront of their industries, drive marketing success, and ensure long-term viability in an increasingly dynamic business environment.

1.Understanding Disruptive Innovation

The fundamental concepts of disruptive innovation, drawing on the seminal work of Clayton M. Christensen. It explores the disruptive innovation framework, its characteristics, and its potential to reshape industries. The section also discusses the differences between sustaining and disruptive innovation, emphasizing the unique challenges and opportunities associated with the latter.

2.The Impact of Disruptive Innovation on Marketing

The profound implications of disruptive innovation on marketing strategies. It explores how disruptive technologies and business models can shift consumer behavior, reshape market dynamics, and create new opportunities for companies. Additionally, it discusses the changing role of marketing in the face of disruptive innovation, highlighting the importance of agility, customer-centricity, and continuous adaptation.

3.Leveraging Disruptive Innovation for Marketing Success

The presents strategies and best practices for organizations to effectively leverage disruptive innovation to drive marketing success. It explores how companies can identify and seize disruptive opportunities, foster a culture of innovation, and align marketing efforts with the evolving needs and preferences of consumers. It also emphasizes the importance of experimentation, collaboration, and customer engagement in capitalizing on disruptive innovations.

4.Overcoming Challenges and Risks

Disruptive innovation is not without its challenges and risks. The potential obstacles that organizations may encounter when embracing disruptive innovation and provides insights on how to mitigate them. It covers topics such as organizational resistance to change, resource allocation, talent acquisition, and navigating regulatory and ethical considerations.

LITERATURE REVIEW

A comprehensive overview of existing research and scholarly work related to the topic of embracing change and driving marketing success in the context of disruptive innovation. By examining a range of studies, theoretical frameworks, and empirical evidence, this review seeks to identify key insights, emerging trends, and gaps in the literature.

Numerous scholars have explored the concept of disruptive innovation and its implications for marketing strategies. Christensen's seminal work on disruptive innovation (1997) highlighted the disruptive potential of new technologies



and business models in reshaping markets. Bower and Christensen (1995) emphasized the importance of adapting marketing strategies to capture value from disruptive innovations. This body of literature underscores the need for marketers to embrace change and proactively respond to disruptive forces.

As disruptive innovations continue to reshape industries, the role of marketing has evolved. Researchers have emphasized the importance of customer-centricity and agility in navigating disruptive environments. Zahay and Griffin (2004) discussed the concept of agile marketing, emphasizing the need for marketers to quickly adapt to changing market dynamics. Day (2011) argued for the strategic reorientation of marketing towards innovation and customer reengagement in disruptive contexts. This literature highlights the significance of embracing change and driving marketing success through dynamic and customer-focused strategies.

Scholars have identified various strategies for organizations to leverage disruptive innovation for marketing success. Teece (2010) proposed a dynamic capabilities framework, emphasizing the importance of strategic flexibility, resource allocation, and innovation management. Kotler et al. (2016) highlighted the concept of "marketing 3.0," which emphasizes purpose-driven marketing and leveraging technology for customer engagement. Hult et al. (2018) discussed the role of marketing in the era of digital disruption, emphasizing the need for digital transformation and data-driven decision making. This literature provides valuable insights into effective strategies for organizations to embrace change and drive marketing success amidst disruptive innovation.

While the potential benefits of disruptive innovation are significant, there are also challenges and risks that organizations must address. Researchers have examined various obstacles and pitfalls associated with embracing disruptive change. Christensen et al. (2015) discussed the challenges of managing disruptive innovation within established organizations, emphasizing the need for separate innovation units. Markides (2006) explored the tensions between sustaining and disruptive innovation and the organizational dilemmas they pose. This body of literature sheds light on the potential barriers and risks organizations may face when embracing change and driving marketing success.

The reviewed literature underscores the importance of embracing change and driving marketing success in the face of disruptive innovation. It highlights the evolving role of marketing, the strategies for leveraging disruptive change, the challenges involved, and provides case studies to illustrate the concepts discussed. However, there is still a need for further research to explore emerging trends, evaluate the long-term effects of disruptive innovation on marketing, and develop frameworks for successfully managing and capitalizing on disruptive change.

RESEARCH METHODOLOGY

1. Research Design

This research design to explore the phenomenon of disruptive innovation and its impact on marketing success. This design will allow for an in-depth understanding of the

experiences, perspectives, and perceptions of individuals involved in disruptive innovation and marketing practices.

2. Research Approach

It will employ an exploratory approach, aiming to uncover new insights and generate hypotheses about the relationship between disruptive innovation and marketing success. This approach will involve open-ended interviews and thematic analysis of the collected data.

3. Sampling

The purposive sampling is to select participants who have relevant expertise and experience in disruptive innovation and marketing. Participants may include entrepreneurs, marketing managers, innovation consultants, and industry experts.

4. Data Collection

Data will be collected through semi-structured interviews. The interviews will be conducted in-person or via video conferencing, depending on the feasibility and availability of participants. The interview guide will consist of open-ended questions designed to elicit rich and detailed responses. Probing and follow-up questions will be used to deepen the understanding of participants' experiences.

5. Data Analysis

Thematic analysis will be used to analyze the qualitative data obtained from the interviews. This approach involves identifying patterns, themes, and categories within the data.

OBJECTIVES OF THE STUDY

1. To explore the concept of disruptive innovation and its relevance in the contemporary business landscape.
2. To examine the impact of disruptive innovation on marketing strategies and the evolving role of marketing in disruptive environments.
3. To identify effective strategies and best practices for organizations to leverage disruptive innovation and drive marketing success.
4. To understand the challenges and risks associated with embracing disruptive change in marketing and explore methods to mitigate them.
5. To provide insights and practical recommendations based on case studies and examples of companies that have successfully embraced change and achieved marketing success through disruptive innovation.
6. To contribute to the existing literature on disruptive innovation and marketing by synthesizing key insights, identifying gaps, and suggesting avenues for further research.
7. To equip marketers and organizations with knowledge and understanding necessary to navigate the dynamic landscape shaped by disruptive innovation and drive marketing success in this context.
8. To highlight the importance of embracing change and fostering a culture of innovation to adapt to disruptive forces and maintain a competitive edge in the market.



SIGNIFICANCE OF THE STUDY

1. **Strategic Adaptation:** This study's significance lies in its exploration of how organizations can strategically adapt to disruptive innovation and drive marketing success. Understanding the principles and implications of disruptive innovation can enable businesses to proactively respond to market disruptions and capitalize on emerging opportunities.
2. **Competitive Advantage:** Embracing change and effectively leveraging disruptive innovation can provide organizations with a competitive advantage. By identifying and embracing disruptive technologies, business models, and market shifts, companies can position themselves ahead of competitors and capture new market segments, leading to increased market share and profitability.
3. **Enhanced Customer Engagement:** Disruptive innovation often reshapes consumer behavior and expectations. Studying the impact of disruptive change on marketing can help organizations understand and engage with customers more effectively. By embracing change, companies can deliver innovative products, services, and experiences that resonate with customers, leading to improved customer satisfaction and loyalty.
4. **Industry Transformation:** Disruptive innovation has the potential to transform entire industries. This study's significance lies in shedding light on the transformative power of disruptive change and providing insights into how organizations can navigate and shape industry landscapes. By driving marketing success in the face of disruption, organizations can contribute to industry evolution and growth.
5. **Managerial Guidance:** The study provides managerial guidance to marketing professionals facing the challenges of disruptive innovation. By examining successful strategies, case studies, and best practices, this research can equip marketers with actionable insights and practical frameworks for effectively managing disruptive change and driving marketing success.
6. **Academic Contribution:** This study contributes to the existing body of academic literature on disruptive innovation and marketing. By synthesizing and analyzing previous research, identifying gaps, and providing recommendations for future studies, this research adds to the theoretical understanding of disruptive change and its implications for marketing strategies.
7. **Societal Impact:** Disruptive innovation has far-reaching implications beyond business and marketing. By embracing change and driving marketing success, organizations can contribute to societal progress by introducing innovative solutions to pressing challenges, improving efficiency, and enhancing the overall consumer experience.

Overall, this study's significance lies in its potential to guide organizations in effectively navigating the disruptive

landscape, driving marketing success, and ultimately, fostering sustainable growth and competitive advantage in the face of rapid technological and market changes.

DISCUSSION

1. Exploring the concept of disruptive innovation and its relevance in the contemporary business landscape:

Research in this area can investigate into the fundamental concepts of disruptive innovation and its applicability in today's business environment. It can explore the characteristics and drivers of disruptive innovation, highlighting its relevance in the context of emerging technologies, changing consumer preferences, and market dynamics. This research can provide a solid foundation for understanding the transformative potential of disruptive innovation and its impact on industries.

2. Examining the impact of disruptive innovation on marketing strategies and the evolving role of marketing in disruptive environments:

It can investigate how disruptive technologies and business models influence consumer behavior, market competition, and value creation. Additionally, it can analyze the changing role of marketing in disruptive environments, focusing on the need for agility, customer-centricity, and innovation in adapting to and capitalizing on disruptive changes.

3. Identifying effective strategies and best practices for organizations to leverage disruptive innovation and drive marketing success:

Research can identify and analyze case studies and examples of companies that have effectively leveraged disruptive change, exploring the key factors that contributed to their success. This can provide valuable insights and practical recommendations for organizations seeking to navigate the disruptive landscape and drive marketing success.

4. Understanding the challenges and risks associated with embracing disruptive change in marketing and exploring methods to mitigate them:

It can analyze challenges such as resistance to change, resource allocation, talent acquisition, and regulatory considerations. Furthermore, it can explore methods and strategies to mitigate these challenges, providing practical recommendations for organizations to overcome barriers and effectively leverage disruptive innovation.

5. Providing insights and practical recommendations based on case studies and examples of companies that have successfully embraced change and achieved marketing success through disruptive innovation:

Drawing on real-world case studies and examples, this research objective aims to provide practical insights and recommendations for organizations. By analyzing successful companies that have embraced change and achieved marketing success through disruptive innovation, this research can offer actionable strategies, best practices, and lessons learned. It can highlight the specific approaches and techniques that led to successful marketing outcomes in the context of disruptive change.



6. Contributing to the existing literature on disruptive innovation and marketing by synthesizing key insights, identifying gaps, and suggesting avenues for further research:

By synthesizing key insights from existing literature, this research can identify gaps and areas that require further exploration. It can propose avenues for future research, such as studying the long-term effects of disruptive innovation on marketing strategies or investigating the role of organizational culture in embracing disruptive change.

7. Equipping marketers and organizations with knowledge and understanding necessary to navigate the dynamic landscape shaped by disruptive innovation and drive marketing success in this context:

By exploring the concepts, strategies, and challenges related to disruptive innovation in marketing, this research can equip professionals with the necessary insights to navigate the dynamic landscape. It can empower marketers to embrace change, foster a culture of innovation, and make informed decisions that drive marketing success.

8. Highlighting the importance of embracing change and fostering a culture of innovation to adapt to disruptive forces and maintain a competitive edge in the market:

Finally, this research emphasizes the significance of embracing change and fostering a culture of innovation in organizations. It can shed light on the critical role that adaptation and innovation play in responding to disruptive forces and maintaining a competitive edge. By highlighting the importance of these factors, this research can motivate organizations to proactively embrace change, invest in innovation, and drive marketing success.

FINDINGS

To uncover insights into the role of disruptive innovation in driving marketing success, providing valuable knowledge and practical implications for businesses and marketers in embracing change and capitalizing on disruptive trends.

1. Theoretical Implications

1. Advancement of Disruptive Innovation Theory: The study will contribute to the theoretical understanding of disruptive innovation by exploring its impact on marketing success. It may identify new dimensions or factors that influence the relationship between disruptive innovation and marketing outcomes, enriching existing theoretical frameworks.
2. Integration of Marketing and Innovation Theories: By examining the intersection of marketing and disruptive innovation, the study may bridge gaps between these two fields. It could provide a holistic perspective on how marketing strategies can be aligned with disruptive innovations, thereby expanding the theoretical knowledge base of both disciplines.
3. Identification of Success Factors: The research may uncover key success factors for organizations in effectively embracing disruptive innovation and driving marketing success. These findings could contribute to a more nuanced understanding of the elements that facilitate successful implementation and adoption of disruptive innovations in marketing practices.

2. Practical Implications

1. Strategic Guidance for Organizations: Practical insights to organizations in formulating strategies to navigate disruptive innovation. It may provide guidance on how to embrace change, identify disruptive trends, and develop marketing approaches that align with the dynamics of emerging markets and customer needs.
2. Marketing Decision-Making: It can inform marketing decision-making processes by shedding light on the opportunities and challenges associated with disruptive innovation. Organizations can use the findings to make informed choices about resource allocation, product development, branding, and customer engagement strategies that embrace disruptive trends.
3. Competitive Advantage: Understanding the relationship between disruptive innovation and marketing success can help organizations gain a competitive edge. The study's insights may assist in identifying untapped market segments, developing innovative products and services, and creating unique value propositions that differentiate them from competitors.
4. Enhanced Customer Engagement: By exploring how disruptive innovation affects marketing success, the research can guide organizations in adapting their customer engagement strategies. It may help identify new channels, technologies, and approaches to effectively engage with customers in the context of disruptive trends, leading to improved customer satisfaction and loyalty.
5. Managerial Practices: It can influence managerial practices by highlighting the importance of fostering a culture of innovation and change within organizations. It may emphasize the need for organizations to embrace experimentation, promote risk-taking, and encourage cross-functional collaboration to drive marketing success through disruptive innovation.

Overall, the theoretical and practical implications of the research study on disruptive innovation and marketing success can provide valuable insights for organizations seeking to leverage disruptive trends, stay competitive, and achieve sustainable growth in dynamic and evolving markets.

SUGGESTIONS

The integration of marketing and innovation theories has been instrumental in understanding the relationship between disruptive innovation and marketing success. The study has identified new dimensions and success factors that influence the effectiveness of embracing disruptive innovations in marketing practices. These insights have the potential to enrich existing theoretical frameworks and guide future research in this area.

From a practical standpoint, the research provides strategic guidance for organizations seeking to navigate the complexities of disruptive innovation. It emphasizes the need for organizations to be proactive in identifying disruptive trends, developing innovative products and services, and aligning marketing strategies with the evolving needs and preferences of customers. The study highlights the importance



of creating a culture that embraces change, encourages experimentation, and fosters cross-functional collaboration.

The practical implications of the research are significant for marketing decision-making processes. Organizations can leverage the findings to make informed choices about resource allocation, product development, branding, and customer engagement strategies. The insights gained can help organizations gain a competitive advantage in the marketplace and enhance customer satisfaction and loyalty through tailored marketing approaches.

CONCLUSION

This study on disruptive innovation and driving marketing success has shed light on the critical role of disruptive innovation in shaping marketing strategies and organizational performance. The findings contribute to theoretical advancements in the field while offering practical implications for organizations seeking to thrive in an era of rapid change and disruption. It has become evident that disruptive innovation plays a significant role in shaping marketing strategies, customer engagement, and overall organizational performance. It is hoped that the insights gained from this study will inspire further research and guide businesses in embracing change and leveraging disruptive innovation for marketing success.

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CAPABILITIES OF THE BUREAU OF FIRE PROTECTION RESPONDING HUMAN-INDUCED AND NATURAL DISASTERS

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ABSTRACT

This study determined the capabilities of the Bureau of Fire Protection responding human-induced and natural disasters. It also looks into significant difference in the level of the BFP programs based on the profile of the BFP personnel. The study is a descriptive-correlational method involving the 47 BFP personnel 15 Business Owners and 15 Brgy Officials in selected municipalities of Laguna like, Paete, Pakil, Pangil, Siniloan, Famy, Mabitac and Sta. Maria. The number of respondents was taken through total enumeration. A questionnaire checklist adopted by the researcher based on the BFP Operational Manual of 2015 was the primary data-gathering tool used in the study. Frequency, percentage mean and one-way anova were used to treat and interpret the data needed in the study. The findings of the research revealed that a substantial percentage of the BFP respondents are 31-35 years old, males, graduates of Bachelor of Science in Nursing and completed the Fire Basic Recruit Course. The level of capabilities of the BFP responding human-induced and natural disasters is "very much capable". As to the program's implementation level, it has remark of "very much implemented". As to the challenges encountered, the BFP mainly experienced a lack of manpower of personnel. There is a significant difference in the implementation of the program and the demographic profile of the BFP, however there is no significant difference was recorded in how the BFP personnel implemented the programs based on the degree they had attained.

KEYWORDS: *Firefighter, Fire Operations, Fire Safety, Programs*

INTRODUCTION

The country's firefighters deal with daily challenges, responding to fire incidents and natural and artificial calamities. However, aside from external challenges, the men and women of the Bureau of Fire Protection (BFP) also need help with their organization. The BFP, with strength of 32,892 officers and personnel, does not have adequate firefighting equipment, which puts the lives of the firefighters at risk every time they go out in the field.

The Bureau of Fire Protection (BFP) is responsible for the Prevention and suppression of all destructive fires in buildings, houses and other structures, forests, land vehicles and equipment, ships or vessels docked at piers or wharves or anchored in major seaports, petroleum industry installations, plane crashes and other similar incidents. The BFP enforces the Fire Code and other related laws and investigates all causes of fires, and, if necessary, files formal complaints with the city or provincial prosecutor who has jurisdiction over the case.

Fire departments respond to numerous cases to save lives and protect valued materials. At the same time, countless obstacles make the task difficult and dangerous for firefighters and those in need of rescue (Veszprémi & Pántya, 2021).

The cost of fire incidents is enormous. It results in the pain and death of victims, waste of time, money and materials and damage to equipment and structures (Adegoro & Ojoye, 2019).

As an elaboration, an electrical short circuit burned down the NCCC mall in Davao City on December 23, 2017, and claimed 38 lives (Antonio IV, 2018; Basa, 2017; Colina, 2018; Revita, 2018; Nawal & Lim, 2017; Villamor, 2017a; 2017b). Likewise, on May 13, 2015, a fire broke out at the Kentex Manufacturing factory in Valenzuela City and claimed 74 lives. The worst fire recorded in the Philippines was the 1996 Ozone Disco Club fire, which claimed 162 lives (Bautista, 2017; Mayuga 2018).

These are just a few examples of morbid fire incidents. All of these happened due to the fire code's poor or non-compliance.

OBJECTIVE OF THE STUDY

The lack of trained pre-hospital providers, modern equipment, and ambulance vehicles accounts for the challenges and short comings to provide quality emergency medical services. The BFP mission is to prevent and suppress destructive fires, investigate its causes, give emergency medical and rescue services, and enforce other fire related laws with the active involvement of the community. Its purpose is to ensure operational readiness of the EMS team on duty. (BFP Operational Procedures Manual, 2015).



This prompted the researcher to study the capabilities of the Bureau of Fire Protection (BFP). It also sought to evaluate the factors that trigger the challenges encountered by the BFP, what comes taken by the BFP personnel and how they provide solutions regarding the problems. Also, the researcher would like to determine the level of capabilities of the BFP personnel responding human-induced and natural disasters.

MATERIALS AND METHODS

This study utilized the Descriptive-Correlational Research Method to gather data from respondents using a questionnaire checklist adopted by the researcher based on the BFP Operational Procedures Manual of 2015. The Descriptive-Correlational Research method is a type of research that tries to explain the relationship between two or more variables without making any claims about cause and effect. It includes collecting and analyzing data the variables of interest and figure out how they relate. The main goal is to give a full account of the variables and how they are related without changing them or assuming that one thing causes another. In descriptive correlational research, researchers do not change any variables or try to find cause-and-effect connections. Instead, they just watch and measure the variables of interest and then look at the patterns and relationships that emerge from the data.

Population and Sampling Technique

This study aimed to statistically determine the level of capabilities of the Bureau of Fire Protection responding human-induced and natural disasters. The researcher used the purposive sampling technique because the participants were personnel who had knowledge regarding her topic and were directly affected and concerned with the capabilities of the BFP. The study was a non-probability sampling wherein the researcher consciously selected particular elements with specific characteristics that pertained to the study. It usually targeted a distinct group with a total of 77 participants, 10 BFP personnel at the Paete Fire Station, 2 BFP personnel at the Pakil Fire Prevention Office, 12 BFP personnel at the Pangil Fire Prevention Office, 3 BFP personnel at the Famy Fire Prevention Office, 10 Mabitac Fire Station and 12 BFP personnel at Sta. Maria Fire Station, 15 Business Establishments Owners and 15 Barangay Officials.

Data Collection Procedure

In this study, the researcher used a questionnaire checklist adopted by the researcher based on the BFP Operational Procedures Manual of 2015 to gather information and achieve the study's objectives. The questionnaire was divided into four sections. Section A gathered demographic information about the BFP. Section B assessed the BFP status regarding its implementation of the BFP Program. Section C assessed the BFP regarding the Capability of the BFP Laguna in responding human-induced and natural disasters. Section D assessed the BFP regarding the challenges encountered. The questionnaire utilized a five-point ratingscale, allowing participants to provide their responses and opinions on specific criteria or variables. The collected data was then analyzed using various statistical tools such as frequency, weighted mean, and one-way anova to establish significant difference among the data and obtain research results.

RESULTS AND DISCUSSION

Demographic Profile of the respondents

Table 1.: Frequency Distribution of BFP respondents according to their Age

Age in Years	<i>f</i>	%
21 - 25	2	4.26%
26 – 30	12	25.53%
31 – 35	16	34.04%
36 - 40	8	17.02%
41 - 45	3	6.38%
46 - 50	3	6.38%
51 –56	3	6.38%
Total	47	100%

Table 1 provides information on the demographic profile of the BFP. On the 47 BFP respondents almost one-third of the BFP personnel were still in their youth, aged 21 to 30 (29.79%), and the rest were in their middle adulthood (70.21%). It connotes that young firefighters are needed to implement the different programs effectively.

**Table 2.: Frequency Distribution of BFP respondents according to their Sex**

Sex	<i>f</i>	%
Male	30	63.83%
Female	17	36.17%
<i>Total</i>	47	100.00%

Out of 47 BFP personnel, a significant majority are males. There were 30 males (63.83%) and 17 females (36.17%). As the community sees it, men are more capable of responding to fire incidents and other emergencies; they have the aptitude to do their job as a fireman. According to Siniloan Fire Station, male firefighters are usually in the field of operations as fire truck drivers and those who carry heavy equipment. However, female firefighters are primarily designated in the Office, and some are assigned 24-hour duty. If there is an occurrence of fire, they will join the response team at the fire scene.

Table 3.: Frequency Distribution of BFP respondents according to their Educational Attainment

<i>Educational Attainment</i>	<i>f</i>	%
B.S. Nursing	12	25.53%
BS Criminology	11	23.40%
BS Teacher	5	10.64%
Education		
BS Agriculture	1	2.13%
BS Psychology	2	4.26%
BS Accountancy	2	4.26%
BS Electrical	2	4.26%
Engineering		
BS Mechanical	4	8.51%
Engineering		
BS Secondary	1	2.13%
Education		
Others	7	14.89%
<i>Total</i> 47	100.00%	

Based on the results, most respondents had a bachelor's degree in Nursing, comprising 25.53 per centum or 12 of the sample. While 11 or 23.40 per centum had a Bachelor of Science in Criminology degree. Only 5 or 10.64 per centum earned a Bachelor of Science in Teacher Education degree. While 4 or 8.51 per centum had attained a Bachelor of Science in Mechanical Engineering. There were equal numbers of 2 or 4.26% of those who earned Bachelor of Science in Psychology, Accountancy and Electrical Engineering. While only 1 or 2.13 per centum earned a Bachelor of Science in Secondary Education degree, and others 7 or 14.89 per centum.

Table 4.: Frequency Distribution of BFP respondents according to their Years in Service

<i>Years in Service</i>	<i>f</i>	%
1 - 5 years	27	57.45%
6 - 10 years	8	17.02%
11 - 15 years	6	12.77%
16 - 20 years	5	10.64%
21 - 25 years	1	2.12%
<i>Total</i>	47	100.00%

Finally, when the years in service were put into consideration, it was observed that the majority of the respondents were 1-5 years in service or 57.45% per centum of the total sample; the majority of the respondents are new to the service as the reflected on their age, while 17.02% had rendered 6-10 years of service. Since they are neophytes in the fire service, they are eager to learn; therefore, they have undergone training and perform better in their responsibilities as firefighters.

**Table 5.: Frequency Distribution of BFP respondents according to their trainings attended**

Training Attended	<i>f</i>	%
Fire Basic Recruit Course	29	61.70%
Fire Junior Leadership Course	9	19.15%
Fire Senior Leadership Course	7	14.89%
Fire Officer Candidate Course	2	4.26%
Total	47	100.00%

Results implied that most respondents attended Fire Basic Recruit Course comprising 29 or 61.70 per centum. At the same time, 9 or 19.15 per centum were, attended Fire Junior Leadership Course. Only 7, or 14.89 per centum, attended Fire Senior Leadership Course. Only 2 or 4.26 per centum attended Fire Officer Candidate Course.

According to BFP Region4A, the region opened the field of public service for the aspiring firefighters of CALABARZON. Some aspirants from different provinces applied for the position of Fire Officer 1; however, a definite number of newly hired FO1s were considered, so most of the BFP personnel are beginners. For training attended, a significant majority (57.45%) of the BFP personnel had finished their Fire Basic Recruit Course (FBRC), a mandatory requirement for FO1. In comparison, one-half (19.15%) had undergone Fire Junior Leadership Course (FJLC), a mandatory training that is divided into the Academic phase (256 hrs) and Non-Academic Phase (64hrs). It supersedes the former Fire Arson Investigation and. Inspection Course (FAIC), now a particular course (BFP Rsix Maasin Fire Station, 2021).

Table 6 Level of Implementation of the BFP Program as to Community Fire Protection Plan

<i>Community Fire Protection Plan</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. The Barangay is installed with an individual Community Fire Protection Plan.	4.94	0.32	VMI	5	0	VMI	5	0	VMI
2. The Barangay is installed with individual Community Fire Hazard Maps.	4.89	0.43	VMI	5	0	VMI	5	0	VMI
3. The Bureau of Fire Protection installed municipal Fire Hazard Maps	4.94	0.32	VMI	5	0	VMI	5	0	VMI
4. The Bureau of Fire Protection conducts Community Simulation Drills.	4.87	0.61	VMI	5	0	VMI	5	0	VMI
Overall Mean	4.91		VMI	5		VMI	5		VMI

The BFP personnel, Barangay officials, and business owners shared the same views about the implementation of the community fire protection plan. They perceived that each barangay had installed a community fire protection plan and fire hazard maps. The BFP conducted community simulation drills, as stated by the three groups of respondents. The community fire protection plan was *very much implemented*, as perceived by the BFP personnel ($M=4.91$), the Barangay officials ($M=5.00$), and the business owners ($M=5.00$). It means that the BFP program was coordinated at the barangay and municipal levels.

A community fire protection plan is established to identify the hazard areas, and such a plan is laid out in case of fire incidents (Gail Momblan, 2019). Under this activity, every fire station nationwide shall mentor every community in formulating a Community Fire Protection Plan (CFPP). The CFPP is, in essence, the BFP's counterpart for the Barangay Disaster Resilience Preparedness Plan



mandated to be prepared by the various LGUs and Barangay councils; as the BDRPP is to disaster preparedness, the CFPP is to fire incident preparedness, only in a more specialized program (BFP “Oplan Ligtas na Pamayanan”, Guidebook).

Table 7. Level of Implementation of the BFP Program as to the BAYANIHAN Program

<i>BAYANIHAN Program</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. Community Fire Auxiliary Group (CFAG) was created and trained.	4.98	0.15	VMI	5	0	VMI	5	0	VMI
2. Community Fire Auxiliary Group (CFAG) was trained annually.	4.94	0.32	VMI	5	0	VMI	5	0	VMI
3. BAYANI ng Barangay as Fire Safety Advocacy Group in the social media.	4.91	0.35	VMI	5	0	VMI	5	0	VMI
4. The Barangay Fire Fighting contests/Fire Safety Contests at all levels.	4.94	0.32	VMI	5	0	VMI	5	0	VMI
Overall Mean	4.94		VMI	5.00		VMI	5.00		VMI

Table 7 presents the BFP program implementation level pertaining to the programs as the "BAYANIHAN" program, as perceived by the BFP personnel, business owners, and barangay officials. The BFP personnel, Barangay officials, and business owners shared the same views about implementing the BAYANIHAN Program. They perceived that each barangay had created and trained the Community Fire Auxiliary Group (CFAG) annually. The BFP conducted a fire safety advocacy group on social media, as stated by the three groups of respondents. The BAYANIHAN Program was *very much implemented*, as perceived by the BFP personnel ($M=4.94$), the Barangay officials ($M=5.00$), and the business owners ($M=5.00$).

It means that the BFP program was well coordinated with the barangay officials. The Bayanihan focuses on neighbourhood initiatives in creating fire plans (Gail Momblan, 2019).

Community Fire Auxiliary Group (CFAG) or "CFAG", the organization's primary responsibility is to respond to localized fire incidents as BFP responding teams are in transit and to promote community safety through guided activities by the BFP. The CFAG answers the need for a singular form regarding structure, duties and responsibility for the currently established barangay fire brigades (BFP “Oplan Ligtas na Pamayanan”, Guidebook).

Table 8. Level of Implementation of the BFP Program as to the LINGAP Program

<i>LINGAP Program</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. The BFP conducts inspections of households in high-hazard areas.	4.98	0.15	VMI	5	0	VMI	5	0	VMI
2. The BFP distribute fire safety informative materials to every household in high-hazard areas, medium and low-hazard areas.	4.96	0.2	VMI	5	0	VMI	5	0	VMI
Overall Mean	4.97		VMI	5.00		VMI	5.00		VMI

Table 8 presents the level of implementation of the BFP program as a “Lingap program”, as perceived by the BFP personnel, business owners, and barangay officials.

The BFP personnel, Barangay officials, and business owners shared the same views about implementing the BAYANIHAN Program. They perceived that each BFP conducted an inspection and distributed fire safety informative materials to every household in high-hazard areas and medium and low-hazard areas. The LINGAP Program was *very much implemented*, as perceived by the BFP personnel ($M=4.97$), the Barangay officials ($M=5.00$), and the business owners ($M=5.00$). It means that the lingap program was well conducted.

According to Gumowang, ARDO, BFP R6, Lingap, on the other hand, will recognize villages that "conduct intensive house-to-house fire safety surveys in densely populated neighbourhood, resettlements, and fire-prone areas,”

**Table 9. Level of Implementation of the BFP Program as to the KAISA Program**

<i>KAISA Program</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. Proper and good housekeeping practice in the workplace and vicinity	4.98	0.15	VMI	5	0	VMI	4.94	0.25	VMI
2. Provide adequate fire safety information and reminders to co-workers through regular "after-office safety talks", adopting the seasonal fire safety theme published by the BFP.	4.94	0.25	VMI	4.94	0.25	VMI	4.94	0.25	VMI
3. Posts fire safety tips, posters or reminders in the workplace.	4.98	0.15	VMI	5	0	VMI	5	0	VMI
4. Coordinate with the BFP for annual fire safety seminars and drills.	4.98	0.15	VMI	4.98	0.15	VMI	4.98	0.15	VMI
5. Call the BFP and other authorities in case of fire and emergencies.	5	0	VMI	5	0	VMI	5	0	VMI
Overall Mean	4.97		VMI	4.98		VMI	4.97		VMI

Level of Operational Capabilities of the Bureau of Fire Protection

The operational capabilities of the Bureau of Fire Protection unit were measured in terms of their preparedness and ability to perform functions such as fire safety enforcement during the pre-construction phase and construction phase, firefighting operations during a fire in a high-rise building, fire/arson investigation in terms of fire scene documentation, submission of pertinent documents for investigation, collection and preservation of evidence, interview and questioning of witnesses, the conduct of fire cause determination procedure, response to medical emergencies, and response to typhoon and flood.

Table 10. Level of Operational Capabilities of the BFP in Terms of Fire Safety Enforcement during the Pre-Construction Phase

<i>Fire Safety Inspection (Pre-construction Phase)</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. The plan evaluator (PE), upon receipt of plans and specifications, determines whether an on-site inspection is required and, if so, prepares the inspection order (I.O.).	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
2. The PE then presents the prepared I.O. together with the plans to the Chief, Fire Safety Enforcement Section (FSES) for evaluation and signature of the I.O.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
3. The Chief, FSES, forwards the I.O. and plans to the City/Municipal Fire Marshal (CMFM) for his/her approval.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
4. The PE proceeds to the site and requests acknowledgment of the I.O. from any responsible person in the building, structure or facility	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
5. The PE conducts an ocular inspection of the building/structure/facility.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
6. The PE prepares an After Inspection Report (AIR) within 24 hours after receipt of the I.O. as the basis for his/her evaluation of the submitted plans and specifications.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
Overall Mean		5.00	VMC		5.00	VMC		5.00	VMC



Table 10 presents the level of operational capabilities of the BFP regarding Fire Safety Enforcement (pre-construction phase) as perceived by the BFP personnel, business owners, and barangay officials.

They agreed that Fire Safety Enforcement during Pre-Construction Phase was "Very Much Capable", as manifested by the overall mean of 5.00. The respondents answered that the plan evaluators "Always" conduct an ocular inspection of the building/ structure/ facility. It refers to the respondent's capability of enforcing fire safety by doing the fire safety inspection phase.

The National Building Code of the Philippines or Republic Act 6541 Section 1.01.02 promote the policy of the State to safeguard life, health, property, and public welfare, consistent with the principles of environmental management and control; and to this end, make it the purpose of this Code to provide for all buildings and structure, a framework of minimum standards and requirements by guiding, regulating, and controlling their location, siting, design, quality of materials, construction, use, occupancy, and maintenance, including their environment, utilities, fixtures, equipment, and mechanical electrical, and other systems and installations (The National Building Code of the Philippines).

Table 11. Level of Operational Capabilities of the BFP in Terms of Fire Safety Enforcement during the Construction Phase

<i>Fire Safety Inspection (Construction Phase)</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. By the issued Fire Safety Checklist (FSC) on the building plan, the P.E. prepares an I.O. and forwards it to the Chief, FSES, for his signature.	5	0	VMC	5	0	VMC	5	0	VMC
2. Chief, FSES countersigns the I.O. and forwards the same to the City/Municipal Fire Marshal for approval.	5	0	VMC	5	0	VMC	5	0	VMC
3. The City/Municipal Fire Marshal signs the I.O.	5	0	VMC	5	0	VMC	5	0	VMC
4. The PE proceeds to the site and requests acknowledgment of the I.O. from any responsible person in the building, structure or facility	5	0	VMC	5	0	VMC	5	0	VMC
5. The PE inspects the construction, renovation, modification or alteration and prepares the AIR in duplicate copies immediately after the inspection leaving a copy for the owner/project manager/contractor or any duly authorized representative.	5	0	VMC	5	0	VMC	5	0	VMC
6. Within three years of receipt of the I.O., a copy of the AIR is given to the Chief, FSES.	5	0	VMC	5	0	VMC	5	0	VMC
7. The Chief, FSES, evaluates the AIR and, in case of violations/deficiencies, prepares the written notice addressed to the owner/project manager/contractor or any duly authorized representative in the construction.	5	0	VMC	5	0	VMC	5	0	VMC
8. The C/MFM signs the notice and forwards the same to the P.E. or service of notice.	5	0	VMC	5	0	VMC	5	0	VMC
9. The PE serves the original copy of the notice to the owner/project manager/contractor or any duly authorized representative and another copy to the Office of the Building Official.	5	0	VMC	5	0	VMC	5	0	VMC
Overall Mean	5.00	VMC		5.00	VMC		5.00	VMC	

Note: The computed mean is interpreted as follows: 4.20 - 5.00 Very Much Implemented (VMI), 3.40 - 4.19 Much Implemented (MI), 2.60 - 3.39 Implemented (I), 1.80 - 2.59 lightly Implemented (S.I.), 1.00 - 1.79 Not Implemented

Table 11 presents the operational capabilities of the BFP of Fire Safety Enforcement (construction phase) as perceived by the BFP personnel, business owners, and barangay officials.

On fire safety inspection (construction phase), the respondents also answered that the Chief, Fire Safety Enforcement Section (C, FSES) "Always" countersigns the I.O. and forwards the same to the City/Municipal Fire Marshal for approval and the City/Municipal Fire Marshal signs the I.O. ($M=5.00$) respectively.



The finding implies that following the protocol in their operations, such as planning and forwarding signed orders, ensures quality public service delivery. It means that the BFP personnel always conduct an ocular inspection in the pre-construction phase because it is a requirement for having a building permit. As stated by the community, they usually visit the construction site to ensure the safety of the residents and the labourer. It has implied that the quality of service of the Bureau of Fire Protection when it comes to Fire Safety Enforcement is reliable.

Section 5 (h) RA 9514 Fire Code of the Philippines of 2008 states that the BFP may "inspect at a reasonable time, any building, structure, installation or premises for dangerous or hazardous conditions or materials."

Table 12. Shows the Level of Operational Capabilities of the BFP in terms of Firefighting Operations

Firefighting Operations (Fire in High-Rise Building)	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. All responding personnel wear appropriate Personal Protective Equipment (PPE).	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
2. The Incident Commander (IC) coordinates with the management of the building for the initial gathering of information and initiates the transfer of command.	4.91	0.35	VMC	4.94	0.32	VMC	4.89	0.43	VMC
3. The I.C. coordinates with the management of the building for the initial gathering of information and initiates the transfer of command.	4.94	0.32	VMC	4.89	0.43	VMC	5.00	0.00	VMC
4. The I.C. conducts Damage Assessment and Need Analysis (DANA) and reports the same to the next higher Office.	4.96	0.20	VMC	4.94	0.32	VMC	4.96	0.20	VMC
5. The I.C. directs fire operations by the phases of firefighting, whenever applicable.	4.96	0.29	VMC	4.91	0.35	VMC	4.91	0.35	VMC
6. The I.C. declares "fire under control" when there is no probability for the fire to escalate.	5.00	0.00	VMC	5.00	0.00	VMC	4.32	0.65	VMC
7. Responding personnel performs overhauling until the fire is fully extinguished.	4.98	0.15	VMC	5.00	0.00	VMC	4.23	0.67	VMC
8. The I.C. declares "fire out" after the determination of total extinguishment.	5.00	0.00	VMC	4.23	0.68	VMC	4.15	0.71	VMC
9. The I.C. directs the BFP investigators to continue the conduct of the investigation.	4.96	0.29	VMC	4.23	0.67	VMC	4.96	0.20	VMC
10. The responding unit returns to the station after demobilization only.	4.98	0.15	VMC	4.96	0.20	VMC	4.25	0.70	VMC
11. The Fire Marshal, together with the firefighting unit, conducts post-fire analysis.	4.98	0.15	VMC	4.89	0.43	VMC	4.89	0.43	VMC
12. The Station's Chief Operations submits After Fire Operations Report to the Fire Marshal for subsequent submission to the next higher Office.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
Overall Mean	4.97		VMC	4.83		VMC	4.71		VMC

Table 12 presents the level of operational capabilities of the BFP in Firefighting operations, as perceived by the BFP personnel, business owners, and barangay officials. The respondents have a "Very Much Capable" level in operational capabilities in responding to emergencies regarding firefighting operations as indicated with the overall mean of 4.97 for BFP personnel, $M=4.83$ for brgy officials and $M=4.71$ for business owners. It refers to the personnel's ability to respond in firefighting operations because the Bureau of Fire Protection personnel are on duty 24/7. Fire is one of the calamities that we cannot simply predict, and it may happen at any time of the day or even late at night, which is why we have the BFP. However, before they take any course of action, many preparations must be first addressed: preparing the equipment needed to fight a fire.

High-rise buildings are also a significant problem for firefighters during operations. Since they cannot reach the top floors with their firefighting equipment, they are bound to use the building's installed firefighting equipment before reaching the highest floor affected by the fire. They also need to take the stairs since elevators may be inaccessible, and after they reach their target floor, the flames might spread everywhere and cause a disaster (Zadeh, Abdulwakil, Amar, Durante, & Santos, 2021).

The firefighting capacity of any fire station should conform to national and international standards. The fire station's location and service area are essential issues in reducing fire risk. Along with these spatial requirements, several non-spatial issues, such as staff, equipment, vehicle, function organization and technology, are also related to efficient fire services (Tishi & Islam, 2019).

**Table 13 Level of Operational Capabilities of the BFP in Terms of Fire/ Arson Investigation**

<i>Fire Scene Documentation</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. Fire Scene Sketch Preparer and Fire Scene Photographer ensure the availability of all tools and equipment they need for the investigation.	4.98	0.15	VMC	4.98	0.15	VMC	4.98	0.15	VMC
2. The fire Scene Sketch Preparer prepares a detailed illustration of the interior and exterior portion of the fire scene, the Area of Fire Origin and the Point of Fire Origin, the Fire Spread Pattern, and affected and unaffected areas at the fire scene.	4.98	0.15	VMC	4.98	0.15	VMC	4.98	0.15	VMC
3. Fire Scene Photographer photographs the fire scene in large and close-up angles for detailed and sequential presentation.	4.96	0.20	VMC	4.96	0.20	VMC	4.96	0.20	VMC
Overall Mean	4.97		VMC	4.97		VMC	4.97		VMC
<i>Submission of Pertinent Documents for Investigation</i>									
1. FAI prepares the LIST OF DOCUMENTS needed to be accomplished/ submitted by the fire victim/s, building occupant/s and other parties affected by the fire, which varies based on the TYPE OF OCCUPANCY or the INVOLVED STRUCTURE gutted by fire.	5.00	0.00	VMC	4.98	0.15	VMC	4.96	0.20	VMC
2. FAI prepares and submits the mandatory reports within the reglementary period of submission.	4.98	0.15	VMC	4.96	0.20	VMC	4.96	0.20	VMC
Overall Mean	4.99		VMC	4.97		VMC	4.96		VMC
<i>Collection and Preservation of Evidence</i>									
1. FAI prepares the apparatus used for the collection of evidence.	4.96	0.29	VMC	4.25	0.70	VMC	4.98	0.15	VMC
2. FAI identifies the collected physical evidence found that has Evidentiary Value.	4.94	0.32	VMC	5.00	0.00	VMC	4.94	0.32	VMC
3. Evidence Recovery Personnel and Custodian coordinate with Fire Scene Sketch Prepare re: the position and location of all evidence collected.	4.98	0.15	VMC	5.00	0.00	VMC	4.94	0.32	VMC
4. FAI photographs the evidence to be collected before lifting in the presence of a witness independent from the FAI Team.	5.00	0.00	VMC	5.00	0.00	VMC	4.94	0.32	VMC
5. FAI properly documents, packs, seals and labels the pieces of evidence recovered before transportation and submission to Arson Laboratory Section BP-NHQ within 72 hours upon lifting from the fire scene for laboratory examination.	4.96	0.29	VMC	4.15	0.68	VMC	4.12	0.76	VMC
6. FAI records/documents collect and itemize all the recovered evidence in a detailed format using the Evidence Collection and Recovery Record (ECRR).	4.96	0.20	VMC	5.00	0.00	VMC	4.96	0.20	VMC
7. FAI attaches a copy of the Evidence Collection and Recovery Record (ECRR) to the Evidence Chain of Custody (ECC) form.	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
Overall Mean	4.97		VMC	4.77		VMC	4.84		VMC

Table 13 presents the level of operational capabilities of the BFP of Fire/ Arson Investigation, as perceived by the BFP personnel, business owners, and barangay officials of $M=97$ as supported as "very much capable". It means that the respondents can conduct fire/arson investigations like fire scene documentation, submit pertinent documents for investigation, and collect and preserve evidence.

When taken singly, on fire scene investigation, the Fire Arson Investigator "Always" prepares the documents needed to be accomplished/ submitted by the fire victim/s, building occupant/s and other parties affected by the fire. The required documents are listed in form FAI-02: Required Documents for Investigation. Documents to be obtained from the fire victim vary based on the type of occupancy or the complicated structure gutted by fire ($M=4.99/ M=4.97/ M=4.96$). It means that the personnel should see to it that all the required documents and checklists for investigation should be filled up correctly and accurately to have a basis for declaring the



cause of the fire.

Further, on collection and preservation of evidence, the respondents answered that "Always", the evidence recovery personnel and custodian coordinate with Fire Scene Sketch Prepare for the illustrations of the position and location of all pieces of evidence collected, FAI entirely records/documents and collect and itemize in a detailed format all the recovered pieces of evidence using the Evidence Collection and Recovery Record ($M=4.97$, $M=4.77$ and 4.84). It means that the person must collect enough accurate and valid data as their basis in deciding the result of the investigation.

According to the National Institute of Justice (U.S. government DOJ), Fire and arson investigators examine the physical attributes of a fire scene and identify and collect physical evidence from the scene. This evidence is then analyzed to help determine if the cause of the fire was accidental or deliberate. During the scene examination, investigators may find evidence indicating criminal activity, such as accelerants, tampered utilities, and specific burn patterns.

Table 14 Level of Operational Capabilities of the BFP in Terms of Fire/ Arson Investigation

<i>Fire Scene Documentation</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
4. Fire Scene Sketch Preparer and Fire Scene Photographer ensure the availability of all tools and equipment they need for the investigation.	4.98	0.15	VMC	4.98	0.15	VMC	4.98	0.15	VMC
5. The fire Scene Sketch Preparer prepares a detailed illustration of the interior and exterior portion of the fire scene, the Area of Fire Origin and the Point of Fire Origin, the Fire Spread Pattern, and affected and unaffected areas at the fire scene.	4.98	0.15	VMC	4.98	0.15	VMC	4.98	0.15	VMC
6. Fire Scene Photographer photographs the fire scene in large and close-up angles for detailed and sequential presentation.	4.96	0.20	VMC	4.96	0.20	VMC	4.96	0.20	VMC
Overall Mean	4.97		VMC	4.97		VMC	4.97		VMC
<i>Submission of Pertinent Documents for Investigation</i>									
3. FAI prepares the LIST OF DOCUMENTS needed to be accomplished/ submitted by the fire victim/s, building occupant/s and other parties affected by the fire, which varies based on the TYPE OF OCCUPANCY or the INVOLVED STRUCTURE gutted by fire.	5.00	0.00	VMC	4.98	0.15	VMC	4.96	0.20	VMC
4. FAI prepares and submits the mandatory reports within the reglementary period of submission.	4.98	0.15	VMC	4.96	0.20	VMC	4.96	0.20	VMC
Overall Mean	4.99		VMC	4.97		VMC	4.96		VMC
<i>Collection and Preservation of Evidence</i>									
8. FAI prepares the apparatus used for the collection of evidence.	4.96	0.29	VMC	4.25	0.70	VMC	4.98	0.15	VMC
9. FAI identifies the collected physical evidence found that has Evidentiary Value.	4.94	0.32	VMC	5.00	0.00	VMC	4.94	0.32	VMC
10. Evidence Recovery Personnel and Custodian coordinate with Fire Scene Sketch Prepare re: the position and location of all evidence collected.	4.98	0.15	VMC	5.00	0.00	VMC	4.94	0.32	VMC
11. FAI photographs the evidence to be collected before lifting in the presence	5.00	0.00	VMC	5.00	0.00	VMC	4.94	0.32	VMC



of a witness independent from the FAI Team.										
12. FAI properly documents, packs, seals and labels the pieces of evidence recovered before transportation and submission to Arson Laboratory Section BP-NHQ within 72 hours upon lifting from the fire scene for laboratory examination.	4.96	0.29	VMC	4.15	0.68	VMC	4.12	0.76	VMC	
13. FAI records/documents collect and itemize all the recovered evidence in a detailed format using the Evidence Collection and Recovery Record (ECRR).	4.96	0.20	VMC	5.00	0.00	VMC	4.96	0.20	VMC	
14. FAI attaches a copy of the Evidence Collection and Recovery Record (ECRR) to the Evidence Chain of Custody (ECC) form.	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC	
Overall Mean	4.97		VMC	4.77		VMC	4.84		VMC	

Note: The computed mean is interpreted as follows: 4.20 - 5.00 Very Much Implemented (VMI), 3.40 - 4.19 Much Implemented (MI), 2.60 - 3.39 Implemented (I), 1.80 - 2.59 lightly Implemented (S.I.), 1.00 - 1.79 Not Implemented (N.I.).

Table 14 presents the level of operational capabilities of the BFP of Fire/ Arson Investigation, as perceived by the BFP personnel, business owners, and barangay officials of $M=97$ as supported as "very much capable". It means that the respondents can conduct fire/arson investigations like fire scene documentation, submit pertinent documents for investigation, and collect and preserve evidence.

When taken singly, on fire scene investigation, the Fire Arson Investigator "Always" prepares the documents needed to be accomplished/ submitted by the fire victim/s, building occupant/s and other parties affected by the fire. The required documents are listed in form FAI-02: Required Documents for Investigation. Documents to be obtained from the fire victim vary based on the type of occupancy or the complicated structure gutted by fire ($M=4.99/ M=4.97/ M=4.96$). It means that the personnel should see to it that all the required documents and checklists for investigation should be filled up correctly and accurately to have a basis for declaring the cause of the fire.

Further, on collection and preservation of evidence, the respondents answered that "Always", the evidence recovery personnel and custodian coordinate with Fire Scene Sketch Prepare for the illustrations of the position and location of all pieces of evidence collected, FAI entirely records/documents and collect and itemize in a detailed format all the recovered pieces of evidence using the Evidence Collection and Recovery Record ($M=4.97, M=4.77$ and 4.84). It means that the person must collect enough accurate and valid data as their basis in deciding the result of the investigation.

According to the National Institute of Justice (U.S. government DOJ), Fire and arson investigators examine the physical attributes of a fire scene and identify and collect physical evidence from the scene. This evidence is then analyzed to help determine if the cause of the fire was accidental or deliberate. During the scene examination, investigators may find evidence indicating criminal activity, such as accelerants, tampered utilities, and specific burn patterns

Table 15. Level of Operational Capabilities of the BFP in Terms of Emergency and Medical Services

Response to Medical Emergencies	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. The team leader or assigned crew gathers all initial information from dispatch.	4.91	0.41	VMC	4.87	0.49	VMC	4.96	0.2	VMC
1.1 exact location/address to include a reference as to landmarks.	4.91	0.41	VMC	5	0	VMC	5	0	VMC
1.2 nature and severity of injury, illness or accident	4.91	0.41	VMC	5	0	VMC	5	0	VMC
1.3 information on possible victims/patients, status and number	4.98	0.15	VMC	5	0	VMC	4.87	0.49	VMC



2. The team leader or crew reports to dispatch, confirms the response and notes the time.	4.98	0.15	VMC	5	0	VMC	5	0	VMC
3. The ambulance crew wears EMS vests and proper PPE	4.83	0.52	VMC	5	0	VMC	5	0	VMC
4. The ambulance crew readies additional equipment to be carried (scoop stretcher, C-collar, splints, portable oxygen tank.	4.96	0.2	VMC	5	0	VMC	5	0	VMC
5. The team leader or crew member prepares a patient care report (PCR)	4.94	0.32	VMC	5	0	VMC	5	0	VMC
6. The team leader introduces himself and asks for consent before engaging with the patient.	4.98	0.15	VMC	5	0	VMC	4.98	0.15	VMC
7. The team leader or assigned crew conducts proper assessment and initiates treatment or medical management within the scope of the level of training and standard of care.	5	0	VMC	5	0	VMC	5	0	VMC
8. The ambulance crew documents all interventions given in the PCR.	4.83	0.52	VMC	5	0	VMC	5	0	VMC
9. The team transports the patient if necessary.	4.81	0.5	VMC	5	0	VMC	5	0	VMC
10. The team leader of the crew coordinates with the DOH Operation Center for hospital transport.	4.91	0.35	VMC	5	0	VMC	5	0	VMC
11. The EMS team endorses the patient and PCR to emergency room personnel (if transported) and asks permission to leave.	4.87	0.34	VMC	4.87	0.49	VMC	4.91	0.35	VMC
12. The ambulance crew airs out the ambulance by leaving the doors open for 5-10 minutes before returning to base.	4.85	0.55	VMC	5	0	VMC	5	0	VMC
13. Any member of the EMS team notifies dispatch about leaving the hospital.	4.87	0.49	VMC	5	0	VMC	5	0	VMC
14. Any member of the EMS team notifies dispatch of the arrival at the EMS base.	4.85	0.36	VMC	5	0	VMC	5	0	VMC
15. The ambulance crew cleans, disinfects the ambulance and equipment and discards all soiled supplies.	4.91	0.28	VMC	5	0	VMC	5	0	VMC



16. The assigned ambulance crew makes an inventory and re-stock supplies.	4.94	0.25	VMC	5	0	VMC	5	0	VMC
17. The team leader or crew member completes and files any additional reports.	4.96	0.2	VMC	5	0	VMC	5	0	VMC
18. The team leader conducts defusing/debriefing or post-run evaluation as needed.	4.94	0.25	VMC	4.94	0.25	VMC	4.94	0.25	VMC
Overall Mean	4.91		VMC	4.98		VMC	4.98		VMC

Note: The computed mean is interpreted as follows: 4.20 - 5.00 Very Much Implemented (VMI), 3.40 - 4.19 Much Implemented (MI), 2.60 - 3.39 Implemented (I), 1.80 - 2.59 lightly Implemented (S.I.), 1.00 - 1.79 Not Implemented (N.I.).

Table 15 presents the level of operational capabilities of the BFP regarding Emergency and Medical Services, as perceived by the BFP personnel, business owners, and barangay officials. The respondents have "Very Much Capable" operational capabilities regarding emergency medical services, as manifested by the overall $M=4.91$ for BFP respondents and $M=4.98$ for business owners and barangay officials. It means that the respondents can respond to emergency medical cases. It is because the personnel assigned to emergency medical services are registered nurses or graduates of allied health courses and have undergone training on basic first aid, basic and advanced life support and basic rescue techniques.

The Philippine government and organizations are taking steps to make emergency medical services become better and more efficient. It has been a progressive move, making the Philippine EMS team attain and practice worldwide standards (EMSPEDIA 2018).

Maurtua, 2017) stated that a person in charge must implement a new strategy to reinforce the BFP to act as a first responder to fire alarms and other medical emergency calls. A bill proposed by House leaders calls for fire stations to have trained paramedics added on duty at all times to be a requirement. The bill was intended to make the BFP's staff better trained and equipped when responding to accidents, medical emergency calls, or even terror attacks. It would offer selective training for the nation's next generation of firefighters as certified paramedics or emergency medical technicians. Negros Daily Bulletin, 2016 reports that the BFP has evolved from firefighters to emergency medical responders to rescue teams after twenty-five years. From its original mandate of just being mere fire prevention and fire suppression, the BFP is now a multi-faceted bureau whose functions other than fire prevention and fire suppression include emergency medical service and fire rescue.

Table 16. Level of Operational Capabilities of the BFP in Terms of Disaster Management

Response to Typhoon and Flood <i>The Fire Marshal or his representative</i>	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. formulates Contingency Plan and orient personnel	4.98	0.15	VMC	4.07	0.76	VMC	4.03	0.74	VMC
2. advises the D.R. team with its equipment to stand by.	4.98	0.15	VMC	4.91	0.58	VMC	4.91	0.58	VMC
3. attends the LDRRMC meeting.	4.98	0.15	VMC	4.98	0.15	VMC	4.98	0.15	VMC
4. coordinates with other government agencies	4.98	0.15	VMC	4.98	0.15	VMC	4.98	0.15	VMC
5. activate the SRR teams	4.91	0.58	VMC	4.98	0.15	VMC	5.00	0.00	VMC
6. updates the Mayor/ LDRRMC / IC on the availability of resources	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
7. raises the alert based on the prevailing situation	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
8. FAI takes photos in the presence of a witness	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
9. issues recall orders to all on leave or on off duty	4.98	0.15	VMC	4.27	0.76	VMC	5.00	0.00	VMC
10. accounts all personnel who reported to the station.	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
11. mobilizes volunteer fire brigades and other force multipliers.	5.00	0.00	VMC	4.98	0.15	VMC	4.98	0.15	VMC
12. designates personnel who will assist in the medical, clearing, evacuation, and information dissemination operations.	5.00	0.00	VMC	4.98	0.15	VMC	4.98	0.15	VMC
13. directs operation officer to assist in providing vehicular and personnel support	5.00	0.00	VMC	4.07	0.76	VMC	4.07	0.76	VMC
14. pre-positions personnel to assist in the clearing, evacuation, and information dissemination.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
15. directs duty personnel to assist in water delivery to the evacuation centres.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC



16. direct duty personnel to assist in clearing routes to ensure faster delivery of relief goods/ supplies	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
17. assists in assessing other structures or places as additional to the pre-identified evacuation centres.	4.96	0.20	VMC	5.00	0.00	VMC	5.00	0.00	VMC
18. notifies the HHQ through Situation Report.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
19. alerts Disaster Response Team (DRT)	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
20. advises DRT to secure themselves from the clear and present danger	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
21. withdraws operating teams upon imminent danger and directs them on standby at EOC	4.94	0.44	VMC	5.00	0.00	VMC	5.00	0.00	VMC
22. directs the SRR team to conduct SRR and evacuation procedures	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
23. notifies HHQ through Situation Report.	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
24. continues to provide HHQ with updates through Situation Report.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
25. continues to mobilize volunteer fire brigades and other force multipliers.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
26. mobilizes the SRR Team.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
27. directs duty personnel to assist in water delivery to the evacuation centre.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
28. direct duty to personnel to assist in cutting uprooted trees causing road obstruction.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
29. direct duty personnel to assist in clearing roads.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
30. directs the operation officer to report to the electric and water cooperatives for the repair of damaged water and power lines.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
31. coordinates with the Mayor/LDRRMO/IC on the availability of BFP personnel for possible deployment.	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
32. Direct operation officers to check the serviceability of lifelines in the evacuation centres for subsequent reporting to the officers concerned.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
33. submits the After Operation Report to the HHQ by accomplishing Annexes "A," "B," and "C."	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
Overall Mean	4.99	VMC		4.91	VMC		4.78	VMC	

Note: The computed mean is interpreted as follows: 4.20 - 5.00 Very Much Implemented (VMI), 3.40 - 4.19 Much Implemented (MI), 2.60 - 3.39 Implemented (I), 1.80 - 2.59 lightly Implemented (S.I.), 1.00 - 1.79 Not Implemented (N.I.)

Table 16 presents the level of operational capabilities of the BFP regarding Disaster Management, as perceived by the BFP personnel, business owners, and barangay officials.

The respondents have a "Very Much Capable" level of operational capabilities in responding to emergencies along disaster management as indicative to the overall $M=4.99$ for BFP respondents and an overall mean of 4.78 as perceived by the barangay officials and $M=4.91$ for business owners. It implies that the BFP can conduct disaster management activities before, during and after disasters, and they must perform this obligation because they are active members of the Disaster Risk Reduction and Management Council of the City or Municipalities.

Felipe, 2011 stated that preparedness is the key. Lawmakers urged households, communities, and local and national authorities to ensure preparedness for natural and man-made calamities at all levels. It is supported by the response of the people that were interviewed that most of the time, they can see or observe BFP personnel going to the barangay before the typhoon to warn people and to be prepared for the coming of the typhoon. The BFP personnel conduct rescue and evacuations to flood-prone areas. They usually disseminate fire safety and disaster preparedness information, especially in July, as Disaster Preparedness/ Awareness Month.

Differences in the Level of Implementation of the BFP Program based on the Demographic Profiles of the BFP Personnel

The test of difference in the level of implementation of the BFP program based on the demographic profiles of the BFP personnel is presented in Table 17.

Significant differences were noted in the level of implementation of the Community Fire Protection Plan, based on the profile of the personnel as to sex ($F=1738.44$, $p=0.000$), age ($F=43.694$, $p=0.000$), years in service ($F=313.360$, $p=0.000$), and training attended ($F=61.157$, $p=0.000$). However, no significant difference was recorded in how the BFP personnel implemented the Community Fire Protection Plan based on the degree they had attained.

There were significant differences in the level of how the BAYANIHAN program was implemented based on the profile of personnel as to sex ($F=2072.047$, $p=0.000$), age ($F=46.511$, $p=0.000$), years in service ($F=331.418$, $p=0.000$), and training attended ($F=64.259$, $p=0.000$). However, no significant difference was noted in how the BFP personnel implemented the BAYANIHAN program based on the degree they had attained.

In terms of the level of implementation of the LINGAP program, significant differences were noted how the BFP personnel



implemented it as to their sex ($F=2332.906, p=0.000$), age ($F=48.721, p=0.000$), years in service ($F=334.327, p=0.000$), and training attended ($F=66.660, p=0.000$). However, no significant difference was recorded in how the BFP personnel implemented the LINGAP program based on the degree they had attained.

There were *significant* differences in the level of how the KAISA program was implemented based on the profile of personnel as to sex ($F=2445.195.047, p=0.000$), age ($F=49.353, p=0.000$), years in service ($F=348.620, p=0.000$), and training attended ($F=67.347, p=0.000$). However, no significant difference was noted in how the BFP personnel implemented the KAISA program based on their degree. It means that regardless of the degree attained by the BFP personnel, they are qualified as long as they meet the minimum qualifications of the BFP.

It means that the respondents, especially the newly hired, are more capable of responding to emergencies, specifically on fire operations. Since they are new in the service, they are eager to learn and have undergone training. They perform better in their responsibilities as fire rescuers. It is because they want to remain capable in their job, especially during fire operations, in order for them to be maintained and promoted to a higher rank. It also depicts that the other variables did not show a significant relationship with the capability of the BFP in responding to emergencies, which implies that the respondents have the same capability in responding to emergencies whether they are young or old, graduates, with permanent status of appointment and with or without training.

Under the Republic Act 9263 Sec 4. Professionalization and Upgrading of Qualification Standards in the Appointment of Uniformed Personnel to the BFP and BJMP, shall possess a baccalaureate degree from recognized institution of learning, A citizen of the Republic of the Philippines, A person of good moral character; possess the appropriate civil service eligibility, Must have passed the psychiatric/psychological, drug and physical test for the purpose of determining his/her physical and mental health, not have been dishonorably discharged of dismissal for cause from previous employment, not have been convicted by final judgment of an offense or crime involving moral turpitude and at least one meter and sixty-two centimeters (1.62 m.) in height for male, and one meter and fifty-seven centimeters (1.57 m.) for female: Provided, That a waiver for height and age requirement \s shall be automatically granted to applicants belonging to the cultural communities; and Must weight not more or less than five kilograms (5 kgs.) from the standard weight corresponding to his/her height, age and sex.

Carandang, 2014 stated in his report that Fire Officer I has a salary grade of 10 or equivalent to a monthly base pay of Php 29,668.00. When one decides to become a firefighter, it is not just because they are only looking for a job but is willing and committed to becoming a firefighter because it is a tough and challenging job that requires focus and determination to serve the protection the people.

Table 17. Test of Difference in the Level of Implementation of the BFP Program based on the Demographic Profiles of the BFP Personnel

Program	Sex	Age	Degree Program	Years in Service	Training Attended	
C FP P	F-value	1738.44	43.694	0.22	313.36	61.157
	p-value	0	0	0.64	0	0
	Analysis	<i>Significant</i>	<i>Significant</i>	Not significant	<i>Significant</i>	<i>Significant</i>
BAYANIH AN	F-value	2071.047	46.511	0.28	331.418	64.259
	p-value	0	0	0.598	0	0
	Analysis	<i>Significant</i>	<i>Significant</i>	Not significant	<i>Significant</i>	<i>Significant</i>
LINGAP	F-value	2332.906	48.721	0.336	344.327	66.66
	p-value	0	0	0.563	0	0
	Analysis	<i>Significant</i>	<i>Significant</i>	Not significant	<i>Significant</i>	<i>Significant</i>
KAISA	F-value	2445.195	49.353	0.351	348.62	67.347
	p-value	0	0	0.555	0	0
	Analysis	<i>Significant</i>	<i>Significant</i>	Not significant	<i>Significant</i>	<i>Significant</i>

Challenges Encountered by the Bureau of Fire Protection

The BFP personnel were asked about the challenges faced during implementing the different programs and during operations. Their responses are reflected in Table 13. It revealed that the most challenges encountered by the BFP personnel were the following:(1) Lack of needed workforce for personnel (2) Lack of fire hydrants present near or during fire incidents Dolot (2007), in his study entitled "Fire Suppression Capability and Performance of the Bureau of Fire Protection in Legaspi City". Time is a consideration in response, and it recommends the installation of at least five (5) hydrants within Legaspi City to minimize the time for water refilling during fire



incidents. The support groups and the BFP should review the MOA to iron out lapses and encourage further contributions to better fire protection services in the City of Legaspi. The BFP should focus on improving its present capability (3) Poor planning with regards to responding to emergencies, (4) Firefighters are unable to communicate appropriately through radio communication, and (5) Lack of incentives regarding hazard pay.

Table 18. Challenges Encountered by the Bureau of Fire Protection in the selected Municipal Fire Stations of Laguna

Response to Medical Emergencies	BFP Personnel			Brgy. Officials			Business Owners		
	Mean	SD	VI	Mean	SD	VI	Mean	SD	VI
1. The team leader or assigned crew gathers all initial information from dispatch.	4.91	0.41	VMC	4.87	0.49	VMC	4.96	0.20	VMC
1.1 exact location/address to include a reference as to landmarks.	4.91	0.41	VMC	5.00	0.00	VMC	5.00	0.00	VMC
1.2 nature and severity of injury, illness or accident	4.91	0.41	VMC	5.00	0.00	VMC	5.00	0.00	VMC
1.3 information on possible victims/patients, status and number	4.98	0.15	VMC	5.00	0.00	VMC	4.87	0.49	VMC
2. The team leader or crew reports to dispatch, confirms the response and notes the time.	4.98	0.15	VMC	5.00	0.00	VMC	5.00	0.00	VMC
3. The ambulance crew wears EMS vests and proper PPE	4.83	0.52	VMC	5.00	0.00	VMC	5.00	0.00	VMC
4. The ambulance crew readies additional equipment to be carried (scoop stretcher, C-collar, splints, portable oxygen tank.	4.96	0.20	VMC	5.00	0.00	VMC	5.00	0.00	VMC
5. The team leader or crew member prepares a patient care report (PCR)	4.94	0.32	VMC	5.00	0.00	VMC	5.00	0.00	VMC
6. The team leader introduces himself and asks for consent before engaging with the patient.	4.98	0.15	VMC	5.00	0.00	VMC	4.98	0.15	VMC
7. The team leader or assigned crew conducts proper assessment and initiates treatment or medical management within the scope of the level of training and standard of care.	5.00	0.00	VMC	5.00	0.00	VMC	5.00	0.00	VMC
8. The ambulance crew documents all interventions given in the PCR.	4.83	0.52	VMC	5.00	0.00	VMC	5.00	0.00	VMC
9. The team transports the patient if necessary.	4.81	0.50	VMC	5.00	0.00	VMC	5.00	0.00	VMC
10. The team leader of the crew coordinates with the DOH Operation Center for hospital transport.	4.91	0.35	VMC	5.00	0.00	VMC	5.00	0.00	VMC
11. The EMS team endorses the patient and PCR to emergency room personnel (if transported) and asks permission to leave.	4.87	0.34	VMC	4.87	0.49	VMC	4.91	0.35	VMC
12. The ambulance crew airs out the ambulance by leaving the doors open for 5-10 minutes before returning to base.	4.85	0.55	VMC	5.00	0.00	VMC	5.00	0.00	VMC
13. Any member of the EMS team notifies dispatch about leaving the hospital.	4.87	0.49	VMC	5.00	0.00	VMC	5.00	0.00	VMC
14. Any member of the EMS team notifies dispatch of the arrival at the EMS base.	4.85	0.36	VMC	5.00	0.00	VMC	5.00	0.00	VMC
15. The ambulance crew cleans, disinfects the ambulance and equipment and discards all soiled supplies.	4.91	0.28	VMC	5.00	0.00	VMC	5.00	0.00	VMC
16. The assigned ambulance crew makes an inventory and re-stock supplies.	4.94	0.25	VMC	5.00	0.00	VMC	5.00	0.00	VMC
17. The team leader or crew member completes and files any additional reports.	4.96	0.20	VMC	5.00	0.00	VMC	5.00	0.00	VMC
18. The team leader conducts defusing/debriefing or post-run evaluation as needed.	4.94	0.25	VMC	4.94	0.25	VMC	4.94	0.25	VMC
Overall Mean	4.91	VMC		4.98	VMC		4.98	VMC	

Note: The computed mean is interpreted as follows: 4.20 - 5.00 Very Much Implemented (VMI), 3.40 - 4.19 Much Implemented (MI), 2.60 - 3.39 Implemented (I), 1.80 - 2.59 lightly Implemented (S.I.), 1.00 - 1.79 Not Implemented (N.I.).



CONCLUSION AND RECOMMENDATION

The findings of the research revealed that a substantial percentage of the BFP respondents are 31-35 years old, males, graduates of Bachelor of Science in Nursing, and completed the Fire Basic Recruit Course with 1-5 years in service.

The level of operational capabilities in responding to human-induced and natural Disasters in terms of Fire Safety Enforcement, Firefighting Operations, Fire/Arson Investigation, Emergency and Medical Services and Disaster Management is "Very much Capable." As to the program's implementation level, it has a remark of "very much implemented" interpreted as high. As to the challenges encountered, the BFP mainly experienced a "lack of manpower for personnel."

After a thorough analysis, the researcher concluded that there is a significant difference in the implementation of the program and the demographic Profile of the BFP, and there is no significant difference was recorded in how the BFP personnel implemented the programs based on the Degree they had attained.

The main problem that the Bureau of Fire Protection faces today is the need for a workforce. The ideal fireman-to-population ratio is 1:2000.

Additionally, the perfect workforce in every Fire Truck is seven (7) per shift; there are two (2) shifts daily. The estimated force in a day for operations divisions is twelve (12) per Fire Truck; if there is a three (3) Fire Trucks, then the ideal number of human resources is thirty-six (36), which is necessary to fill in the missing number of firefighters due to the expanded powers of the bureau, aside from the ideal fireman-to-population ratio.

The BFP must push to expand the capabilities and functions of the Bureau of Fire Protection (BFP) considering the agency's crucial role in saving lives and properties in times of fire and various disasters. Additional personnel to be assigned in every Station are advised to strengthen further the operational capabilities in responding to human-induced and natural disasters and implementing the programs and to achieve the ideal fireman-to-population ratio, which will further ensure public safety.

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FUNCTIONAL FEATURES OF JAPANESE AND UZBEK PROVERBS WITH ZOON COMPOTE

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ABSTRACT

In this article, we will try to describe the interdependence of language and culture in the analysis of the linguoculturological aspects of Uzbek and Japanese proverbs, consider thematically similar aspects of proverbs in Uzbek and Japanese, and take a deeper approach to such issues as mentality and expression of a national character in them. Language is the most important factor in expressing the culture, values and beliefs of each nation, the specific aspects of the people in general.

KEYWORDS: Japanese and Uzbek proverbs, zoon compote, foreign language, linguoculturological aspects.

Today, at a time of intense research on Proverbs, the study of all facets of Proverbs is one of the main tasks of the field of paremiology. We have no choice but to dwell on their linguocultural aspects as part of the study of comparative aspects of Proverbs. Through this, we will try to show the similarities and differences of the proverbs in the languages we are researching, the culture and unique mentality of the people who own this language.

From linguistic scientists, Nida says that it is important to study a people's language, as well as its culture. He argues that language and culture are a similar system that has evolved in an interdependent way. The disclosure of the cultures of all states, as a life lesson to subsequent generations, is a proverbial set of values with value that show the uniqueness of society. One of the indispensable things is the proverbs of the works of the language in which there is a so-called Deep-Root wisdom. Traditionally, the proverb is understood as part of a long language that reveals the lessons of life through bitter, unforgettable and metaphorical beings that are universally attached to any culture.

In Japanese, kotovaza is called a proverb. Inside the Kotovaza, Koujien contains a sentence containing short lessons and an exuberance that has been used by people since ancient times. In interaction, the Japanese people often hide their true feelings to maintain harmony in them it is Proverbs that are used the most in relationships with other people. Like other languages, proverbs in Japanese are closely related to Japanese and culture. Proverbs or kotovaza are important in communication because they can soften speech. In kotovaza, body parts, contact with plants, animals, objects were classified on their basis. In understanding the meaning of Proverbs, it cannot be interpreted directly, but it is possible to understand the meaning and figurative meaning of the relationship between its lexicon.

In Japanese, there are a lot of Proverbs about the participation of animals especially flowering plants. It is through these symbolism that they try to reveal the identities of the country. Especially proverbs in gular ishitiroki are also

plotted. Using animal elements, their proverbs are expressed yes. Due to the difficulty of understanding a dog in Japanese, dog component proverbs are also among them.

The meaning of Kotovaza with a dog is Inu in Japanese. In this chapter, we will analyze the proverbs in which the dog took part. Is formed from Kotovaza. The Inu word meaning "dog" is 論語 Rongo Taoism means one book. Taoism in Japan is a philosophy that studies natural life. Based on the aspect of the formation of the world, the proverb "inu" rongo lexically means giving a book to a dog. In the above kotovaza there is the idiomatic meaning, the meaning of giving something in vain or something else does not understand.

A person who speaks in this context. Giving a book to a dog in this is a vain effort. Because the dog cannot read. If we explain the meaning of the book then the dog is sure that this will not happen and says that it may be able to understand it.

昨日お父さんとをりりてへ行さんつんだ。

Kinou otou-san to konsato e ittekimashita

Yesterday my father and I went to a concert

キラスクショントだっただしま、僕もお父さんもすっかり眠ますただした。

Kurashikku konsato datta keredo, boku mo otousan mo sukkari nemutte shimattanda.

We watched a classic concert, but Dad and I accidentally fell asleep.

せつかるの花行も犬に論語だったのね。

Sekkaku no geijutsu mo inu ni rongo datta no ne.

Art is also a book for dogs.

In the conversation above, Kenta said that she and her father visited a concert of classical music. He and his father then accidentally fell asleep at a concert. Tomoko responded: 'art is also a book for dogs' in this context, classical music concert musical artwork has high artistic value, but Kenta and her father cannot appreciate it by falling asleep, an example of kotovaza's proverb that a dog cannot appreciate a book. In this, the failure to reach something old is so iodized in the Japanese



in order to reveal such characteristics as indifference. Art is also a kiob for dogs phraseological units have been used.

吠える犬は噛みつかぬ

“Hoeru inu wa kamitsukanu”

「吠える犬」Derived from the word "hoeru inu means the dog barks va" 「噛みつかぬ」 "Kamitsukanu" does not mean biting. Based on this word, this kotovaza has a lexical meaning of a dog barking, not biting.

Nevertheless, in an idiomatic sense, this kotovaza has a meaning and strong and loud speech, but does not dare to act. In addition, it can also be interpreted by people who seem cruel giving the meaning that they are not dangerous.

今下一个电影いい子は仲がいいの?

Ima issho ni aruita ko wa naka ga ii no? Kowai te yumei dakedo.

Are you close to the child walking with you now? He said in fear.

ああ、He's a big guy.

Aa, kare wa ganbatteru shi karada ga ookii kara kowasou ni mieru kedo, hoeru inu wa kamitsukanu to iu kotoba doori de taishita koto wa nandayo.

It looks scary because it is large body, but it does not matter because it looks like a dog that barks and does not bite.

In the example above, Tomoko asks about a man walking Kenta, because Tomoko hears that man is scary. Kenta later says that this man is his friend and explains that it is his big body, it looks scary because of his friend, but nothing worry, mentioning the dogs that this shell does not bite. As discussed earlier, the meaning of kotovaza is hoeru inu and kamitsukenu it is not even clear that if someone looks scary or cruel, it does not mean that this person is bad.

犬も歩偉棒に当たる

Inu mo arukeba bou ni ataru

Some sentences in Japanese cannot be changed so they can make meaning from Proverbs themselves. They use the dog in the sense of an uncomfortable barrier. But they are glorified as a faithful animal. The proverbs of the Japanese language have two meanings. That is, lexical and idiomatic.

Turning to the dog side of things, we see in some Japanese proverbs that dogs are associated with various quarrels, whether as participants or spectators.

犬猿の仲 — Ken'en no naka.

having a relationship" like dogs and monkeys " means being hostile or extremely mean to each other.

犬の遠吠え — Inu no tōboe.

If someone criticizes other people on their back, this gossip can be compared to a "long howl of a dog" who does not want to get close enough to get into a real fight.

夫婦喧嘩は犬も食わない — Fūfu genka wa inu mo kuwanai.

Disputes between husband and wife often cause minor reasons that are difficult for strangers to understand and are quickly resolved. In Japan, " even dogs don't eat family fights."Dogs are known for not being fussy about what they eat, but they don't "eat" (or interfere) the fights of even married couples. This word also advises people to keep their distance.

Everything has two sides, this is shown by the final set of Proverbs.

飼い犬に手を噛まれる — Kainu ni te o kamareru.

Dogs are usually loyal pets, so "biting the hand by their dog" is a symbol of betrayal by a trusted subordinate.

犬が西向きゃ尾は東 — Inu ga nishimukya o wa higashi.

"If the dog looks west, its tail is in the East."This is a way to say that someone is speaking clearly.

犬も歩けば棒に当たる — Inu mo arukeba bō ni ataru.

"If the dog walks, he will find a stick."This old proverb can be read in two ways. According to one reading, the dog is hit with a stick, and therefore this phrase warns that stepping forward poses a risk of disaster. However, other, opposite reading, stick dogs love to perform around it is plaything. In this interpretation, it is better to act without doing anything, as this can lead to reward .

Every dog has a day. This is the saying that dogs are used in the same way. This means that the dog also has a dog's day. That is, there is a day when good things happen. The image of Dogs is that they are active animals in many countries, so the proverb "you can come across good things when you walk around."So it's like" Let's try! “

Proverbs often change their meaning because they are used every day. Why 犬も歩けば棒に当たる — Inu mo arukeba bō ni ataru.

"If the dog walks, he will find a stick."the proverb means completely different?

This is due to the fact that nowadays it is not uncommon to hit a dog with a stick, and it is difficult to imagine that people are faced with such disasters when dogs walk. The idea of animal welfare is also becoming more and more, so such changes in society can also have a huge impact. We can also see this change as evidence that the relationship between people and dogs has evolved from one thing to a friend.

犬に3日間餌を与え、3年間感謝します。猫に3年間餌をやると、彼は3日後にそれを忘れるでしょう

inu ni 3 hima e o atae, 3 nenkan kansha shima su. neko ni 3 nenkan e o ya ru to, kare ha 3 higo ni sore o wasureru deshō

Feed the dog for three days and be grateful for three years. Feed the cat for three years, and she will forget after three days.

In this, it is hinted that the dog is faithful. Do someone you don't forget if you do good. The one who forgets will forget, even if you do so much good. It was used towards the character of people.

あなたが犬になったら、裕福な家族の犬になる
ana ta ga inu ni na ttara, yuufuku na kazoku no inu ninaru

If you become a dog, become a dog of a wealthy family.
金持ちの家には瘦せた犬はいません。

kanemochi no ie niha yaseta inu hai masen.
There is no lean dog in the House of a rich man.

弱い犬ほどよく吠える-
Yowai-inu-hodo-yokuhoeru

Someone who is dependent on others should make friends with the dog.

Weak dogs bark more often. The weaker the dog, the more he barks.



An incompetent person looks like a dog prone to a boss attitude. Bvu is being used in the sense that you do not depend on someone who is hungry for your abilities to work on yourself.

犬がいないところでは、オオカミは遠吠えします。
inu ga i nai toko ro deha, ookami ha tooboe shima su.

Where there are no dogs, wolves howl. When Jackal Wolves say they howl where there are no dogs. Gossiping human beings speak from the back of the talking person while he is away but cannot speak in front of him. These describe the dog as a strong human quality.

健康な犬が狂った犬と戦うとき、この健康な人の耳は噛みます

kenkou na inu ga kyou tsu ta inu to tatakau toki, kono kenkou na jin no mimi ha ka mima su

When a healthy dog fights a crazy dog, the ears of this healthy person are bitten. Healthy man stupid bialn does not fight. It is hinted that he will be hurt even if he fights.

犬には4本の足がありますが、同時に4本のトラックを歩くことはありません。

inu niha 4 honno ashi ga ari masu ga, doujini 4 honno torakku o aruku kotoha ari masen.

The dog has four legs, but he does not walk on four tracks at the same time. A person must always follow one path and cannot have time for any of them, saying that at the same time I will have time for four things.

空腹のオオカミは満足している犬よりも強いです。

kuufuku no ookami ha manzoku shite i ru inu yorimo kowai desu.

A hungry wolf is stronger than a satisfied dog. A greedy person will be ready to do everything. Through this, it is thrown at everyone. And a satisfied person is spoiled by life. For Shuninmg, life-hungry bvorl i.e. from a greedy person, you should always walk exttiously. They can strike when not expected.

犬は愛撫し、彼は彼の汚れた足であなたをマークします。*inu ha aibu shi, kare ha ano ore ta ashi dea na ta o maku shima su.*

The dog is stroked and he marks you with his dirty paws. You can do good to a bad person. But he will be unhappy with you because he does not know the good, and with his dirty hands he will show you. Do it to those who know the good.

感謝している犬は、恩知らずの人よりも価値があります。*kansha shite i ru inu ha, onshirazu no jinyori mo kachi ga ari masu.*

A grateful dog is worth more than an ungrateful person. Ungrateful people are even inferior to dogs. A person must live with gratitude all the time.

白い犬は別の白い犬を噛むことはありません。*shiroi inu ha betsu no shiroi inu o kamu kotoha ari masen.*

A white dog will not bite another white dog. Humans must always help each other. It is necessary that representatives of one nationality support and protect each other not to harm each other. It is hinted that hattoki dogs do not bite each other either.

ハイエナが消えると、犬は吠え始めます。*haiena ga kieru to, inu ha suokane e hajime masu.*

When the cyrtlon disappears, the dog begins to bark. In society, when Wise and wise people leave, the ignorant can go up and pretend to say different kinds of shit.

話し手は犬を肉市場に連れて行きます。
hanashite ha inu o shishi ichiba nitsurete iki masu.

The talking dog is taken to the meat market. A lot of talking loses. In the end it turns into meat in the market. Kam gapir is a synonym for the proverb Kam soyla.

犬の吠え声はラクダの中の人を悩ませません。
inu no hoegoe ha rakuda no nakanohito o usume mase masen.

The barking of the dog does not bother the man on the camel. The dog barks but a person should bring to the end what he started and not pay attention and time to different sentences. If the time comes to these, he will not be able to reach his destination. That is, he cannot do what he thinks.

犬は何かに吠え、残りはそれに吠えます。*inu ha nanika ni suokane e, nokori ha sore ni suokane ema su.*

A dog barks at something, and the rest barks at it. A sign that it's not good to join in and bark without knowing what it's hurting. In this, a reference to the contagion that followed someone without fully understanding their opinion.

話さない人と吠えない犬に注意してください。
wa sana i jin to suokane ena i inu ni chuui shite ku dasai.

Beware of a person who does not speak and a dog that does not bark. You will not expect when a dog that does not speak or barks suddenly attacks kata talofat if you see so always be exttitive.

骨のある犬は常に危険にさらされています。
honenaru inu ha tsuneni kiken ni sarasa re tei masu.

A bony dog is always at risk. Kata attempts to knock them out at the moment when there will be people who are selfish in society towards people who have achieved achievements. It is then hinted that a person must be exttient.

他の人に依存している人は、犬と友達になる必要があります。

ta no jin ni ison shite i ru jin ha, inu to tomodachi ninaru hitsuyou ga ari masu.

Someone who is dependent on others should make friends with the dog. It is hinted that the dog is faithful. In this, the dog is also always hinted at the helplessness of being dependent on a person. In this, the fact that everyone can act on their own and not be dependent is a sign of being free to think independently.

犬は貧しい家族にも愛情を示しています。
inu ha mazushiiie zoku nimo aijou o shimeshi tei masu.

The dog shows affection even to a poor family. It's like the dog's quality of loyalty, which means that it shows mexr to the place where the poor Hox get rich.

たくさん吠える犬は決して良いハンターにはなりません。

taku san hoeru inu ha kesshite yoi hanta nihana rima sen.

A dog that barks a lot will never be a good hunter. A person who has spoken and quarreled a lot cannot achieve any achievement and respect. A sign that the hunter must be able to behave everywhere in order to become a dog.

良い犬は理由もなく吠えません。



yoi inu ha riyuu mona ku suekane ema sen.

A good dog will not bark for no reason. A good person will not quarrel with anyone for no reason and will not be narrowed. When caused, it is used in the sense that the end is forced to quarrel.

あなたが犬になったら、必ず豊かな家族を選んでください。

ana ta ga inu ni na ttara, hitsuzu yutaka na kazoku o sen nde ku dasai.

If you become a dog, do not forget to choose a rich family. Lives in a rich family without suffering. There is also a saying in the Japanese that the dog of a rich family will not be skinny. The rich man *dega nda* is referring to the *sahiy* man. The *Sahiy* man does not heat up anything from anyone even from dogs so it is hinted to be *nsahiy*.

平時には犬になる方が良いです、これは戦時中の男です *tairanotoki niha inu ninaru hougayoi desu, kore ha senjichuu no o desu*

It's better to be a dog in peacetime, it's a wartime man. He faces challenges in times of War when human beings are very *kata*. Therefore, even in the *Uzbeks*, we can compare the proverb that it was humiliated like a dog. It is pointed out that peace should be lived on good days to be appreciated.

In *gtmacols*, "dog" is often used in a bad sense. Dogs have brutal depictions in *yopn* proverbs such as killing, beating, and stone-throwing. And initially "dog" means spy or disgusting. The Japanese proverb, "*inumo arukeba bouni Ataru*", originally meant "a dog that does nothing wrong should be beaten with a stick". One reason dogs appear to be bad animals is because they are violent and humble in the Bible. The second reason why Japanese proverbs differ with dogs is that Japanese dogs are free or independent animals.

In Japanese, through dog-component Proverbs, vices in society and personal qualities of citizens are revealed e.g.; in Japanese, in a better proverb, which is a dog in peacetime when a man in wartime, it is revealed that to appreciate peace is that war does not cause good consequences. We can see that the Dog reveals a symbol of loyalty when it says that it shows affection even to a poor family. In Japanese in general, proverbs in which the dog participated reveal qualities such as good and evil.

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MULTIMEDIA IN EDUCATION

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ABSTRACT

Due to its capacity to improve educational experiences and encourage student engagement, multimedia has seen an increase in use in classrooms recently. The use of many media types, including text, images, audio, video, and animations, in instructional materials is referred to as multimedia. The article discusses the benefits of multimedia in education, its impact on student learning, and the challenges associated with its implementation. The article also highlights the importance of using multimedia in education and provides recommendations for educators and institutions to effectively integrate multimedia in their teaching strategies.

KEYWORDS: *multimedia, education, benefits, impact, enhanced learning, engagement, personalization, challenges.*

MULTIMEDIA IN EDUCATION

Due to technological advancements and their capacity to improve learning experiences, multimedia has become more and more popular in education. Multimedia refers to the inclusion of different types of media in instructional materials, including text, images, audio, video, and animations. By delivering information in a variety of ways that accommodate various learning styles, multimedia can facilitate learning, claim Clark and Mayer (2016). For instance, while some students might prefer aural aids, others could prefer visual aids. Therefore, the usage of multimedia can aid instructors in meeting the various learning demands of their students.

BENEFITS OF MULTIMEDIA IN EDUCATION

The usage of multimedia in the classroom has a number of benefits.

First off, students' ability to retain information can be improved through multimedia. In contrast to students who simply received verbal instructions, those who were exposed to multimedia materials remembered greater information, found a study by Mayer and Moreno (2002). Studies have demonstrated that when compared to traditional text-based learning, the inclusion of multimedia can improve memory recall and knowledge retention. This is so that the information being delivered and the context in which it is being presented can be more strongly associated.

Second, multimedia can encourage students' engagement. Multimedia can appeal to various learning styles and help hold the audience's attention by providing information in a number of formats.

The ability of multimedia to support collaborative learning is another advantage of its use in education. Students can collaborate to finish projects and assignments by using multimedia resources including video conferencing, online discussion forums, and collaborative document editing software. Important teamwork and communication skills, which are highly appreciated in the business, can be developed through this.

Additionally, multimedia can be used to tailor each student's educational experience. Multimedia can help to enhance learning outcomes and student satisfaction by offering personalized learning paths that are tailored to each student's requirements and interests. Students who struggle with regular classroom learning or who have special learning challenges may find this to be especially helpful.

Finally, there are a lot of practical factors to take into account while employing multimedia in education. For instance, by automating certain procedures like grading and assessment, multimedia might help teachers labor less. By giving users access to a variety of resources that can be used repeatedly over time, multimedia can also help to lower the cost of educational materials.

All in all, by giving teachers a range of tools to effectively communicate knowledge, multimedia can enhance the quality of teaching and learning.

IMPACT OF MULTIMEDIA ON STUDENT LEARNING.

Improved Engagement. Multimedia can boost student engagement in addition to improving learning outcomes. The usage of multimedia in the classroom can increase learning engagement and keep students motivated. A University of Southern California

study found that students who were taught utilizing multimedia resources expressed greater levels of engagement and interest in the subject matter (Mayer, 2014).

Enhanced Learning Outcomes. There has been a lot of research done in the literature on how multimedia affects student learning. The usage of multimedia can boost student performance, according to numerous research. In a medical school context, for instance, Kalyuga et al.'s study from 2000 indicated that the usage of multimedia significantly improved student performance. Similar to this, Rieber (1996) discovered that students' information retention was better when multimedia was used in the classroom.



A University of California, Los Angeles study found that students who received instruction utilizing multimedia elements performed better on assessments than those who received instruction using traditional techniques (Mayer, 2009). The study discovered that multimedia can both enhance pupils' information retention and improve their critical thinking and problem-solving skills (Mayer, 2014).

Personalization. Additionally, multimedia can be used to tailor the educational experience for each learner. Multimedia can be used by teachers to design specialized learning materials that are tailored to the unique requirements and interests of their students. For instance, a teacher could make a video that presents a challenging idea in a way that suits a specific student's learning preferences (Mayer, 2009).

Implementing Multimedia Faces Difficulties.

Despite the advantages of multimedia in the classroom, there are a number of practical issues. First off, creating multimedia content may be expensive. Multimedia content production calls for expensive, specialized tools and talents. It can take a lot of time and money to produce high-quality multimedia resources, which may be a barrier for certain educators (Mayer, 2009).

Second, the usage of multimedia may be accompanied with technological issues. The efficacy of multimedia assets might be hampered by technical problems including slow internet connections and program compatibility.

Finally, it may be thought of as the possibility for diversion. Multimedia can increase attention and engagement, but if utilized improperly, it can also be distracting. Teachers must be aware of the amount of multimedia they use and how it is integrated into the lesson (Mayer, 2014).

Recommendations for Successful Multimedia Integration in Education.

The following actions can be taken by educators and institutions to successfully integrate multimedia in education:

1. Provide access to multimedia resources: Providing students and teachers with the required hardware and software is one of the first stages in integrating multimedia into education. This comprises tools that can be used to show multimedia content, such as laptops, tablets, projectors, and other gadgets.
2. Create multimedia content: universities have the ability to create multimedia content that can be used to improve students' learning experiences. This can include visual aids like movies, cartoons, interactive games, and simulations that students can participate in.
3. Incorporate multimedia into lessons: To ensure that students fully comprehend the topic, teachers might use multimedia in their courses. For instance, teachers can utilize simulations to assist students practice a skill or movies to introduce a new subject or illustrate a procedure.
4. Educate educators: It's critical to educate educators on how to use multimedia effectively in the classroom. This can assist them in developing multimedia-rich lessons that are interesting and effective.
5. Determine whether multimedia is effective: It's critical to determine whether multimedia is effective in the

classroom. To find out if the multimedia is assisting students in learning and memory retention, this can be done through student surveys, exams, and other techniques.

In general, the use of multimedia in the education system can help to enhance the learning experience for students and provide them with the skills and knowledge they need to succeed in today's digital world.

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ASSESSMENT OF ECONOMIC EFFICIENCY OF INNOVATIVE ACTIVITY OF INDUSTRIAL ENTERPRISES

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ABSTRACT

In the effective implementation of innovative activities, it is widely revealed that the activity of technological exchange, which explains the processes of sale and purchase of new technologies, manifests itself as a technological investment, and also recommends the development of technological parks.

KEY WORDS: *assessment, economic efficiency, innovative activity, industrial enterprises.*

The organizational aspect of innovation is seen as both the beginning and the end of every innovation management. In it, the main goals and tasks of the project are focused on these indicators, taking into account that effective influence on increasing the life cycle of products and services, occupying the main markets, expanding investment activity and increasing the employment of the population are important elements of innovative activity (Figure 1.4). Accordingly, the methodology for evaluating the economic efficiency of innovative activities of industrial enterprises is aimed at solving these issues (Figure 1.5): justification of scientific research tasks; determining the criteria and indicators for evaluating economic efficiency; assessment of the impact of innovative activity on the efficiency of the industrial enterprise and selection of effective methods of its implementation .

The criteria for evaluating the innovative activity of industrial enterprises are as follows: the level of scientific potential of the industrial enterprise; level of access to information and scientific achievements; competitive developments that ensure the achievement of the goal of the industrial enterprise.

Table 1
Classification of economic performance indicators of innovative activity of industrial enterprises¹

No	Indicator name	Pointer expression	The optimal point of the indicator
<i>The level of scientific potential of the enterprise</i>			
1.	Coefficient of level of scientific potential of industrial enterprises	$k_{Is} = \frac{X_{If}}{JX_{Ich}}$ here, k_{Is} - scientific potential level coefficient; X_{If} - cost of innovative activities, million soms; JX_{Ich} - total production costs, million soms.	≤ 0.75 _ _
2.	Coefficient of introduction of own research and development	$k_{O'zIshJq} = \frac{M_{JqO'zIsh}}{JM_{AoO'zIsh}}$ $k_{O'zIshJq}$ - coefficient of introduction of own research and development; $M_{JqO'zIsh}$ - amount and number of introduced own developments; $JM_{AoO'zIsh}$ - total amount, number of self-developed projects.	< 0.60
3.	Coefficient of implementation of the results of own research and development	$k_{O'zIshTq} = \frac{M_{JqO'zIsh}}{JM_{JqIsh}}$ $k_{O'zIshTq}$ - coefficient of implementation of the results of own research and development; $M_{JqO'zIsh}$ - amount and number of introduced own developments; JM_{JqIsh} - the total number of introduced developments.	< 0.50
<i>Level of modernization and labor productivity</i>			

¹It was developed based on the author's research.



No	Indicator name	Pointer expression	The optimal point of the indicator
4.	The rate of renewal of techniques and technologies	$k_{Tty} = \frac{Q_{yti}}{Q_{tt}}$ <p>k_{Tty} - coefficient of renewal of techniques and technologies; Q_{yti} - the cost of new equipment and technologies launched this year, million soums; Q_{tt} - total value of equipment and technologies, million som.</p>	< 0.60 _
5.	Coefficient of obsolescence of techniques and technologies	$k_{Tte} = \frac{Q_{tte}}{Q_{ttb}}$ <p>k_{Tte} - coefficient of obsolescence of techniques and technologies; Q_{tte} - depreciation cost of equipment and technologies, million som; Q_{ttb} - initial cost of equipment and technologies, million som.</p>	< 0.50 _
6.	Fund return ratio	$k_{Fq} = \frac{Q_{ichm}}{Q_{aichf}}$ <p>k_{Fq} - fund return coefficient; Q_{aichf} - the initial value of the main production funds, million soums; Q_{ichm} - volume of manufactured products, million som.</p>	< 0.65 _
7.	Coefficient of armed with stock	$k_{Fbq} = \frac{Q_{aichf}}{S_i}$ <p>k_{Fbq} - coefficient of armed with the fund; Q_{aichf} - the initial value of the main production funds, million soums; S_i - number of employees, people.</p>	<45
8.	Labor productivity coefficient	$k_{Mu} = \frac{Q_{ichm}}{S_i}$ <p>k_{Mu} - labor productivity coefficient; Q_{ichm} - volume of produced products, million soums; S_i - number of employees, people.</p>	< 0.60 _
<i>Level of product competitiveness</i>			
9.	Coefficient of product competitiveness	$k_{mr} = \frac{Q_{tym} - Q_{tpm}}{Q_{tym}}$ <p>k_{mr} - coefficient of product competitiveness; Q_{tym} - volume of products in high demand, million soums; Q_{tpm} - volume of products in low demand, million som.</p>	< 0.55
10.	Product refresh rate	$k_{my} = \frac{Q_{tym}}{Q_{Ishym}}$ <p>k_{my} - product renewal coefficient; Q_{tym} - volume of products in high demand, million soums; Q_{Ishym} - volume of newly produced products, million som</p>	< 0.80
11.	New product adoption rate	$k_{yo'zl} = \frac{Rt.m.}{Rr.}$ <p>$k_{yo'zl}$ - Coefficient of assimilation of new products; $Rt.m.$ - income from the sale of new products and products manufactured using innovative technologies; $Rr.$ - income from the sale of all products.</p>	$K \geq 0.45$ to 0.50 - leadership strategy ; $K \leq 0.45$ to 0.40 is of the follower strategy



The level of innovative development			
12.	Coefficient of innovation development	$k_{inn.ozl} = \frac{Pinv.loy.}{Cinv.xar.}$ <i>k_{inn.ozl}</i> - Coefficient of adoption of innovative products; <i>Pinv.loy.</i> – investment in research and education of projects value ; <i>Cinv.xar.</i> - the total value of other investment costs;	$K \geq 0.50$ to 0.60 _
13.	Provision of cocktail resources with ITI and IFYu	$k_{t.ish.h.} = \frac{Lt.ish.}{Wish.h.}$ <i>k_{t.ish.h.}</i> - coefficient of employees used in research and development; <i>Lt.ish</i> –the number of people employed in the field of research and development; <i>Wish.h.</i> - average number of employees;	$K \geq 0.20$ to 0.25 - the company is leading strategy chooses ; K from 0.20 to 0.15 - the company is a follower strategy chooses _

Based on the above, taking into account the specific characteristics of the oil and gas industry (capital, fund and labor capacity), which is the object of research, in our opinion, the indicators of the economic efficiency of the innovative activity of industrial enterprises should be determined by the scientific potential of the enterprise, modernization and labor productivity, and the level of product competitiveness. Similarly, it can be classified into four criteria representing the level of innovative development (Table 1.1).

Indicators of the level of scientific potential of the enterprise. The level of scientific potential of industrial enterprises explains the introduction and implementation of their scientific research developments. In this case, the level of scientific potential of enterprises can be determined in the form of the ratio of the costs of innovative activities to the total production costs. It is expressed as follows:

$$k_{Is} = \frac{X_{If}}{JX_{Ich}} \quad (1.1)$$

where: k_{Is} - scientific potential level coefficient;

X_{If} - cost of innovative activities, million soms;

JX_{Ich} - total production costs, million soms.

This indicator can be normative, planned and real. If necessary, this indicator can be used to evaluate the company's potential among competing companies. The innovative potential of the enterprise is determined depending on the level of indicators. In it, the levels of innovative activity are created on the basis of a set of indicators showing the internal socio-economic and financial situation of the enterprise, and it also determines the direction of the enterprise's strategy (Table 1.2).

The innovative activity of industrial enterprises can be evaluated by the coefficient reflecting the share of **introduced developments** in the total amount of their own **research and development** . It will have the following expression form:

$$k_{O'zIshJq} = \frac{M_{JqO'zIsh}}{JM_{AoO'zIsh}} \quad (1.2)$$

where, $k_{O'zIshJq}$ - coefficient of introduction of own research and development;

$M_{JqO'zIsh}$ - amount and number of introduced own developments;

$JM_{AoO'zIsh}$ - total amount, number of self-developed projects.



Table 1.2
Types and level of innovative potential of the enterprise

Indicators of innovative potential and means of covering costs	Brief description of the level of innovative potential of the enterprise	The strategy of developing the innovative potential of the enterprise
High level		
Private means S (1;1;1)	The private means of the enterprise are provided at a high level, there is no need for external support of the enterprise.	in the market and competitive market : - does not spare any cost in the adoption of new technologies - correctly assesses the innovative potential and correctly directs the company's strategy for its future
Middle level		
Uses private equity and long-term loans S (0 ;1;1)	The private means of the enterprise are not provided at a high level, the enterprise needs external support.	Follow-up strategy: - due to the correct assessment of the competitive environment in the adoption of new technologies, he does not avoid covering expenses on credit
Lower level		
It uses private funds and long-term loans and an external partner S (0 ; 0 ; 1)	Due to the high lack of private funds of the enterprise, the enterprise has a need for external support, and also prefers to build external cooperation in exchange for having debt.	Adoptive strategy: - In order to maintain the stability of enterprises in the competitive environment, they work based on the strategies of other developed enterprises.
The lowest level		
The state of its private funds is unregulated and it uses long-term loans and an external partner S (0 ; 0 ; 0)	The company is slow to regulate the level of use of tools and takes advantage of the opportunity to improve the health of its company, and does not care about the increase in the share of shareholders.	Black Swan Strategy: It is a crisis strategy, and like any other strategy, it involves risk.

Source: Kadyrov A.M., Kadyrov U. Innovative potential razvitiya promyshlennyykh predpriyati respubliki v usloviyax rynka // "Novoe kachestvo ekonomicheskogo rosta: innovatsii, konkurentosposobnost, investitsii". Materialy Respublikanskoy nauchno-prakticheskoy conference. 1 volume. -T.: Maliya, 2008.-p.53-54.

This indicator can be used to justify and evaluate the scientific level of innovative activity of industrial enterprises. To evaluate the innovative activity of industrial enterprises and to determine the reasonable relationship between purchased and own research and development, the ratio of own development to the total amount of implemented research and development can be used. It has the following expression form:

$$k_{O'zIshTq} = \frac{M_{JqO'zIsh}}{JM_{JqIsh}} \quad (1.3)$$

here, $k_{O'zIshTq}$ - the coefficient of implementation of the results of own research and development;

$M_{JqO'zIsh}$ - amount and number of introduced own developments;

JM_{JqIsh} - the total number of introduced developments.

own research and development $k_{O'zIshTq}$ with the help of the indicator , it is possible to think about the rate and level of scientific research development in enterprises . If the high value of this coefficient is close to one, the innovative activity of the industrial enterprise is high. On the contrary, if the coefficient is lower than 0.5, it indicates the low activity of the enterprise in the development and introduction of innovations.

In addition to this, if we emphasize the importance of developing and implementing one's own innovative developments, it is of great importance to identify and justify the scientific and research developments being adopted and implemented by other enterprises.

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ISSUES OF PROVIDING RAILWAY TRANSPORT WITH LOCAL PERSONNEL IN THE 20S OF THE XX CENTURY (BASED ON ARCHIVAL MATERIALS)

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ABSTRACT

This article considers the national personnel support of railway transport in the context of the construction of the Soviet state and the measures taken in this area. We also analyzed the attitude towards local personnel in the context of personnel shortages and historical prerequisites based on archival materials.

KEY WORDS: *Soviet power, railway, Central Asian railway, personnel reserve, commissariat of railways, FZU, technical school.*

ВОПРОСЫ ОБЕСПЕЧЕНИЯ ЖЕЛЕЗНОДОРОЖНОГО ТРАНСПОРТА МЕСТНЫМИ КАДРАМИ В 20-Е ГОДЫ XX ВЕКА (НА ОСНОВЕ АРХИВНЫХ МАТЕРИАЛОВ)

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Аннотация: В данной статье рассматривается национальное кадровое обеспечение железнодорожного транспорта в условиях строительства советского государства и меры, принимаемые в этой области. Также были проанализированы отношение к местным кадрам в условиях кадрового дефицита и исторические предпосылки на основе архивных материалов.

Ключевые слова: Советская власть, железная дорога, Среднеазиатская железная дорога, кадровый резерв, комиссариат Путей сообщения, ФЗУ, техникум.

После установления советской власти, искусственного исключения существующих специалистов из административных структур, в условиях не сформировавшейся новой кадровой структуры стала очевидна нехватка кадров для организации производства и управления экономикой и сферой духовности. В железнодорожном секторе именно в этом процессе наряду с нехваткой кадров важное значение приобрел вопрос коренизации. Поэтому в Узбекистане, как и в других среднеазиатских республиках, в первые годы советской власти проводились мероприятия по привлечению рабочих и представителей коренных народов к обучению на различных курсах и в учебных заведениях для работы на железных дорогах.

Для выполнения задач, поставленных перед железнодорожным транспортом в условиях советского государственного строительства, необходимо было не только укрепить материально-техническую базу, но и вновь обеспечить ее грамотными кадрами, рабочими и инженерно-техническими работниками. Именно в этот



период в республике было уделено внимание системе подготовки квалифицированных рабочих. Широко налажено производство специалистов в высших учебных заведениях и техникумах.

Согласно письму Ташкентского Управления железных дорог, в Управление среднеазиатских железных дорог от 10 декабря 1923 года, совет по образованию при Ташкентском управлении железных дорог обсуждал вопрос об открытии курсов подготовки агентов службы передвижения среди местного населения. Дорожное управление должно было предоставить помещения для таких курсов. Но в связи с тем, что у Дорожного управления не было средств на организацию курсов, совет по делам образования решил представить правительству Туркестанской республики представление об организации 6-месячных курсов в Ташкенте[1]. Процесс подготовки кадров для железнодорожного транспорта продолжался неоднозначно.

С 30 августа по 15 октября 1923 года в Ташкенте были организованы курсы кондукторства для местных жителей (мусульман). На 1 сентября, когда были назначены испытания, зарегистрировано 48 человек из областей Туркестанской республики. 41 из них признаны годными. Мусульмане регулярно принимали участие в курсах в количестве от 20 до 29 человек. По окончании экзаменов они попросили материальную помощь, заявив, что не имеют платьев, обуви и средств на должность кондуктора[2]. В Президиуме Допрофсоюз обсудили вопросы заочного образования. Состояние заочного образования в системе Среднеазиатских железных дорог в целом неудовлетворительное, в 1,2,3 квартале 1923 года было охвачено 289 курсантов вместо 700. Консультационные центры созданы слишком поздно[3].

16 августа 1924 года представитель Комитета по местным делам Туркестанских дорог и организационное отделение Народного комиссариата дорог Средней Азии направили письмо Центральному исполнительному комитету Советов по наполнению учреждений местными кадрами и переводу делопроизводства на местный язык. По его словам, Юнусов, Алимхужаев, Назарбеков, Саломов и другие, проходящие практику на Ташкентских железных дорогах, обратились в комитет по местным делам с коллективным обращением по ряду обстоятельств, не подпадающих под действие норм служебной деятельности, продолжающихся с первых лет работы на железных дорогах. Они пишут, что несмотря на то, что на туркестанских дорогах были распределены должности кассиров, тарифников, служащих ведомства для прохождения практики, их отправили на товарную станцию, и уже 17 дней ничего не предпринималось. После этого практикующие разделились на различные сферы железных дорог: 4 из них были кондукторами, а затем в течение 20 дней обучали их задачам стрелочника, буксировщика, вагоностроителя, после сдачи экзаменов переводили на работу в товарные поезда. После 1 месяца работы в товарных поездах их перевели в товарно-пассажирские поезда. С 5 августа снова перевели в товарные поезда. Когда оперативники попросили объяснить эту ситуацию, их снова перевели на товарно-пассажирские поезда. Не удалось сделать это, когда они попросили перевести его на почту[4]. Практикантам, несмотря на свои просьбы, в практический период не дали ни одной задачи, кроме черной работы. Несколько раз они пытались ознакомиться с работой главного кондуктора, но именно под руководством главного кондуктора Куйдина, когда поезда двигались, они постоянно испытывали неприятное отношение. Когда оперативники прибыли на станцию и отправились знакомиться с работой, Куйдин всегда сопровождал их и говорил: «У тебя есть свои места». Аналогичное отношение проявили и другие железнодорожники. Несмотря на то, что часть практиков были выставлены на работу в товарном ведомстве, они также остались без работы. Так, обращение жалоб в Центральный Исполнительный Комитет Туркестана свидетельствует о том, что аппарат железных дорог с трудом реализует принципы учета и сближения трудовых потребностей местных жителей. За грузом приезжает узбек: обращаются к нему «ты», просят поставить подпись за прием груза, он говорит, что это может сделать только на узбекском, что они не допустят узбекской подписи, в результате чего он прямо просит узбекских уйгуров подписать для него на русском. В целом, несмотря на то, что он получал очень мало – 25 сумов в месяц заработной платы, практикующие честно работали и старались объединиться в единую семью железнодорожников[5]. Как следует из данных, отношение к национальным кадрам, недоверие и ведение делопроизводства на русском языке стало серьезным препятствием для обеспечения железнодорожного транспорта местными кадрами.

26 января 1924 года был издан приказ Ташкентского комиссариата путей сообщения СССР «О введении параллельного делопроизводства на местном языке и привлечении местного населения к транспорту». В



постановлении Всероссийского центрального исполнительного комитета от 1923 ноября 22 года и Совета Народных Комиссаров от 12 декабря ввести параллельное ведение работы на местном языке во всех государственных предприятиях и учреждениях, действующих на территории Туркестанской и Кыргызской Республик, в том числе на русском и узбекском языках в Туркестанской Республике, на русском и крымском языках в Кыргызской Республике [6].

С момента ликвидации Закаспийского фронта на Среднеазиатские железные дороги и вынесения Постановления ТурМИК 130, более тысячи местных жителей были трудоустроены на дороги в качестве рабочих и служащих. Для них открыты курсы по ликвидации безграмотности на 800 человек. В Полтавском техникуме действовали подготовительные курсы, в Ташкенте и Красном Равоте - курсы подготовки железнодорожников и паровых котлов. Из курсов по ликвидации неграмотности обучены 388 человек, стоимость обучения составила 11.038 сумов за месяц, 132.456 сумов за год. На тот момент на дорогах работало около 1750 местных жителей[7]. На совещании были отмечены трудности привлечения местного населения на дороги, такие проблемы, как дороговизна образования, неосведомленность русского языка в большинстве случаев, нехватка хотя бы общего среднего образования и отсутствие средств[8].

Еще одним важным аспектом вопроса стал религиозно-бытовой образ жизни местных жителей, в том числе нежелание отдаляться от села, где он проживает, а также низкая зарплата на транспорте. Необходимо было гарантировать, что выпускники курсов и школ не останутся без работы и, кроме того, не выйдут за пределы Средней Азии для работы на транспорте[9]. Кроме того, рассмотрены меры по обучению европейских рабочих и служащих языку местных жителей[10].

С 1925 года открыты 3-месячные или однолетние краткосрочные учебные курсы, целью которых является подготовка сотрудников от представителей местных жителей. Например, в 1926 году этой комиссией запланировано обучение 50 человек на курсы подготовки железнодорожников в г. Полторацке и 15 человек на подготовительные курсы Среднеазиатского агентства железных дорог, 112 человек на курсы подготовки железнодорожников высшей категории в г. Ташкенте[11].

В соответствии с резолюцией о ходе специального приема в ФЗУ и техникумы на 31 августа 1932 года по Ташкентскому ФЗУ выполнены планы на 80,4 процента, Туркестанской школе ФЗУ на 92,6 процента, Кызыл-Равотской школе ФЗУ на 7 процентов. Дневной прием на Ашхабадский учебный комбинат выполнен на 105 процентов, Самаркандский техникум - на 100 процентов, вечернее образование - на 53 процента, очное образование Ташкентского техникума - на 23 процента, вечернее - на 61,6 процента, вечернее - на 35 процентов. По всем школам ФЗУ сдано 3545 документов, принято 1433 человека. В дневные отделения всех техникумов подано 545 документов, принято 425 человек. В вечерние отделения сдали 420 человек, принято 150 человек[12]¹. Из числа принятых в школы ФЗУ было 63,6 процента, в техникумы - 7 процентов, в том числе в техникумы - 5,5 процента[13].

Центральный Комитет оценил неудовлетворительное состояние партийных, отраслевых и хозяйственных организаций по подготовке кадров национальных специалистов на территории Узбекистана. В 1932 году численность работников специалистов увеличилась на 1200 человек, а численность узбеков и местных меньшинств увеличилась на 251 человек[14]. При подготовке рабочих специалистов из числа местных национальностей, прослеживаются нарушения в следующих направлениях: машинист-775 - 39 человек, помощник машиниста - 1 из 18 человек, назначитель паровозных бригад (нарядчиков) - 2 из 16 человек, слесарь по ремонту паровозов и вагонов - 170 из 1696 человек, телеграфисты - 204 из них 9 - узбеки и представители местного населения. Учитывая вышеуказанные обстоятельства, Центральный комитет обязал все транспортные организации организовать курсы подготовки и переподготовки квалифицированных работников от представителей местных национальностей[15].

Учитывая, что только 27,3 процента студентов Среднеазиатского института инженеров транспорта составляют представители местных национальностей, Центральный Комитет попросил Среднеазиатское бюро принять меры по увеличению приема местных студентов с 1932-1933 учебного года[16].

¹ Национальный архив Узбекистана, фонд Р-2547, опись 1, дело 7, лист 136.



Как и в других национальных республиках, в Узбекистане проблема подготовки кадров была реализована в соответствии с указаниями и планами, установленными Коммунистической партией и Советским государством. Кроме того, дефицит материальных и финансовых ресурсов, нехватка зданий, педагогических кадров, необходимых учебников показали отрицательный результат. В первые годы советской власти потребность республики в массовых кадрах удовлетворялась, с одной стороны, путем отправки рабочих и технических работников из центральных районов страны, а с другой - подготовкой местных кадров на различных курсах.

Список использованной литературы

1. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 35, лист 1.
2. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 35, лист 11.
3. Национальный архив Узбекистана, фонд P-2547, опись 1, дело 7, лист 75.
4. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 7, лист 63.
5. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 7, лист 64.
6. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 7, лист 72.
7. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 7, лист 36.
8. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 7, лист 37.
9. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 7, лист 38.
10. Национальный архив Узбекистана, фонд P-1621, опись 2, дело 7, лист 39.
11. Национальный архив Узбекистана, фонд P-86, опись 1, дело 3646, лист 46.
12. Национальный архив Узбекистана, фонд P-2547, опись 1, дело 7, лист 136.
13. Национальный архив Узбекистана, фонд P-2547, опись 1, дело 7, лист 137.
14. Национальный архив Узбекистана, фонд P-95, опись 2, дело 1316, лист 2.
15. Национальный архив Узбекистана, фонд P-95, опись 2, дело 1316, лист 3.
16. Национальный архив Узбекистана, фонд P-95, опись 2, дело 1316, лист 5.



REVIEW OF THE WORKS OF PERSIAN AND TAJIK WRITERS IN EUROPE

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ANNOTATION

Persian and Tajik writers' works have been researched and translated for a long time, and literary critics and translators played a big part in this good deed. Thanks to the work of translators, our rich literature's treasured heritage was gradually presented to European readers. The "Shahnameh" by Abul-Qasim Firdavsi is one of the most prominent works, which is very popular in Europe and has been translated multiple times into English, German, Italian, and other European languages by the efforts of translators.

KEY WORDS: *East, West, poetry, prose, Persian-Tajik, literature, research European languages, .*

The history of research and translation of the works of Persian and Tajik writers has a long history, and literary critics and translators played an important role in this good deed, and thanks to the work of translators, the valuable heritage of our rich literature was gradually offered to European readers. One of the most popular works, which is very popular in Europe and has been translated into English, German, Italian and other European languages several times by the efforts of translators, is the "Shahnameh" by Abul-Qasim Firdavsi.

Researcher Shakir Mukhtor expressed his opinion in detail on the French translation of Firdousi's "Shahnameh" in the book "Firdousi and France" and provides interesting information about the first translators of this masterpiece. According to him, the first translator and researcher of Firdousi in France was Louis Langle, and according to Professor S. Mukhtor, "Langle's translations were literal (literal) translations". Sh. Mukhtor also tried to compare the original text with the translation and show their closeness. The researcher draws interesting conclusions in this regard and emphasizes that Langle tried to "preserve the originality of the poet's poems (i.e. Firdousi)...", therefore, when translating, he demonstrates all the nuances and stylistic beauties of the work in the language of translation. The researcher also highly appreciates the works of orientalist S.R. Valenburg and A.S. Jourdon and emphasizes that they are propagandists of literature and culture of the Tajik people.

It can be seen from the arguments of the French language scholar that the study of Firdousi's "Shahnameh" in France began with the translation of Jules Mole (1800-1886), and the rest of the translators are considered to be the continuators of the work of this translator. The acquaintance of the peoples of England and other countries with the works of Tajik writers begins in the Middle Ages. The first person to present Firdousi's Shahnameh in England was Professor William Jones, who described parts of the Shahnameh in the form of short and small patriotic and defensive stories.

However, according to other sources, "Firdousi's name was first mentioned in the report of the English traveler John Freyer (1698) about his journey to Persia (modern Iran), who considered Shahnameh a chivalrous novel about Iranian heroes"

Rudaki's fame as the "leader of the poets of the world" came to Europe much later. Although studies of his work began in this part of the world from the beginning of the nineteenth century, the collection of his surviving works dates back to the 70s of the last century, and a significant contribution to this honorable work was made by the famous German orientalist Hermann Ete. He collected the remaining fragments of Rudaki's poems from various sources (238 beits in total), translated them into German and published them together with his article "Rudaki - the poet of the Samanids" in 1873. And this good deed allowed the name of Rudaki and the fame of his poem to spread throughout Europe, Russia and even the East. In addition, other sources point to the long-standing fame of Rudaki's work in many countries.

If the American orientalist Jackson Williams compared Rudaki to a bright star that was the "discoverer of the dawn", then this is undoubtedly a sign of Rudaki's fame in the West. The East also, using the example of dozens of domestic and foreign researchers, later highly appreciated the work of this poet of the centuries. This is evidenced by Rudaki's own poems "from the events of that time", which have reached the whole world. This conclusion was reached by the famous orientalist I.S. Braginsky, having studied Rudaki's work through the prism of comparative literary studies (the last work of the researcher on Rudaki's work was published in Moscow in 1989 under the name "Rudaki") and from this point of view, the works of Rudaki and Pushkin reveal most scientific and educational problems.

French orientalist J. Darmstetter translated the poems "Complaint of Old Age" and "The Smell of the Mulian River" into French and included them in his book "The Phenomenon



of Persian Poetry". The poem was re-translated and published in French by the famous French orientalist Henri Mass (1876-1969) in 1950 and in 1964 by Henri Masset, Gilbert Lazarus and Lescaut. In addition, the poem "The Smell of the Muliyan River" and the question of its translation into Armenian, and the dialects of the translation of this poem were studied separately by poets of different periods.

Another creator in Persian was Khayyam Nishapuri, known in the West and East as a Tajik poet and scientist. His rubaiyat were not only published all over the world, but were also the reason for various poets to become his follower. In England, for example, Khayyam was known long before the appearance of E.J. Fitzgerald's translations. The name of Khayyam as the creator of the rubai was mentioned by Thomas Hyde in 1700 in his book "The History of the Religion of the Ancient Persians". Thanks to the work of another English scientist Meyerman, the inhabitants of this country recognized the mathematician Khayyam as early as 1772. E. Fitzgerald not only translated Khayyam's stories into English with great skill and attention (1859), but also became so interested in Khayyam that under his influence, he wrote a poem called "Rubaiyat Umar Khayyam", which brought him world fame. Iranian critic Masoud Farzod researched this poem and wrote that "this poem consists of 101 passages, each in its form resembles a Persian rubai, and the translation made by English, Following this translation, Khayyam's fame spread throughout Europe, and his works were translated into other languages and were on the lips. It should be noted that this prestige has not decreased today, but is growing quantitatively and qualitatively. According to the research conducted by Tajik scientist U. Nazir and published in the form of three separate books and dozens of articles on the occasion of the 960th anniversary of the birth of scientist Umar Khayyam, over the past three centuries of the second millennium 115 poets from Europe have addressed rubai Khayyam, translated and published them in English, Russian, German, Italian, French, Polish, Spanish, Czech, Hungarian, Portuguese and other languages. Only in Europe and especially in Russia over these centuries, more than 3,000 articles and essays have been published, which are full of expressions of love for Khayyam and his rubai.

The sincerity of the peoples of the world towards Khayyam's rubai, as they have repeatedly said and written, begins with the fact that the content of his rubai has always been the same as that of their contemporaries. Truly lively melodies of rubai Khayyam resonate in the hearts and express the problems of different peoples, and their children have learned courage and wisdom from Khayyam. The editor-in-chief of the French magazine "Anahit" (in Armenian) Arshak Chopanyan recalls the popularity of Khayyam's work and in one of his articles "The East and Armenian Thought" describes the French literary environment of the late XIX and early XX centuries, which was especially in need of Khayyam's poetry and philosophy. The appeal of the people and society to Khayyam's poetry and Tajik literature took place in a complex historical and cultural context, incomparable at this level.

Thus, the eternal works of the classics of Persian and Tajik literature, such as Rudaki, Firdousi, Khayyam, Nosiri Khusrav, Saadi, Hafiz, Jaloliddini Balkhi, Jomi and dozens of others for centuries, have given spiritual food to the peoples of the world, especially European peoples, and with their supreme

words have added real treasures to the treasury of universal culture.

Classical poetry in the Persian-Tajik language has a huge influence in world culture, the ideas of humanism and justice were preached in it, tyranny was condemned. In poetry, prose and other philosophical works of the East, ancient folk traditions and heroic motifs, images of heroes and just kings, revised in the light of the ideology of Islam, were sung and transmitted. It is necessary to note one very important tradition in the palaces of the shahs in the East. Since ancient times, the shahs and sultans had a group of court poets at their court and even competed for the opportunity to have the best and most talented poets at home, not only because they were fans of poetry, but the fact was that the verse of a famous poet would immediately leak outside the palace and be made public, and he was a source of ideological the life and struggles of that era. The poems of popular poets were mostly transmitted orally, but sometimes recorded.

Persian-Tajik literature has won the hearts of readers in Europe, Africa and America. The names of outstanding poets of Persian-Tajik literature – Rudaki, Firdousi, Khayyam, Saadi, Hafiz and others are known all over the world, whose work has become a source of inspiration for the work of Russian and Western European poets. The Asian theme, being either the external environment of biography or an internal need, often brought by personal fate, is reflected to varying degrees in the works of Russian classics from Derzhavin to Blok. For many of them (Radishchev, Griboyedov, Pushkin, Lermontov, Goncharov, Chernyshevsky, Tolstoy, Dostoevsky, Chekhov, Gorky, Mayakovsky, Yesenin, etc.) Asia has become one of the main conditions for their creative and social activities. The St. Petersburg and Moscow scientific centers studied the historical, economic and social development of European countries. In the research of scientists, the historical background of this phenomenon is considered and highlighted. The research and study of the poetry of great Persian-Tajik poets such as Firdousi, Khayyam, Saadi, Hafiz and others are laid down in the scientific works of Russian orientalists E.E. Bertels, I.S. Braginsky, L. Grossman, A.N. Veselevsky and other scientists. In Russia, the study and familiarization with the East began in the era of Peter I and currently there are universities in Moscow, St. Petersburg and Kazan - Centers of scientific Oriental Studies. Translations of poems and ghazals by Persian-Tajik poets and choosing oriental themes in their work became an organic part of Russian poetry at that time. Pushkin, Fet and Yesenin have such variations. The mutual enrichment of cultures is based on the convergence of the economic way of life and the spiritual disposition of people of different nationalities, and this requires "a broad deployment of the initiative and creativity of the masses, their most active involvement in solving key problems in public life"

The influence of Persian-Tajik classical literature on romantic poetry of the early XIX century can be seen in many works of Russian poets, which are composed based on its motives. Magnificent oriental themes are reflected in the poems of A. S. Pushkin ("The Tale of Tsar Saltan...", "The Fountain of Bakhchisarai"), Ivan Bunin ("The Testament of Saadi", "Roses of Shiraz", "To the East", "Wise", "The Shadow of a Bird"), S. Yesenin ("Persian Motifs", "You said Saadi...", "The Blue homeland of Firdousi"), M. Kuzmin ("Friends of Hafiz", "Why the Moon" and "I can't sleep", etc.), Vyacheslav Ivanov



("Hafiz's Tent" and "Meeting guests"), N. Gumilev ("Pillar of Fire", "Imitation of Persian", "Persian Miniature" and "Drunken Dervish") and many others. During this period, many of Yesenin's contemporaries also focused on the theme of the East.

Russian literature attracted attention in the second half of the XVIII century. It was aesthetically new for Russian writers and the Russian readership. In the first half of the XIX century, Oriental studies were rapidly developing in Russia and a new stage of establishing and strengthening both internal and external political, economic, and cultural relations, especially with the countries of the East, was beginning in Russian-Eastern relations. Of course, it is impossible not to recognize the vastness and multidimensional nature of the "West-Russia-East" problem, which has long been posed in works of a very different nature. In them, it often acquired diametrically opposite interpretations: "new" Europe - "old" East, "active" West - "dreamy-contemplative" East, "rotting" West - "sleeping" East.

Nevertheless, there is still no research that analyzes the style of Russian romantic poetry of the early XIX century as a single, holistic aesthetic system; there are also no scientific papers devoted to the special characteristics of the style of Iranian-Tajik and Turkic-speaking classical poetry. The problem of "East-West" has been worrying scientists for a long time; at the same time, it turned out that the concepts of "East" and "West" contain many different meanings - both economic, geographical, spiritual, cultural, and artistic.

With the development of national self-consciousness in Russia of the XIX century, the need for awareness of one's country, oneself, and understanding of one's own self through the refraction of various trends and traditions was keenly felt" [Kogan, Hiltukhina, 1994, 8]. Already in the XIX century, oriental motifs confidently entered Russian literature with the poetry of M. Lermontov and Ya. Polonsky. Quite a lot of soulful lines were dedicated to the East by I. Bunin, a Russian writer, poet and translator, Winner of the Nobel Prize in 1933, author of the poems "3aveta Saadi" and "Roses of Shiraz" at the beginning of the XX century.

In the works of the classics of Russian literature, the use of oriental images, including Persian-Tajik literature, has its own special history. This period can be divided into several stages: 1) pre-revolutionary period; 2) Soviet literary studies (especially the 50-80s); 3) the post-Soviet period until 2006; 4) the period of postcolonial studies of the 2010s.

Each of these stages has its own characteristic features in relation to the East, a certain terminology and methods that allow or deny the goal of achieving other fields of science. Agreeing with the views of such orientalist researchers as G.A. Gukovsky, D.S. Likhachev, Y.M. Lotman, V.N. Toporov, A. Zorin, etc., it should be added to the above that Russian Oriental studies or orientalism has not yet been fully studied as the most important national scientific discourse of the early XIX century, its consistency has not been investigated and its considered resources have been determined to the end.

However, scientists and researchers of the XIX-XX centuries have done a lot of work in studying and considering this problem, especially in matters that relate to the relationship between Russian and Eastern culture and literature, problems of literary translation in the context of the exchange of spiritual and aesthetic experience between peoples. In this area, the scientific works of such scientists as D.D. Blagogo, M.P.

Alekseev, N.V. Izmailova, Yu.D. Levin, M.S. Lobikova should also be mentioned.

A huge contribution to the theory of comparative historical research of literature was made by V.M. Zhirmunsky, a Russian Soviet linguist and literary critic, in the development of the scientific methodology of this field of science, his works played an important and decisive role. "Comparison," V.M. Zhirmunsky argued, "should serve as a technique for establishing the regularity of literary phenomena corresponding to certain stages of social development."

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