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CONSUMER BUYING BEHAVIOUR TOWARDS GOLD JEWELLERY (WITH SPECIAL REFERENCE TO COIMBATORE CITY)

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ABSTRACT

The importance of this study is to examine the consumer level of buying behaviour towards Gold Jewellery in Coimbatore city. The data has been collected by survey methods through questionnaire with 120 respondents. Tools used in this project were simple percentage analysis and likert scale analysis. On the basis of the study, it is found that customers are willing to buy gold Ornaments. Most of the consumers are interested in Gold Loan. The only thing the consumer expects is its discount on schemes. These are some findings of the study. Thus, the study concluded that consumers are satisfied with the buying behaviour of Gold Jewellery.

KEY WORDS: *Buying Behaviour, Consumers, Gold Jewellery, Discount.*

INTRODUCTION

The Gold market in India is predominantly a market for buying and selling physical gold and gold in the form of ornaments. It is considered as a symbol. In the current economic trend the consumption is curbed by raising the import duty and prohibiting the import of gold coins and medallions, because of the drastic demand for gold in the country. Marketing, though, has also led to more awareness about purity of the metal, the importance of hallmarking and guarantee of quality among others in consumers. The digital media has changed how public experience brands and put together their perceptions. Customers in India are becoming extra aware and quality conscious. Even in present times, Jeweller remains the India bride 'Streedha' the wealth she takes with her which she marry and which remains hers.

While buying the jewellery product seeking for service. It depends on the advertisement and displaying magnesium. Consumer behaviour is concerned with what they buy it, when, from where and own they buy it and how often they buy it. Taking into account the inevitable position of gold industry in our nations 'economy and culture. In few years consumer's buying behaviour of gold jewellery increased.

Jewellers are very popular among farmers, with an upsurge in gold sales after a good agricultural

season. Various benefits to health and well-being were ascribed to jewellery. There were numerous beliefs concerning the efforts of specific types of jewellery on the health, and it was used to guard against specific diseases such as a smallpox. It is valued in India as a savings and investment vehicle and is the second preferred investment option after deposits and mutual funds. Its consumption is much higher in India than in other countries.

There are a vast number of goods available for purchase, but consumers tend to attribute this volume to the industrial world's massive production capacity. Marketing profession is responsible for the variety of goods on the markets. The skill of evaluating and influencing consumer behaviour is foremost in determining which marketing efforts will be used and when. Nowadays jewellery industry is one of the fastest emergent and foreign exchange earner industry in the Indian economy. Jewellery has been used by the Indian for both its aesthetic as well as investment purposes.

Purchase of jewellery is largely based on trust exhibited by customers. As a result, households make purchases from their "family jewellers". According to CRISIL Research, there are over 300,000 jewellery retail outlets across the country, majority being single store, family-owned business. Unlike any other metal this shiny yellow metal creates strong emotional attachments in people. An



increase in the working population with higher income, resulting augmented living standards. Customers might very much be caught up when the product is expensive, purchased occasionally and extremely self-expressive. It is a learning process for the buyers to develop the belief about the product, attitude and making an attentive buying choice.

The Indian Marketers should have high involvement in information gathering and evaluation behaviour of the consumer; they need to facilitate buyers find out about the product- class attributes and their significance even in the rural areas providing enhanced growth projection and demand for the gold jewellery. Hence, this study deals with the buying behaviour of jewellery buyers in Coimbatore City.

REVIWE OF LITERATURE

S. Praveenkumar, (2019) in their research “In India, gold is promoted largely for purchasing and selling physically or in the type of ornaments. It is appreciated as a savings and investment which is a proffered investment in India. Consumer awareness refers to how consumer’s analysis a certain product on their own conclusion. Business depends on how it attracts and retain the customers who willing to procure goods at the cost that are profitable to the business. The objectives of the study is to understand the buying behaviour of customers towards gold jewellery in Madurai district. Therefore, it is important to study they unusual purchasing behaviour of the people and accept the changes as per the current fashionable people’s requirements. Hence, the researcher has undertaken this study to understand the buying behaviour of consumers towards gold jewellery in Madurai district, TamilNadu.

Dr.C.Palanichamy, (2019) in their paper the gold market in India is predominantly a market for buying and selling physical gold and gold in the form of ornaments. The Gold in India serves many functions and wearing it, has several implications. It is considered as a status symbol. India is considered to be the fastest growing market in the world for gold jewellery. It is valued in India as savings and investment vehicle and is the second preferred investment option after deposit and mutual funds. Hence, this study deals with the purchase behaviour of jewellery buyers in Erode city. The results of the study reveal that, consumers have purchased gold jewellery for the purpose of investment. Design has been considered as an important factor influencing the consumers purchase decision followed by purity.

STATEMENT OF THE PROBLEM

Gold is very cherished and valued commodity. Jewellery isn't just for the aim of admiration but also as security in times of emergency

on often expensive and may be sold on every occasion there's want in need of cash. Even in jewellery products branding exists. The income level of buyers has important contact on the sort of jewellery purchased by them. The market was witnessing an accelerated change from screening jewellery as a saving to regarding it as aesthetically tempting ornaments. The focus has shifted from substance to style. A couple of the businesses have even smartly played on India traditions to market and make their brands. The present age bracket was looking the fashionable up so far jewellery and avoiding traditional a gold Jewells. Therefore, it's important to review the us usual purchasing behaviour of the people and accept the changes as per the present fashionable people’s requirement.

OBJECTIVES OF THE STUDY

- To analyze the social economic status of the respondents.
- To know the consumer buying behavior towards gold jewellery.
- To reveal the various factors influencing the purchase gold jewellery.

RESEARCH METHODOLOGY

Research design is considered as a “Blueprint” for research, dealing with research problems: which questions are asked to study, which data are relevant what data to collect and how to analyse the results.

Sampling Technique

Convenience sampling technique was used for collecting the data from the respondents.

Sampling Size

The study is restricted to 120 respondents.

Primary Data

In primary data were collected by using method of questionnaires.

Secondary Data

Secondary data we collected from books, magazines, journals, and from various websites.

Statistical Tools Used

- Simple percentage analysis.
- Likert scale analysis.

LIMITATION OF STUDY

- The study does not cover the technical aspects of the jewellery. The scope of the study is limited to the current trend in jewellery sales and conducted during the current year only.



- The findings of the study are based on the facts and figures available with the respondents.
- The study is purely based on the views of 120 respondents only and hence the results may not be universally applicable.
- The conclusions drawn from the study are applicable only to the area studied. Any other similar situation and wide generalization or other dissimilar areas are not desirable.

FINDINGS

Simple Percentage Analysis

- Majority (58%) of the respondents are belongs to female.
- Majority (51%) of the respondents are belongs to the age group of 21-30 years.
- Majority (77%) of the respondents are Unmarried.
- Majority (63%) of the respondents are belongs to Graduate.
- Majority (55%) of the respondents are belongs to Student.
- Majority (67.5%) of the respondents have monthly income level of Up to Rs.25,000.
- Majority (47%) of the respondents are under 3 members.
- Majority (55%) of the respondents are 2 members, earning in their family.
- Majority (45%) of the respondents are prefer to buy Gold jewellery "Sometimes"
- Majority (67%) of the respondents are preferring to buy in the form of Ornament
- Majority (50%) of the respondents are would like to buy When Required
- Majority (30%) of the respondents are Buying the Gold based on Designs.
- Majority (90%) of the respondent's female plays a major role on buying Gold Jewellery.
- Majority (86%) of the respondents are using 24 Karat.
- Majority (28%) of the respondents spend Rs.25, 001-Rs.50, 000 in Year.
- Majority (70%) of the respondents not buy the gold jewellery even when there is rise in price.
- Majority (47.5%) of the respondents are Prefer to buy Gold Jewellery in Popular Shops
- Majority (55%) of the respondents are not interested in Gold Investment.
- Majority (44%) of the respondents are rarely compare the design and Price of Gold Jewellery.
- Majority (33%) of the respondents are buying Gold for Future Savings.
- Majority (77%) of the respondents said yes on Gold helps to get us loan

- Majority (57%) of the respondents are belongs to Urban Area interested in purchase of Gold Jewellery.

Likert Scale Analysis

- The likert scale value is 3.84 which is great than the mid-value (3) which shows that the consumers are satisfied with the buying Gold Jewellery.
- The likert scale value is 3.84 which is great than the mid-value (3) which shows that the consumers are satisfied with the buying Gold Jewellery.

SUGGESTIONS

- Introducing more attractive cash discount schemes to the customer may change enhance the sale.
- Gold jewellery has resale cost and this makes great benefit and asset for the buyer.
- Most of the respondents look forwarded to good customer's service from the jewellery shops.
- Introducing more sales promotion measures depending upon changing taste preference of customers.
- More concentration can be give towards the quality of gold, offers, and discount to attract more consumers towards them.

CONCLUSION

The present study was conducted on the consumer purchasing behaviour towards Gold Jewellery Coimbatore City. Today the market is consumer oriented and the importance is given to the consumers. The preference of consumer is continuously shifted according to the needs, desires, choices and fashion etc. In jewellery purchasing the consumer have more expectations. Hence the jewellery should improve the quality, designs, wastage and making charges, and customer service. Nowadays, the jewellery products is facing an uptrend on these days, so the jewellery should take aspects into consideration and keep up its values of trust, authenticity, credibility, objectivity of the respondents and serve them in a better manner. Purchasing of Gold Jewellery holds a very imperative value in several cultures since it is a symbol of achievement, power and wealth. Based on the above, customer approach and behaviour on jewellery purchase in Coimbatore City have played a significant role.



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A STUDY ON CUSTOMER SATISFACTION TOWARDS RETAIL BANKING SERVICES WITH SPECIAL REFERENCE TO KARUR VYSYA BANK IN COIMBATORE CITY

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ABSTRACT

Economic prosperity has changed consumer demographics and technological factor have made consumer demand for better quality and efficient service. The service industry is becoming major contributor to the economy of many countries which were earlier dependent on the manufacturing sector. Service industry particularly the banking sector is not left behind in the competition. Banking industry has been highly commoditized.

This empirical study assesses the current status of retail banking in service sector with special references to Banking Sector. The study focuses on service quality parameters and customer satisfaction. On the bases of an empirical study which was conducted in Coimbatore city, the study conclude that all the service quality parameters play a vital role in customer satisfaction.

KEYWORDS: Retail Banking, Service Quality, Customer Satisfaction.

1. INTRODUCTION

Retail Banking refers to provision of banking products and services offered to individual customers, typically for non-entrepreneurial purposes. On the liability side, banking has invariably always been 'retail' i.e., the banks have raised resources from an outsized number of retail depositors. therein sense once we mention retail banking, our focus is on the asset side i.e., lending to the retail segment. Thus, on the entire, retail banking involves offering of products each side of the record e.g., Fixed, current / savings accounts on the liability side; and mortgages, loans (e.g., personal, housing, auto, and educational) on the asset side.

2. STATEMENT OF THE PROBLEM

The retail banking environment today is fast changing. The changing customer's demand creates a differentiated application based on technology which improves retail banking service. The advancement of technology and increase in global literacy levels has set up the customer's expectations higher than ever before. Therefore, this present study is made to know "The Customer satisfaction towards Retail Banking Services provided by Karur Vysya Bank in the Coimbatore City."

3. OBJECTIVE OF THE STUDY

- To know the purpose of using retail services in bank
- To identify the factors influencing the customer to the retail services
- To study the level of satisfaction of customers in relate to retail services



4. RESEARCH METHODOLOGY

Source of Data	Secondary data
Period of Study	2015-2016 to 2019-2020
Framework of analysis	Convenience Sampling Technique
Tools and techniques	Percentage analysis, Ranking analysis

5. STATISTICAL TOOLS

- Percentage analysis
- Ranking analysis

6. REVIEW OF LITERATURE

D. Srinivas and Prof. N. Hanumantha Rao (2018)¹, Examined that the dissatisfied customers find responsiveness and empathy dimension as the twin concept that is lacked by the banks. So far as the satisfied customers are concerned, there exist a long gap between the expected service quality and actual service quality. The suggestion of the customers is that the bank should generate a strong confidence among the customers.

Dr. Gayatri Chopra (2017)², Explained that the various procedures of banks should be transparent and accurate in order to retain the old ones and attract the new customers. It is crystal clear from the study that

the current customers are delighted by the tangibles and assurance provided by the bank. Therefore, it is necessary that bank employees should pay high attention to their other variables of the delight to make them more delight.

Mrs. M. Esther krupa and Major Dr. D. Rajasekaran³ “A study on customer awareness towards e banking services in Coimbatore city” (2015). Today banks had a operate in a highly globalized, liberalized, privatized and a competitive environment. Its main objective is to identify the customer level of awareness towards banking services. Banking present study is a modest attempt to know about customer awareness regarding banking services provided by banks in Coimbatore. All the respondents are not aware of all the forms of banking services. All banks should make their customers aware of educate them regarding the various banking services provided by the bank.

7. TABLE

S.No	Bank	Number Of Respondents	Percentage (%)
1	HDFC bank	8	6.7
2	ICICI bank	16	13.4
3	Karur Vysya bank	68	57.1
4	State Bank of India	14	11.8
5	Canara bank	13	10.9
	Total	120	100

PERCENTAGE ANALYSIS

- 60% of the respondents are male,
- 58.3% of the respondents were 18 to 27 years,
- 62.5% of the respondents are Singel,
- 41.7% of the respondents are agriculture,
- 55% of the respondents are Graduate,
- 59.2% of the respondents are up to 1,00,000,
- 57.1% of the respondents are account in Karur Vysya bank,
- 45% of the respondents are using their bank account up to 2 years,
- 72.5% of the respondents are using savings account,
- 72.5% of the respondents are using savings account,
- 70% of the respondents are use retail service,

- 38.3% of the respondents are using ATM service,
- 75.3% of the respondents are do not avail loan,
- 89.2% of the respondents are do not face any problem,
- 89.2% of the respondents of this study are satisfied,
- 36% of the respondents of this study are felling Good,
- 34% of the respondents of this study are felling Average.

RANK ANALYSIS

- It concludes that Respondents are satisfied with the quality of service.



8. SUGGESTIONS

- Karur Vysya Bank should concentrate on the interest rates fixed for Recurring deposit account to influence the customers.
- Karur Vysya Bank should give more importance to vehicle loan and jewel loan.
- Karur Vysya Bank staffs should be given proper guidelines to provide timely response to the customers.
- Karur Vysya Bank should try to increase the Quality of service to make the customers satisfied.

9. CONCLUSION

Based on the study conducted it are often concluded that responsiveness, assurance and reliability are the critical dimensions of service quality of Karur Vysya Bank and that they are directly associated with overall service quality. The factors which will delight customers tend to worry more with the intangible nature of the service, commitment, attentiveness, friendliness, care and courtesy. The management should understand the advantages of service quality. It includes increased customer satisfaction, improved customer retention, positive word of mouth, reduced staff turnover, decreased operating costs, enlarged market share, increased profitability, and improved financial performance.

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PERFORMANCE MANAGEMENT SYSTEM AND BEST PRACTICES OF SELECTED PERFORMING PUBLIC ELEMENTARY CENTRAL SCHOOLS IN THE PROVINCE OF LAGUNA: ITS RELATION TO QUALITY EDUCATION

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ABSTRACT

The primary aim of the study is to determine the relationship between the performance management system and best practices of elementary high-performing schools in the Division of Laguna to quality education. The researcher used the descriptive survey research method. This method refers to the collection of data from members of the population in which direct contact is made utilizing survey questionnaires and checklist both in hard copy and in the google form. The sample of this study comprised of two hundred forty-three (243) randomly selected teachers from selected performing public elementary central schools in the Province of Laguna to gather needed information to answer the research problem. Weighted Mean and Standard Deviation were utilized as the statistical treatment to find out the level of the performance-based management system and the best practices. To determine the relationship between the performance-based management system and best practices to quality education., Pearson R was used. With the gathered data, the null hypothesis stating that “There is no significant relationship between the performance management system and best practices on the quality of education provided by selected performing public elementary central schools in the Province of Laguna”, is partially rejected.

INDEX TERMS— *Best Practices, Performance Management System, Quality Education, Public Elementary Schools*

1. INTRODUCTION

Education, a process of strengthening individuals, organizations, and communities lead to empowerment. As such, quality in educational institutions should be delivered to learners to be considered successful.

With this, performance management system which is a process for setting up a shared understanding of what is to be achieved at an organizational level should be applied and implemented. In addition, to achieve quality education, involvement and alignment of organizational objectives with the teachers' skills, competency requirements, development plans, and the delivery of results must be considered. As such, it can be agreed that the focus of performance management system in any educational institution is to improve performance through learning and development to achieve the overall educational strategy of the organization. Hence, the performance management system ensures and maintains the proper flow of every section and unit of any educational institution.

Thus, it is a strategic and integrated approach to deliver sustained success to schools by improving the performance of the employees by developing the capabilities and increasing their contributions (Armstrong and Baron, 2015).

In addition to performance management system, to achieve quality education, best practices are considered vital for positive changes in students' attitudes or academic behavior. Schools' best practices support the students' needs, help them become effective and empowered learners. These are various

programs that offer all students a rich educational experience to support academic and social/emotional learning. (Charchar, 2020).

In line with the above discussion, it can be implied that in order to promote and provide quality education to learners, performance management system is needed to address all the factors concerning the development, monitoring and evaluation of work efficiency of instructional leaders and other members of the educational institutions. On the other hand, the best practices including various programs and policies which ensure that learners, educational leaders, teachers and parents share and commit to articulate and understand common goals to achieve positive results must be practiced and implemented (Arendale, 2017).

With this, the researcher believes that quality education can be achieved with the implementation of a performance management system and the best practices in any educational institution, especially in the Department of Education. Thus, the researcher sought to find out the relationship between the extent of implementation of the performance management system and best practices of selected performing elementary central schools in the province of Laguna to wad the achievement of quality education.



2 OBJECTIVES

The primary aim of the study is to determine the relationship between the performance management system and best practices of selected performing public elementary central schools in the Province of Laguna to quality education. Specifically, it sought answers to:

1. The mean level of the performance management system of selected performing public elementary central schools in the Province of Laguna in terms of Planning, Monitoring, Development, Performance Rating and Rewards.
2. The mean level of best practices of selected performing public elementary central schools in the Province of Laguna as to community involvement and linkages, adopt-a-school-program, production of self-directed learners, effective classroom management, research, school-based feeding program, reading program, and health inspection program.
3. The mean level of quality education of selected performing public elementary central schools in the Province of Laguna with regards to learner characteristics, teaching-learning process, educational content, learning environment, school management, and funding and organization.
4. Significant effect of performance management system and best practices to quality education of selected performing public elementary central schools in the Province of Laguna.

3. METHODOLOGY

The researcher utilized the descriptive survey method to determine the level of awareness, acceptance, dissemination and congruency of the study. The respondents of the study comprised of two hundred forty-three (243) randomly selected teachers from selected performing public elementary central schools in the province of Laguna to gather the needed information and to answer the research problem.

The researcher sought permission from the superintendent of the respective division in the Province of Laguna, respective public schools district supervisors (PSDS), and selected public elementary central school heads respectively were included in the study.

Upon approval, a meeting was set to meet the respondents before the actual administration of the questionnaire to orient them relative to the purpose of the study. With regards to statistical treatment used, mean, standard deviation and Pearson-R correlation were used.

4. LITERATURE REVIEW

Rashid believes that education leads to empowerment, a process of strengthening individuals, organizations, and communities so they get more control over their situations and environments [1]. Quality education is a crucial factor in combating poverty and inequality in society. Good quality education will provide all learners with the capabilities they require to become economically productive, develop sustainable livelihoods, contribute to peaceful and democratic societies and enhance individual well-being.

Education is the means of acquiring knowledge through various learning, teaching, and studying processes. The quality of

education is the right impact in which the knowledge one has acquired is put to use accurately. It is also of great importance for a student to be taught effectively and efficiently for them to retain what they have studied [2].

Getting access to quality education will help the students to have more knowledge and understanding of their course of study in school. It will help to boost their morale to learn and study; this will improve their performance in class. Teachers must ensure they train, guide, and impact positively right education which will improve their skills, ability, and capability to learn. It is of great importance to providing quality education that will help to boost the morale of students to learn. All educators must also ensure they provide a conducive environment for students to learn [3]

Learner characteristics are used in the sciences of learning and cognition to designate a target group of learners and define those aspects of their personal, academic, social, or cognitive self that may influence how and what they learn. They are important for instructional designers as they allow them to design and create tailored instructions for a target group. It is expected that by taking account of the characteristics of learners, more efficient, effective, and/or motivating instructional materials can be designed and developed.

The huge changes concerning the workplace demand new perspectives for education, continuous education, and lifelong learning. New methods demand new organization alternatives that, in turn, require new educational policies and put pressure on current assumptions of education itself.

A set of seven dimensions for a distance learning environment were identified, which positively impacts the setting of learning experiences: (1) access tools; (2) technology experience; (3) habits and study skills; (4) human factors and lifestyle; (5) goals and guidelines; (6) learning preferences; (7) personal characteristics [4].

Doyle, defends that the learners, when asked about their characteristics, taking into account different issues of their familiar, personal and professional life, available technology resources, technology skills, as well as motivation and learning preferences, provide an information set that, if turn available to facilitators, allow to both players (learners and facilitators) the mechanisms that ease the adoption of learning strategies, that enhance the possibility of a well succeed learning experience [5].

Learner characteristics can be personal, academic, social/emotional, and/or cognitive [6]. Personal characteristics often relate to demographic information such as age, gender, maturation, language, social-economic status, cultural background, and specific needs of a learner group such as particular skills and disabilities for and/or impairments to learning.

Schools are the second place after home where students' behavior and future educational success are shaped. At schools, many elements or factors can influence the teaching and learning process that may take place. Rasyid stated that four perennial truths make the teaching and learning process possible to take place in the classroom. If one of these is not available, there will be no teaching and learning process, though the learning process



itself may still take place, they are (1) Teacher, (2) Students, (3) Material, and (4) Context of time and place [7].

All of the readings cited are related to one another. But, among all the above factors, the teacher has the most important role for efficient and quality learning.

5. DISCUSSION

Table 1 shows the level of awareness in the LSPU vision, and mission, college goal and program objectives of the Bachelor of Science in Entrepreneurship among the five groups of respondents.

Table 1. Level of Performance Management System of Selected Performing Public Elementary Schools in the Province of Laguna in terms of Planning.

Statement	Mean	SD	VI
The school management conducts planning and frequent performance discussions for management plans.	4.40	0.83	Very Great Extent
The school management conducts collaborative planning involving regular conversations and continuous feedback from the members of the organization.	4.63	0.61	Very Great Extent
The school management regularly plans and re-address the objectives and barriers to effective school performance.	4.57	0.66	Very Great Extent
The school management system plans and focuses on employee development	4.42	0.77	Very Great Extent
The school management conducts planning and frequent performance discussions for management plans.	4.46	0.74	Very Great Extent
Overall Mean = 4.50			
Standard Deviation = 0.732			
Verbal Interpretation = Very Great Extent			

Table 1 revealed the level of performance management system of selected performing public elementary central schools in the Province of Laguna in terms of Planning. Based on the teachers' perception the selected performing elementary central schools in terms of planning is at a very great extent.

The school management conducts planning and frequent performance discussions for management plans with the rating of (M=4.40, SD=0.83). The school management conducts collaborative planning involving regular conversations and continuous feedback from the members of the organization with (M=4.63, SD=0.61) and re-address the objectives and barriers to effective school performance to (M=4.57, SD=0.66).

The school management system plans and focuses on the employee development with the rating of (M=4.42, SD=0.77).

The school management conducts planning and frequent performance discussions for management plans to improve performance with the rating of (M=4.46, SD=0.74). All item indicators got a verbal interpretation of a very great extent, as disclosed by the overall mean of 4.50 and supported with a standard deviation of 0.732.

This means that the level of performance management system of selected performing public elementary central schools in the Province of Laguna in terms of Planning is a very great extent. This is done in the process of planning the activities required to achieve the desired goal and results of the school.

Table 2. Level Of Performance Management System Of Selected Performing Public Elementary Central Schools In The Province Of Laguna In Terms Of Monitoring.

Statement	Mean	SD	Remarks
School management monitors the status and achievement of common vision and goals for the school and employees.	4.41	0.65	Very Great Extent
People in the organization communicate and collaborate on ideas and processes to conduct monitoring of school performance.	4.31	0.71	Very Great Extent
The school principal monitors the unity between the school's success to drive a positive atmosphere in the organization.	4.21	0.86	Very Great Extent
The school management makes sure that each member of the school is on the same page in regard to short-term and long-term initiatives, workflow, and expectations.	4.23	0.76	Very Great Extent
Then school management sees to it that each individual in the organization knows his/her role, what is expected of them, and how they will use their skills responsibly.	4.00	0.85	Great Extent
Overall Mean = 4.23			
Standard Deviation = 0.781			
Verbal Interpretation = Very Great Extent			

Table 2 presents the level of performance management system of selected performing public elementary central schools in the Province of Laguna in terms of Monitoring.

The teachers observed that the selected performing elementary central schools conduct monitoring to a very great extent. School heads monitor the status and achievement of common vision and goal for the school and employees with (M=4.41, SD=0.65) and People in the organization communicate and collaborate on ideas and processes to conduct monitoring on school performance with the rating of (M=4.31, SD=0.71). The



school principal monitors the unity between the school's success to drive a positive atmosphere in the organization with the rating of (M=4.21, SD=0.86). The school management makes sure that each member of the school is on the same page in regard to short-term and long-term initiatives, workflow, and expectations with the rating of (M=4.23, SD=0.76). With these, the school management sees to it that each individual in the organization knows his/her role, what is expected of them, and how they will use their skills responsibly with the rating of (M=4.00, SD=0.85). All item indicators got a verbal interpretation of a very great extent, as disclosed by the overall mean of 4.23 and supported with standard deviation of 0.781.

This means that the level of performance management system of selected performing public elementary central schools in the Province of Laguna in terms of Monitoring is a very great extent. This is done by observing and checking the school on the progress or quality over a period of time and keeping them under systematic review. In the monitoring phase, the goals set in the planning phase are actively tracked.

Table 3. Level Of Performance Management System Of Selected Performing Public Elementary Central Schools In The Province Of Laguna In Terms Of Development.

Statement	Mean	SD	Remarks
The school management conducts job analyses, plans personnel needs, and recruits the right people for the job.	4.66	0.56	Very Great Extent
Provides orientation and training for teachers for professional development.	4.50	0.72	Very Great Extent
Sets priorities, focuses energy and resources to strengthen operations of the organization.	4.44	0.72	Very Great Extent
Ensures that employees and other stakeholders are working toward common goals.	4.28	0.77	Very Great Extent
Adjusts the organization's direction in response to a changing environment.	4.47	0.62	Very Great Extent
Overall Mean = 4.47			
Standard Deviation = 0.691			
Verbal Interpretation = Very Great Extent			

Table 3 presents the level of performance management system of selected performing public elementary central schools in the Province of Laguna in terms of Development.

The teachers showed that the selected performing public elementary central schools in the Province of Laguna conduct development to a very great extent. The school management conducts job analyses, plans personnel needs, and recruits the right people for the job with the rating of (M=4.66, SD=0.56), and provides orientation and trainings for teachers for professional development with (M=4.50, SD=0.72). Sets

priorities, focus energy, and resources to strengthen operations of the organization with (M=4.44, SD= 0.72). The school management ensures that employees and other stakeholders are working toward common goals with (M=4.28, SD=0.77) and adjusts the organization's direction in response to a changing environment with (M=4.47, SD=0.62). All item indicators got a verbal interpretation of a very great extent, as disclosed by the overall mean of 4.47 and supported with a standard deviation of 0.691.

This means that level of performance management system of public elementary selected performing central schools in the Province of Laguna in terms of Development is of a very great extent. This is done with the growth of teachers in all aspects and by which the leaders acquire skills and competency in their present position with the purpose of imparting advanced knowledge and competencies among the teachers.

Table 4. Level Of Performance Management System Of Selected Performing Public Elementary Central Schools In The Province Of Laguna In Terms Of Performance Rating.

Statement	Mean	SD	Remarks
Gives employees important information as to what areas of the job he/she is performing well and those that need improvement.	4.42	0.67	Very Great Extent
Examines and evaluates an employee's work behavior and performance by comparing it with preset standards.	4.24	0.78	Very Great Extent
Establishes agreement around intended outcomes/results, and assesses employee performance.	4.15	0.82	Very Great Extent
Updates employees of the current status of performance rating to give room for development until the rating period comes.	4.21	0.89	Very Great Extent
Communicates with the organization the organizations goals, the actions needed to achieve those goals, and all of the other critical elements needed in the performance rating.	4.38	0.74	Very Great Extent
Overall Mean = 4.28			
Standard Deviation = 0.791			
Verbal Interpretation = Very Great Extent			

Table 4 presents the level of performance management system of selected performing public elementary central schools in the Province of Laguna in terms of Performance Rating.

Based on the teachers' perceptions, the selected performing public elementary central school in terms of performance rating arrived at a very great extent result.



The statement of which states that the schools give employees important information as to what areas of the job he/she is performing well and those that need improvement (M=4.42, SD=0.67) and examines and evaluates an employee's work behavior and performance by comparing it with preset standards with (M=4.24, SD=0.78).

They communicate with the organization the organization's goals, the actions needed to achieve those goals, and all of the other critical elements needed in the performance rating (M=4.38, SD=0.74). This also includes the school's action in terms of establishing agreement around intended outcomes/ results, and assess employee performance (M=4.15, SD=0.82), and updates employees of the current status of performance rating with (M=4.21, SD=0.89). Majority of the indicators got a verbal interpretation of a very great extent, as disclosed by the overall mean of 4.28 and supported with a standard deviation of 0.791.

This means that level of performance management system of public elementary selected performing central schools in the Province of Laguna in terms of Performance Rating is a very great extent. This is done by measuring the achievement of the school across various categories. Teachers and officials typically measure achievement using classroom performance, graduation rates and results from a standardized test.

Table 5. Level Of Performance Management System Of Selected Performing Public Elementary Central Schools In The Province Of Laguna In Terms Of Rewards.

Statement	Mean	SD	Remarks
Acknowledges employees' hard work through awards and compensation.	4.03	0.81	Great Extent
Shows willingness to support each member of the organization by giving rewards and incentives to earn trust and foster remarkable loyalty and tenacity to employees.	4.23	0.76	Very Great Extent
Allocates compensation and benefits to employees that follow the standards, rules, and procedures established by the organization.	4.19	0.77	Great Extent
Rewards employees with financial remuneration to garner loyalty, consistency, quality, and value in their work.	4.10	0.83	Great Extent
Provides outstanding training and development opportunities for the faculty for professional growth.	3.97	0.78	Great Extent
Overall Mean = 4.11			
Standard Deviation = 0.795			
Verbal Interpretation = Great Extent			

Table 5 presents the level of performance management system of selected performing public elementary central schools in the Province of Laguna in terms of Rewards.

The teachers' observed that the selected performing public elementary central schools give a reward to a very great

extent. Acknowledges employees hard work through awards and compensation with (M=4.03, SD=0.81). Shows willingness to support each member of the organization by giving rewards and incentives to earn trust and foster remarkable loyalty and tenacity to employees with (M=4.23, SD=0.76) and allocates compensation and benefits to employees that follow the standards, rules, and procedures established by the organization with (M=4.19, SD=0.77).

Rewards employees with financial remuneration to garner loyalty, consistency, quality, and value in their work with the rating of (M=4.10, SD=0.83). It provides outstanding training and development opportunities for the faculty for professional growth with (M=3.97, SD=0.78). Majority of the indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.11 and supported with a standard deviation of 0.795. This means that level of performance management system of public elementary selected performing central schools in the Province of Laguna in terms of Rewards is manifested. This is done where people are acknowledged for their performance in intrinsic or extrinsic ways and the management gives appropriate acknowledgment and appreciation of teachers' efforts in a fair and timely manner.

Table 6. Level Of Best Practices Of Selected Performing Public Elementary Central Schools In The Province Of Laguna As To Community Involvement And Linkages.

Statement	Mean	SD	Remarks
Teachers and program beneficiaries show a willingness to participate in extension activities.	4.27	0.74	Very Great Extent
Programs for community services are planned and implemented regularly by the school.	4.26	0.79	Very Great Extent
The school acknowledges the influence of community services to promote positive school culture.	4.12	0.77	Great Extent
Teachers plan and do community services to help people in the communities enhance and develop.	4.17	0.84	Great Extent
Teachers provide and perform skills development trainings and life skills to form linkages to nearby communities.	4.24	0.79	Very Great Extent
Overall Mean = 4.21			
Standard Deviation = 0.786			
Verbal Interpretation = Very Great Extent			

Table 6 presents the level of best practices of selected performing public elementary central schools in the Province of Laguna as to community involvement and linkages.

The gathered data have shown that the selected performing public elementary central schools conduct community involvement and linkages to a very great extent. Teachers and program beneficiaries show a willingness to participate in



extension activities with the ratings of (M=4.27, SD=0.74), and programs for community services are planned and implemented regularly by the school with (M=4.26, SD=0.79). The school acknowledges the influence of community services to promote positive school culture with (M=4.12, SD=0.77). Teachers plan and do community services to help people in the communities enhance and develop with the rating of (M=4.17, SD=0.84) and provide and perform skills development trainings and life skills to form linkages to nearby communities with (M=4.24, SD=0.79). The majority of the indicators got a verbal interpretation of a very great extent, as disclosed by the overall mean of 4.21 and supported with a standard deviation of 0.786. This means that level of best practices of public elementary selected performing central schools in the Province of Laguna as to community involvement and linkages is a very great extent. This is done by bringing positive measurable change to the community in which they operate the school and they have non-profit partnerships that benefit the entire institution.

Table 7. Level Of Best Practices Of Selected Performing Public Elementary Central Schools In The Province Of Laguna As To Adopt A School Program

Statement	Mean	SD	Remarks
Interested schools have matched several matched partnerships based on shared interests and goals	4.08	0.74	Great Extent
The school organization receives assistance from private entities to assist a public school in a particular aspect of its educational program	4.10	0.95	Great Extent
The school has a collaborative relationship with various community organizations and works together to determine how to best connect partner resources and interests with the school's unique needs.	4.05	0.84	Great Extent
The participating school encourages partners to start with their strengths and organizational philanthropic priorities, and then work collaboratively with the school to develop a shared vision grounded in serving students and the school community.	4.03	0.86	Great Extent
Participating schools receive supports from matched partners throughout the school year which keeps the relationship on track.	3.99	0.80	Great Extent
Overall Mean = 4.05 Standard Deviation = 0.840 Verbal Interpretation = Great Extent			

Table 7 presents the level of best practices of selected performing public elementary central schools in the Province of Laguna to adopt a school program. Based on the teachers' perceptions, the

selected performing public elementary central schools conduct adopt a school program to a great extent.

The school organization receives assistance from private entities to assist a public school in a particular aspect of its educational program with the rating of (M=4.10, SD=0.95) and interested schools have matched several matched partnerships based on shared interests and goals with (M=4.08, SD=0.74). The school has a collaborative relationship with various community organizations and work together to determine how to best connect partner resources and interests with the school's unique needs with the rating of (M=4.05, SD=0.84) and the participating school encourage partners to start with their strengths and organizational philanthropic priorities and then work collaboratively with the school to develop a shared vision grounded in serving students and the school community with (M=4.03, SD= 0.86). Also, participating schools receive supports from matched partners throughout the school year which keeps the relationship on track with (M=3.99, SD=0.80). All item indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.05 and supported with a standard deviation of 0.840.

This means that level of best practices of public elementary selected performing central schools in the Province of Laguna as to adopt a school program is a very great extent. This is done by having them a program where a private entity agrees to assist them in a particular aspect of its educational program within an agreed period.

Table 8. Level Of Best Practices Of Selected Performing Public Elementary Central Schools In The Province Of Laguna As To Production And Self-Directed Learners.

Statement	Mean	SD	Remarks
The school produces self-directed learners who can facilitate their purposes and competent enough to be productive in the community.	4.36	0.76	Very Great Extent
The school develops learners who take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, and identifying material resources that best fit their needs.	4.29	0.82	Very Great Extent
The school develops learners with their techniques, methods, and approaches to the learning process.	4.01	0.90	Great Extent
The school develops learners who are aware of their learning desires and interests and confident of their learning abilities	4.13	0.88	Great Extent
The school develops learners who have the motivation to learn and practice self-control or psychological well-being	3.98	0.86	Great Extent
Overall Mean = 4.15 Standard Deviation = 0.857 Verbal Interpretation = Great Extent			



Table 8 presents the level of best practices of selected performing public elementary central schools in the Province of Laguna as to production and self-directed learners.

The teachers observed that the selected performing public elementary central schools conduct a production and self-directed learners to a great extent. The school produces self-directed learners who can facilitate their purposes and competent enough to be productive in the community with the rating of (M=4.36, SD=0.76) and the school develops learners who take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals and identifying material resources that best fit to their needs with (M=4.29, SD=0.82). The school develops learners with their techniques, methods, and approaches to the learning process with the rating of (M=4.01, SD=0.90) and the school develops learners who are aware of their learning desires and interests and confident of their learning abilities with (M=4.13, 0.88). The school develops learners who have the motivation to learn and practice self-control or psychological well-being with (M=3.98, SD=0.86). The majority of the indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.15 and supported with a standard deviation of 0.857.

This means that level of best practices of public elementary selected performing central schools in the Province of Laguna as to production and self-directed learners is to great extent. This is done by conceptualization; design conduct and evaluation of the learning project and their key point is that the learners choose to be temporarily isolated and immersed within the peer's networks in their decisions.

Table 9. Level Of Best Practices Of Selected Performing Public Elementary Central Schools In The Province Of Laguna As To Effective Classroom Management.

Statement	Mean	SD	Remarks
Teachers apply strategies that can help create an organized classroom environment that's conducive to teaching.	4.02	0.82	Great Extent
Teachers use a wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a class	4.05	0.84	Great Extent
Teachers allow the student to grow as a person inside the classroom teaching them to apply those learnings in the real world guided with positive feedback.	4.12	0.87	Great Extent
Teachers minimize the behaviors that impede learning for both individual students and groups of students while maximizing the behaviors that facilitate or enhance learning.	3.86	0.90	Great Extent
Teachers focus largely on	3.85	1.02	Great

“compliance”—rules and strategies that teachers may use to improve learning.			Extent
Overall Mean = 3.98			
Standard Deviation = 0.898			
Verbal Interpretation = Great Extent			

Table 9 presents the level of best practices of selected performing public elementary central schools in the Province of Laguna as to effective classroom management.

The teachers showed that the selected performing elementary central schools have effective classroom management to a great extent. Teachers apply strategies that can help create an organized classroom environment that's conducive to teaching with the ratings of (M=4.02, SD=0.82).

Teachers allow the student to grow as a person inside the classroom teaching them to apply those learnings in the real world guided with positive feedback with (M=4.12, SD=0.87) and teachers use a wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a class with the ratings of (M=4.05, SD=0.84). Teachers minimize the behaviors that impede learning for both individual students and groups of students while maximizing the behaviors that facilitate or enhance learning with the ratings of (M=3.86, SD=0.90). Teachers focus largely on “compliance”—rules and strategies that teachers may use to improve learning with (M=3.85, SD=1.02). All item indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 3.98 and supported with a standard deviation of 0.898.

This means that level of best practices of public elementary selected performing central schools in the Province of Laguna as to effective classroom management is a great extent. This is done by collecting gentle and powerful strategies designed to create an environment that is most conducive to learning and enjoying school and their desires and fulfillment of both the students and teachers are met.

Table 10. Level Of Best Practices Of Selected Performing Public Elementary Central Schools In The Province Of Laguna As To Research.

Statement	Mean	SD	Remarks
External training and seminars/workshops for research are provided.	4.49	0.70	Very Great Extent
Research outputs are translated into productive and sound resource materials for instructions and technology for community development.	4.35	0.80	Very Great Extent
Research projects are aligned with the research thrusts and priorities of the Department of Education.	4.38	0.73	Very Great Extent



Teachers are aware and conduct research diligently as required.	4.12	0.83	Great Extent
Research outputs are aligned to the needs of the institution.	4.23	0.83	Very Great Extent
Overall Mean = 4.32			
Standard Deviation = 0.789			
Verbal Interpretation = Very Great Extent			

Table 10 presents the level of best practices of selected performing public elementary central schools in the Province of Laguna as to research.

Based on the teachers' perceptions, the selected performing public elementary central schools conduct research to a very great extent. External training and seminars/workshops for research are provided with the ratings of (M=4.49, SD=0.70), and research projects are aligned with the research thrusts and priorities of the Department of Education with (M=4.38, SD=0.73). Research outputs are translated into productive and sound resource materials for instructions and technology for community development with the ratings of (M=4.35, SD=0.80). Teachers are aware and conduct research diligently as required with the ratings of (M=4.12, SD=0.83) and research outputs are aligned to the needs of the institution with (M=4.23, SD=0.83). The majority of the indicators got a verbal interpretation of a very great extent, as disclosed by the overall mean of 4.32 and supported with a standard deviation of 0.789.

Table 11. Level Of Best Practices Of Selected Performing Public Elementary Central Schools In The Province Of Laguna As To School-Based Feeding Program.

Statement	Mean	SD	Remarks
Orientation with the parents of recipients of SBFP is conducted by the School Head, the Canteen Teacher, and the BAC.	4.37	0.55	Very Great Extent
Availability of Health certificates of volunteer parents or food handlers are available and posted on strategic areas.	4.28	0.60	Very Great Extent
Gulayan sa Paaralan is maintained to sustain SBFP.	4.25	0.63	Very Great Extent
The school feeding area has available safe drinking water in water jugs and containers.	4.12	0.69	Great Extent
The school feeding area has fresh and good quality ingredients used in the daily feeding of the School-Based Feeding program.	4.17	0.65	Great Extent
Overall Mean = 4.24			
Standard Deviation = 0.632			
Verbal Interpretation = Very Great Extent			

Table 11 presents the level of best practices of selected performing public elementary central schools in the Province of Laguna as to school-based feeding program. The teachers observed that the selected performing public elementary central schools conduct school-based feeding programs to a very great extent

Orientation with the parents of recipients of SBFP is conducted by the School Head, the Canteen Teacher and the BAC with the ratings of (M=4.37, SD=0.55) and availability of Health certificates of volunteer parents or food handlers are available and posted on strategic areas with (M=4.28, SD=0.60). The Gulayan sa Paaralan is maintained to sustain SBFP with the ratings of (M=4.25, SD=0.63). The school feeding area has available safe drinking water in water jugs and containers (M=4.12, SD=0.69) and the school feeding area has fresh and good quality ingredients used in the daily feeding of the School-Based Feeding program with (M=4.17, SD=0.65). The majority of the indicators got a verbal interpretation of a very great extent, as disclosed by the overall mean of 4.24 and supported with a standard deviation of 0.632.

This means that level of best practices of public elementary selected performing central schools in the Province of Laguna as to school-based feeding program is a very great extent. This is done by providing both educational and health benefits to the most vulnerable children and increasing enrollment rates, reducing absenteeism, and improving food security at the household level.

Table 12. Level Of Best Practices Of Selected Performing Public Elementary Central Schools In The Province Of Laguna As To Reading Program.

Statement	Mean	SD	Remarks
The school reading program improves learners reading speed and comprehension.	4.09	0.68	Great Extent
The school reading program develops learners reading competencies appropriate for their grade level.	4.26	0.66	Very Great Extent
The school reading program develops the literacy skills of the learners	4.16	0.67	Great Extent
The school reading program develops the learners' love for reading.	4.15	0.67	Great Extent
The school reading program establishes a sustainable school-based reading professional development for teachers.	4.02	0.76	Great Extent
Overall Mean = 4.13			
Standard Deviation = 0.693			
Verbal Interpretation = Great Extent			

The teachers showed that the selected performing public elementary central schools conduct reading programs to a great



extent. The school reading program improves learners reading speed and comprehension with the rating of (M=4.09, SD=0.68). The school reading program develops learners reading competencies appropriate for their grade level with the ratings of (M=4.26, SD=0.66) and the school reading program develops literacy skills of the learners with (M=4.16, SD=0.67). The school reading program develops the learners' love for reading with the rating of (M=4.15, SD=0.67). The school reading program establishes a sustainable school-based reading professional development for teachers with (M=4.02, SD=0.76). The majority of the indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.13 and supported with a standard deviation of 0.693.

This means that level of best practices of public elementary selected performing central schools in the Province of Laguna as to reading program is a great extent.

Table 13. Level Of Best Practices Of Selected Performing Public Elementary Central Schools In The Province Of Laguna As To Health Inspection Program.

Statement	Mean	SD	Remarks
It is ensured that environmental health, waste management is practiced preventing the possible accumulation of any illness.	4.07	0.73	Great Extent
Education and training are provided informing principals, teachers, students, and parents about possible hazards and controls inside the school so they can work more safely and be more productive.	4.19	0.68	Great Extent
Deworming is done every July and January of the following year	4.18	0.69	Great Extent
Information about a child's health programs, objectives, and purpose are clear, comprehensible, and transparent.	4.21	0.65	Very Great Extent
Deworming, weighing, and measuring the height and weight of the pupils in all levels are done.	4.15	0.67	Great Extent
Overall Mean = 4.16 Standard Deviation = 0.685 Verbal Interpretation = Great Extent			

Table 13 presents the level of best practices of selected performing public elementary central schools in the Province of Laguna as to health inspection program.

Based on the teachers' perceptions, the selected performing public elementary central schools conduct health inspection programs to a great extent. Information of child's health programs, objectives, and purpose are clear, comprehensible, and transparent with the rating of (M=4.21, SD=0.65) and education and training are provided informing

principals, teachers, students, and parents about possible hazards and controls inside the school so they can work more safely and be more productive with (M=4.19, SD=0.65). It is ensured that environmental health, waste management is practiced preventing the possible accumulation of any illness with (M=4.07, SD=0.73). Deworming is done every July and January of the following year with the rating of (M=4.18, SD=0.69) and deworming, weighing, and measuring of the height and weight of the pupils in all levels are done with (M=4.15, SD=0.67). The majority of the indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.16 and supported with a standard deviation of 0.685.

This means that level of best practices of public elementary selected performing central schools in the Province of Laguna as to health inspection program is a great extent. This is done by labor inspection enforcing legal provisions relating to conditions of work and the protection of teachers while engaged in the system.

Table 14. Level Of Quality Education Of Selected Performing Public Elementary Central Schools In The Province Of Laguna With Regard To Learner Characteristics.

Statement	Mean	SD	Remarks
The school develop self-reliant learners	4.10	0.71	Great Extent
The school develop learners that cultivate good habits	4.21	0.62	Very Great Extent
The school develops learners that have inner motivation and self-discipline.	4.15	0.70	Great Extent
The school develops learners that driven by their interests.	4.15	0.69	Great Extent
The school develops learners that engage with the world around them.	4.18	0.61	Great Extent
Overall Mean = 4.16 Standard Deviation = 0.668 Verbal Interpretation = Great Extent			

The teachers observed that the selected performing public elementary central schools have a learner characteristic to a great extent. The school develops learners that cultivate good habits with the ratings of (M=4.21, SD=0.62) and the school develops learners that engage with the world around them with (M=4.18, SD=0.61). The school develops learners that are self-reliant with (M=4.10, SD=0.71). The school develops learners that have inner motivation and self-discipline with (M=4.15, SD=0.70). The school develops learners that engage with the world around them with the ratings of (M=4.15, SD=0.69). The majority of the indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.16 and supported with standard deviation of 0.668.



This means that level of quality education of public elementary selected performing central schools in the Province of Laguna with regards to learner characteristics is a great extent. This is done by designating a target group of learners and define the aspects of their personal, academic, social, or cognitive self that may influence how and what they learn.

Table 15. Level Of Quality Education Of Selected Performing Public Elementary Central Schools In The Province Of Laguna With Regard To The Teaching Learning Process.

Statement	Mean	SD	Remarks
The educator assesses learning needs, establishes specific learning objectives, develops teaching and learning strategies, implements a plan of work, and evaluates the outcomes of the instruction	4.13	0.65	Great Extent
All efforts made by the teachers are directed towards the learners	4.11	0.66	Great Extent
The educators interact with the earners to work toward their goals and incorporate new knowledge, behaviors, and skills that add to their range of learning experiences.	4.11	0.69	Great Extent
Teaching materials or learning resources are designed mainly to support teaching and learning in different contexts	4.10	0.66	Great Extent
Evaluating the students' performance whether the purpose of teaching & learning has been achieved, is evident	4.12	0.69	Great Extent
Overall Mean = 4.12 Standard Deviation = 0.669 Verbal Interpretation = Great Extent			

Table 15 presents the level of quality education of selected performing public elementary central schools in the Province of Laguna with regard to the teaching learning process.

The teachers showed that the selected performing public elementary central schools conduct the teaching-learning process to a great extent.

The educator assesses learning needs, establishes specific learning objectives, develops teaching and learning strategies, implements a plan of work and evaluates the outcomes of the instruction with the rating of (M=4.13, SD=0.65) and evaluating the students' performance whether the purpose of teaching & learning has been achieved, is evident with (M=4.12, SD=0.69). Teaching materials or learning resources are designed mainly to support teaching and learning in different contexts with the ratings of (M=4.10, SD=0.66) and all the efforts made by the teachers are directed towards the learners with (M=4.11, SD=0.66).

The educators interact with the earners to work toward their goals and incorporate new knowledge, behaviors, and skills that add to their range of learning experiences with the ratings of (M=4.11, SD=0.69). All item indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.12 and supported with a standard deviation of 0.669.

This means that level of quality education of public elementary selected performing central schools in the Province of Laguna with regards to teaching-learning process is a great extent. This is done by including many variables that interact with them to work toward their goals and incorporate new knowledge behaviors and skills that add to their range of learning experiences

Table 16. Level Of Quality Education Of Selected Performing Public Elementary Central Schools In The Province Of Laguna With Regard To Educational Contents.

Statement	Mean	SD	Remarks
Educational contents are backed up with facts to prevent compromising the quality of education received by the students	4.17	0.65	Great Extent
Educational contents are suitable and relevant for the target group	4.12	0.68	Great Extent
Contents are aligned to current events and are up-to-date	4.11	0.72	Great Extent
The educational content is aligned with the needs of the community.	4.16	0.66	Great Extent
Educational content presented to students strikes their interests to make them engaged and enjoy the value of studying	4.14	0.66	Great Extent
Overall Mean = 4.14 Standard Deviation = 0.675 Verbal Interpretation = Great Extent			

Table 16 presents the level of quality education of selected performing public elementary central schools in the Province of Laguna with regard to educational content.

Based on the teachers' perceptions, the selected performing public elementary central schools have educational content to a *great extent*. Educational contents are backed up with facts to prevent compromising the quality of education received by the students with the ratings of (M=4.17, SD=0.65) and the educational content is aligned with the needs of the community with (M=4.16, SD=0.66). Contents are aligned to current events and are up-to-date with the ratings of (M=4.11, SD=0.72) and educational contents are suitable and relevant for the target group with (M=4.12, SD=0.68). Educational content presented to students strikes their interests to make them engaged and enjoy the value of studying with the ratings of (M=4.14, SD=0.66). All item indicators got a verbal interpretation of *great extent*, as disclosed by the overall mean of 4.14 and supported with a standard deviation of 0.675.



This means that level of quality education of public elementary selected performing central schools in the Province of Laguna with regards to educational contents is a *great extent*. This is done by the teachers teach and that students are expected to learn in a given subject or content area.

Table 17. Level Of Quality Education Of Selected Performing Public Elementary Central Schools In The Province Of Laguna With Regard To The Learning Environment.

Statement	Mean	SD	Remarks
The school provides a diverse physical environment, contexts, and <u>cultures</u> in which students learn.	4.18	0.79	Great Extent
The school promotes an environment that works together which can further enhance the knowledge already acquired by the learners.	4.10	0.87	Great Extent
The school creates a cooperative learning environment that has both a positive social and educational impact on students.	4.09	0.82	Great Extent
The school encompasses a positive culture of a school or class, including how individuals interact with and treat one another.	4.01	0.84	Great Extent
The school is filled with sunlight and stimulating educational materials that would likely be considered more conducive to learning.	4.02	0.86	Great Extent
Overall Mean = 4.08			
Standard Deviation = 0.838			
Verbal Interpretation = Great Extent			

Table 17 presents the level of quality education of selected performing public elementary central schools in the Province of Laguna with regard to the learning environment.

The teachers observed that the high performing elementary schools have a learning environment to a *great extent*. The school provides a diverse physical environment, contexts, and cultures in which students learn with the ratings of ($M=4.18$, $SD=0.79$) and the school promotes an environment that works together which can further enhance the knowledge already acquired by the learners with ($M=4.10$, $SD=0.87$).

The school creates a cooperative learning environment that has both a positive social and educational impact on students with the ratings of ($M=4.09$, $SD=0.82$), and the school is filled with sunlight and stimulating educational materials that would likely be considered more conducive to learning with ($M=4.02$, $SD=0.86$). The school encompasses a positive culture of a school or class, including how individuals interact with and treat one another ($M=4.01$, $SD=0.84$). All item indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.08 and supported with standard deviation of 0.838.

This means that level of quality education of public elementary selected performing central schools in the Province of Laguna

with regards to the learning environment is a great extent. This is done by the diverse physical locations, contexts, and cultures of the learners. They have an infinite number of possible learning environments which is what makes teaching so interesting.

Table 18. Level Of Quality Education Of Selected Performing Public Elementary Central Schools In The Province Of Laguna With Regard To School Management.

Statement	Mean	SD	Remarks
The school stays abreast of internal, external, and international rules and regulations pertaining to instruction and other policies that enhance the quality of education and services provided by the organization.	4.01	0.88	Great Extent
The school management plans direct or coordinates quality assurance programs and formulate quality control policies.	4.12	0.83	Great Extent
The school management follows the vision, mission, and goal of the institution.	4.02	0.84	Great Extent
The school management ensures that services meet certain thresholds of acceptability and compliance.	4.03	0.88	Great Extent
The school management ensures that subordinates are aware of quality requirements and provides training in best practices.	4.00	0.93	Great Extent
Overall Mean = 4.03			
Standard Deviation = 0.873			
Verbal Interpretation = Great Extent			

The school stays abreast of internal, external, and international rules and regulations pertaining to instruction and other policies that enhance the quality of education and services provided by the organization with the ratings of ($M=4.01$, $SD=0.88$). All item indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.03 and supported with standard deviation of 0.873. This means that level of quality education of public elementary selected performing central schools in the Province of Laguna with regards to school management is a great extent. This is done by leading them towards development through not only the optimum use of the human resources, physical sources, principles, and concepts that help in achieving all the objectives of the school, but also the proper coordination and adjustment among all of them.



Table 19. Level Of Quality Education Of Selected Performing Public Elementary Central Schools In The Province Of Laguna With Regard To Funding And Organization.

Statement	Mean	SD	Remarks
The funds given to the school are organized according to the needs and priorities of the school.	4.04	0.88	Great Extent
Financial and other resources are used to bring, develop and facilitate quality education.	4.09	0.85	Great Extent
Transparency with regard to school funds is observed and practiced.	4.08	0.85	Great Extent
School funds and budget are used for school and people development.	4.10	0.83	Great Extent
Financial resources are used for the development and improvement of the teaching-learning process.	4.08	0.83	Great Extent
Overall Mean = 4.08			
Standard Deviation = 0.846			
Verbal Interpretation = Great Extent			

Table 19 presents the level of quality education of selected performing public elementary central schools in the Province of Laguna with regard to funding and organization. Based on the teachers' perception, the selected performing public elementary central schools conduct funding and organization to a great extent.

School funds and budget are used for school and people development with the ratings of (M=4.10, SD=0.83), and financial and other resources are used to bring, develop and facilitate quality education with (M=4.09, SD=0.85). The funds given to the school are organized according to the needs and priorities of the school (M=4.04, SD=0.88). Transparency with regard to school funds is observed and practiced with the ratings of (M=4.08, SD=0.85), and Financial resources are used for the development and improvement of the teaching-learning process with (M=4.08, SD=0.83). The majority of the indicators got a verbal interpretation of great extent, as disclosed by the overall mean of 4.08 and supported with standard deviation of 0.846.

Table 20. Regression Analysis on the Effect of Performance Management System on the Quality of Education.

Quality Education	Beta	t-value	p-value	Analysis
<i>Learner Characteristics</i>	0.149	1.582	0.115	Not Significant
<i>Teaching Learning Process</i>	0.017	-0.189	0.851	Not Significant
<i>Educational Content</i>	0.121	-1.254	0.211	Not Significant
<i>Learning Environment</i>	0.027	0.371	0.711	Not Significant
<i>School Management</i>	0.180	2.659	0.008	Significant
<i>Funding and Organization</i>	0.171	-2.420	0.016	Significant

Results from Table 20 revealed that School Management affected the Quality of Education. The beta coefficient of 0.180 indicates that for every standard deviation unit increase in School Management, there is a corresponding 0.180 unit increase in the performance management system on the quality of education. The t-value of 2.659 is significant having a p-value of 0.008.

Another variable that influenced the Performance Management System on the Quality of Education was Funding and Organization. For every unit increase in their funding and organization, there was a 0.171 unit increase in their performance management system on the quality of education. The t-value of -2.420 is significant at 0.016 level of significance. The adjusted R-square indicates that 2.93% of the variation in the performance management system on the quality of education is explained by school management and funding and organization. The F-value of 2.217 is significant at a 0.042 level of significance.

This means that the performance management system on the quality of education was influenced by school management and funding and organization.

Table 21. Regression Analysis On The Effect Of Best Practices To The Quality Of Education.

Quality Education	Beta	t-value	p-value	Analysis
<i>Learner Characteristics</i>	0.253	3.602	0.000	Significant
<i>Teaching Learning Process</i>	0.061	-0.891	0.374	Not Significant
<i>Educational Content</i>	0.035	-0.480	0.632	Not Significant
<i>Learning Environment</i>	0.012	-0.225	0.823	Not Significant
<i>School Management</i>	0.140	2.756	0.006	Significant
<i>Funding and Organization</i>	0.091	-2.204	0.046	Significant

Results from Table 21 revealed that the Learner Characteristics affected the Quality of Education. The beta coefficient of 0.253 indicates that for every standard deviation unit increase in Learner Characteristics, there is a corresponding 0.253 unit increase in the best practices to the quality of education. The t-value of 3.602 is significant having a p-value of 0.000.

Another variable that influenced the Quality of Education was School Management. For every unit increase in their school management, there was a 0.140 unit increase in their performance management system on the quality of education. The t-value of 2.756 is significant at a 0.006 level of significance.

Likewise, the Quality of Education was influenced by Funding and Organization. The beta coefficient of 0.091 indicates that for every standard deviation unit increase in funding and organization, there is a corresponding 0.091 unit increase in the



best practices to the quality of education. The t-value of 2.756 is significant having a p-value of 0.046.

The adjusted R-square indicates that 6.71% of the variation in the best practices to the quality of education is explained by their learner characteristics, school management and funding, and organization. The F-value of 3.902 is significant having a p-value of 0.000.

This means that the best practices to the quality of education was influenced by learner characteristics, school management, and funding and organization.

6. CONCLUSION

On the basis of the foregoing findings, the following conclusion was drawn.

The performance management system is the systematic approach to measure the performance of an institution and is a process through which the organization aligns their mission, goals, and objectives with available resources systems and set the priorities. This goes along with the best practices needed to be performed to attain quality education.

Based on the gathered data, it is shown that School Management and Learning Environment has a significant effect on the Quality of Education that students should receive. Furthermore, best practices of an institution also have a significant effect in every aspect such as Learner Characteristics, Teaching-Learning Process, Educational Content, Learning Environment, School Management, and Funding and Organization. With these, the null hypothesis stating that "There is no significant relationship between the performance management system and best practices on the quality of education provided by selected performing public elementary central schools in the Province of Laguna", is partially rejected. Analyzed data inferred that best practices significantly affect quality education whereas Performance Management System significantly affects quality education, only in some areas such as Learning environment and School management.

7. RECOMMENDATION

Based on the drawn conclusions resulted to the following recommendations:

1. It may be recommended that sustaining quality education using the performance management system and best practices can be monitored using a school assessment with the faculty members. This is to develop a shared picture of strengths, challenges, and opportunities for action that will surely show great improvements.
2. Establishing baseline practices for classroom teaching that are non-negotiable but also leaving room for professional judgment, improvisation, and flexibility should also be considered as an aspect to improve quality education. This approach to policy acknowledges that there are some basic hallmarks of classroom teaching that all teachers should be expected to exhibit in their practices.
3. Furthermore, this research could also be used in a larger population that would allow for a better generalization of the data and a wider vision of how quality education was affected by performance management systems and best

practices.

4. Also, feedbacks received should be taken into consideration to determine the progress of the researchers in achieving their objectives.
5. Significant progress is possible when countries may prioritize the concept of 'learning for all. This progress is just the beginning of a global movement, with every student in every country learning about the basic life skills and approaches for sustainable development from well-trained teachers equipped with knowledge and resources and a well-designed curriculum.
6. The teachers may continue to become vigilantes in searching for the ultimate problem of the learners and take the necessary solution for the said problem following the required protocols in action research and appropriate program involved.
7. The parents and community stakeholders may be encouraged to take part in the implementation of the ongoing school projects through services or monetary support for the welfare of the learners.
8. It is also being suggested to include in the Learning Continuity Plan (LCP) the parents' orientation for the massive affirmative acceptance of their accountability without any objection.
9. Furthermore, it is also being suggested among the teachers to enroll in Graduate Studies for personal growth and development.

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THE SOVIET AGRARIAN POLICY IN THE IRRIGATION FIELD IN UZBEKISTAN (1950-1990)

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ABSTRACT

In the article it is analyzed the policy of the centre of the further strengthening mono cultural clap in Uzbekistan that in undertaken measures on building of large irrigation canals and pumping stations in republic on the bases of archival sources and a historical material in 50-80 XX century. Besides, research showed that Soviet government, having outlined the appropriate political and economic goals in Uzbekistan, began to introduce into practical life a policy related to the development of the irrigation system and the construction of reclamation facilities.

KEY WORDS: irrigation, irrigation canal, pumping station, siphon, collector, drainage, Soviet government, centre, cotton monopoly.

INTRODUCTION

By the second half of the 20th century, the Soviet government, having outlined the appropriate political and economic goals in Uzbekistan, began to introduce into practical life a policy related to the development of the irrigation system and the construction of reclamation facilities. Therefore, in order to effectively use irrigation lands in the republic, the possibilities of agricultural mechanization were increased, the area of irrigated fields was increased, special attention was paid to the implementation of measures for leveling irrigation fields, a number of resolutions were adopted relating to the development of the irrigation-reclamation industry.

METHODS

In particular, in 1952, on March 13, a resolution of the Council of Ministers of the USSR "On the progress of the restructuring of irrigation channels and the transition to a new irrigation system" was adopted [1]. According to him, in the republic of 1.5 million hectares of fields, soil works were carried out in the amount of 570 million m³, 24 machine-excavator stations (MES) were organized in the network of the Ministry of Water Resources of

the Republic [2]. And at the same time, the issue of expanding irrigation fields was considered in a resolution adopted in February 1954 by the Council of Ministers of the USSR and the Central Committee of the CPSU. According to this decree, out of 600 thousand hectares of irrigated fields in the republic, cotton fields expanded to 300 thousand hectares [3]. It was from this period that irrigation and reclamation works in the republic were entirely subordinated to the cotton monopoly. But the carried out irrigation work, in turn, made it possible to develop new lands and increase the yield of cotton.

RESULTS AND DISCUSSIONS

Beginning in 1955, a struggle began in the Soviet state under the slogan "Subordination of nature to the will of the people", a doctrine was formed called "For irrigation from springs, you can take as much water as you like, their size is unlimited." The reason for this state during the Soviet period was the development of small and medium-sized fields for irrigation. At the same time, the development of industry and a sharp increase in the population required the use of water resources in large quantities. But, almost without paying attention to the above, the main goal was to obtain a



continuous harvest from cotton fields. The cotton harvest plan did not take into account local conditions and increased year after year. In particular, in 1956, 2 million 900 thousand tons of cotton were grown in Uzbekistan, and this, in turn, in relation to 1955 amounted to a harvest of over 400 thousand tons [4]. The development of irrigation systems in the Republic was aimed at the interests of the cotton sector. As a result, in 1960, the volume of irrigation fields was increased to 2474 thousand hectares, i.e. this result in relation to 1954 increased by 274 thousand hectares [5].

On October 20, 1953, the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR adopted a resolution "On measures to expand irrigated lands and further development of water management in the Uzbek SSR". In this resolution, the total area of protected and gray lands acquired since January 1, 1953 in Central Ferghana amounted to 173.2 thousand hectares, including in Ferghana region - 89.6 thousand hectares, in Andizhan region - 83.6 thousand hectares passed. During the period from 1953 to January 1, 1963, 33,281 hectares of land in Central Ferghana were prepared and given to the developers of collective and state farms, and 26,632 hectares were cultivated [5].

On April 21, 1958, the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the USSR adopted a resolution "On intensification of work on irrigation and development of new and protected lands in Central Ferghana". According to the resolution, according to the 1957 plan, 12.6 thousand hectares were to be prepared by the Ministry of Water Resources of the USSR and its construction trust "Ferghanavodstroy" for irrigation and reclamation, and instead only 4.6 thousand hectares were prepared [6].

As of January 1, 1959, 377826.00 thousand rubles of capital funds were prepared for the operation of all the facilities of Central Fergana, of which only 172644.64 thousand rubles were allocated for use. On January 23, 1959, the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR adopted a resolution "On approval of the program of construction work on irrigation and development of the lands of Central Ferghana in 1959". According to the plan set out in this resolution, the growth of irrigated lands in the Central Ferghana massif was planned at 13,000, and in practice at 10,230, including 7,228 for planting in 1959. According to the plan, 42550000 rubles were allocated for irrigation and development of the valley lands from the indivisible fund of collective farms in Ferghana region, 30850000 rubles in Andizhan region, 32850000 rubles in Namangan region. However, in

practice, the allocated funds were not fully utilized on the ground [12].

On August 3, 1959, the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR adopted a resolution "On the irrigation and development of protected and gray lands in Central Ferghana in 1959-1965". The resolution approved the task of preparing 24.8 hectares of newly developed lands in Central Ferghana for 1959-1965 by districts [11]. On May 12, 1961 the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR adopted Resolution No. 370 "On the development of protected lands in Central Ferghana"[13]. The text of the resolution states: "From 1953 to 1961, 60.6 thousand hectares of land in Central Ferghana were prepared for irrigation and reclamation, of which 41.0 thousand hectares were cultivated on collective and state farms in 1960. The average rate of irrigation and reclamation of lands and their economic development amounted to 10-11 thousand hectares per year [2].

Soviet policy in the 1960s aimed at the development of irrigation works in Uzbekistan is directly related to the process of expanding irrigation fields. In the seven years (1959-1965), large-scale construction was carried out in the irrigation system of the republic, in particular in the Ferghana and Zarafshan valleys, Khorezm and Karakalpakstan, ditch systems were built, the amelioration state of lands located in 700 thousand hectares of fields was improved, the irrigation fields were expanded on 500 thousand hectares. It should be noted that in Soviet times, due to the efforts of the leadership of the republic, as well as due to the introduction of large investments in Uzbekistan SSR from the budget of the union, large-scale irrigation agriculture was developed in 1960-1970. On the one hand, this made it possible to solve to a certain extent the problem of demography and provide jobs in the republic by attracting a large part of the population to production in agriculture. At the same time, massive land reclamation led to severe environmental consequences: the Aral Sea began to shallow rapidly, large areas became saline and became unusable [6].

The Soviet authorities in the republic, in order to increase the continuous yield obtained from cotton, determined the importance of the implementation of reclamation measures to cultivate the lands and improve their condition. As a result of this policy, having reclaimed lands that were not previously used, they introduced them to consumption in agriculture. According to the decree of the plenum of the Central Committee of the CPSU "On the broad development of land reclamation" of May 1966, a program was developed to improve the land reclamation state [7]. This program was directly introduced into the agricultural sector of Uzbekistan.



As a result of the measures carried out in the spheres of irrigation-reclamation in the eleventh five-year plan (1981-1985), 238.6 thousand hectares of new irrigated land were developed, 461 thousand hectares of the land reclamation state were improved, 300 thousand hectares of irrigation lands were leveled. 4 new reservoirs, including the Andizhan reservoir with a capacity of 1,900 million m³, were put into operation. In the Tuyamuyin hydroelectric complex, in the reservoirs of Hisaraka, Zamina, Akdarya, Karavultapa, Aktepa, work was completed [8]. It should be noted that the ambivalent policy implemented by the Soviet government on irrigation issues led to a number of negative phenomena. For example, due to the watercourses of the collector, the degree of mineralization of river water has increased, as a result, the land reclamation state of the republic has worsened, the amount of saline lands has increased sharply. The malfunctioning of the land reclamation state intensified the deformation processes in the sphere of irrigation. The structure of sown fields has changed a lot in relation to previous periods. In the republic, 75 percent of all irrigated lands were cotton fields. The cotton monopoly, which has intensified in the agriculture of Uzbekistan, ruined the irrigation traditions and crop rotation systems formed in the republic for several years.

During the Soviet period, in order to irrigate existing cotton fields and collect water resources, special attention was paid to the construction of hydraulic facilities. But during the construction of reservoirs, not the human factor was a priority, but the interest of the cotton sector of the Soviet government. To achieve this goal, many reservoirs and canals have been built. To improve their technical condition, many orders and instructions were received from the center. In particular, in the order of the Ministry of Water Resources of the Republic 'On the construction of a temporary spillway system in the Tudakul reservoir', the task of building a water discharge from the reservoir 100 million m³ was entrusted to the heads of the water industry [9]. In 1957 in Yakkabagdarya the construction of the Kamashi reservoir and in 1963 the Chimkurgan reservoir was completed. As a result, the supply of water to irrigated lands in the Kashkadarya region has significantly increased. If in 1962, before the launch of the Chimkurgan reservoir, in the region there was a continuous cotton harvest of 139 thousand tons, then this figure in 1966 was 218 thousand tons or 57% [10].

As mentioned above, the main goal outlined during the construction of reservoirs in the republic was the conservation of water resources and their use in the interests of cotton growing. Therefore, the policy implemented for the construction of reservoirs by the decision-making bodies of the USSR

expanded year after year. In 1981-1990, due to irrigation construction, the number of reservoirs reached 23, construction continued on 15, and 6 reservoirs were being designed [11]. During the Soviet period, recumbent and standing drainage networks, canals and pumping stations, which were used in agriculture, were continued in the irrigation system of Uzbekistan. The use of these facilities in the republic has helped the development of cotton growing. Therefore, measures were taken to improve the technical serviceability of canals and pumping stations. In particular, on July 12, 1952, according to the order of the USSR Ministry of Cotton Growing "On measures for the technical improvement of the Great Ferghana Canal" [12], the technical condition of the Big Ferghana Canal was improved, which led to the intensification of cotton growing in the Ferghana Valley. In 1953, on the section of the Great Ferghana Canal from the Kuyganer dam to the Asaka siphon and in the South Ferghana Canal, a full clean-up work was carried out. In the canal, the water flowed full, cotton fields expanded. But as a result of the rise of groundwater, the circle turned out to be saline.

Starting from 1960-1970, in order to meet the needs of the cotton growing of the Soviet regime, the construction of canals was further intensified. In particular, on February 17, 1970, the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Uzbek SSR adopted a resolution "On the second stage of the construction of the Amu-Bukhara Canal" [13]. The water supply through the valley of small Zarafshan and Amu Darya for the construction of the first stage of the Amu-Karakul and Amu-Bukhara canals, the supply of water to irrigation lands in the regions of Bukhara, Samarkand and Kashkadarya has increased markedly. The use of the second stage of the canal, the cultivation of cotton contributed to the increase to 100 thousand tons, as well as the receipt of additional products from horticulture, the full use of agricultural capabilities in production.

Since the 70-80s of the XX century, in the field of agriculture, the republic attached importance to extensive development. As a result, the volume of irrigated land in 1950 increased from 2276 thousand hectares by 1986 to 4020 thousand hectares. The increase in the volume of irrigated land had almost no effect on the quality and efficiency of agricultural production. On the contrary, the size of the harvest per hectare decreased year after year. In 1986, due to re-salinization, one third of the sown irrigation fields were affected. In the 70-80s, due to the deterioration of the ameliorative state, almost 5 thousand hectares of irrigated land were withdrawn from agricultural consumption [14].

In the republic, the area of cotton sown fields from 1960 to 1980 increased by 30%, their volume



having come to 1980 was 2 million hectares. As a result, the priority of the cotton monopoly was ensured in the field of agriculture. Under the policy of the center, based on the administrative-coercive method, the process of collecting cotton raw materials called "white gold" was aggravated in any way [15].

Under the influence of the agrarian policy of the Soviet government, cotton fields were created in territories where water did not rise naturally, and pumping stations were built for their irrigation. In 1955-1959, 9 pumping stations [16] were launched in the Ferghana Valley, providing water for 10 thousand hectares. In the republic, the total length of collector-drainage networks has reached 37 km. In order to reduce the loss of water, for seven years (1959-1965) in areas of low water 545 km of canals were concreted [17]. In 1965, 2090 pumps were used in the irrigation system of the UzSSR [18]. During this period, the largest use of pumps in the irrigation system falls on the share of Samarkand - 400, Bukhara - 391. But, the spillage of water in the collector-drainage basins, the degree of mineralization of the springs in the basins increased. Every year from the collector-drainage in the Amu Darya water was spilled 3 billion m³, mineralization 1-4 grams. In 1970-1985, the salinity of the Amu Darya water doubled. Because from the regions of Karshi, Bukhara, Surkhandarya every second 40-60 m³ were spilled into the Amu Darya per 18 grams of salt water. The water of the Syr Darya is mineralized, in its composition you can see 1.29 grams of salt [19]. Subsequently, this had a negative impact on the development of fisheries [20].

CONCLUSION

Other negative consequences were the transformation of the Aral Sea region into a hotbed of diseases, in particular, the highest rate of throat cancer. Also, in the northwestern part of the republic, newborn mortality has risen to a high degree. Pollution of the inner river basins by various gravity influences on people's health and caused the spread of stomach diseases, epidemics of cholera, tuberculosis, hepatitis and other diseases.

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A STUDY OF CUSTOMERS SATISFACTION TOWARDS MRF TYRES WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

The importance of this study is to examine the customers level of satisfaction towards MRF tyres in Coimbatore city. It also tried to find out the factor which influence the users and the customer expectation towards MRF tyres. The data has been collected by survey methods through questionnaire with 120 respondents. Tools used in this project were simple percentage analysis and likert scale analysis. On this basis of the study, it found that customer is satisfied with tyres quality. These are the some find of the study. Most of the customer's suggestion is to improve the service in the rural area. Thus, the study concluded the customers are satisfied with the MRF tyres.

KEY WORDS: MRF tyres, customer satisfactions, Quality

INTRODUCTION

The importance of this study is to examine the customers level of satisfaction towards MRF tyres in Coimbatore city. It also tried to find out the factor which influence the users and the customer expectation towards MRF tyres. The data has been collected by survey methods through questionnaire with 120 respondents. Tools used in this project were simple percentage analysis and likert scale analysis. On this basis of the study, it found that customer is satisfied with tyres quality. These are the some find of the study. Most of the customer's suggestion is to improve the service in the rural area. Thus, the study concluded the customers are satisfied with the MRF tyres.

STATEMENT OF THE PROBLEM

Profit earning has become one of the important objectives of each and every company. It is very easy to attract new customers but retaining old customers is too difficult only the satisfied customer will remain loyal to the firm brands. If he finds any problems with tyres, he may change his positive attitude into negative attitude towards tyres given by the showroom.

OBJECTIVES OF THE STUDY

- To know the customer's satisfaction towards MRF tyres in Coimbatore city.
- To know the attributes which creates customer's satisfaction among tyre uses in Coimbatore.
- To know the satisfaction level of the customers with the MRF tyres.

RESEARCH METHODOLOGY

A research design is purely and simply the framework or plan for study that guides the collection and analysis of the data. In customer surveys, we have adopted this descriptive research design in collection and analysis.

PRIMARY DATA

In primary data collection, the data has been collected by using method of questionnaires.

SECONDARY DATA

The secondary data collection from various possible records like book, magazines, periodicals and websites.

SAMPLING TECHNIQUE

Convenient sampling technique was used.



SAMPLING SIZE

Sample size taken in this study was 120 consumers.

STATISTICAL TOOLS

- Simple percentage analysis
- Likert scale analysis

REVIEW OF LITERATURE

Kunal Madhav Vispute (2018) in his article " Company Analysis of Madras Rubber Factory (MRF) Limited " stated that The valuation has been performed using Free Cash Flow Models empowered with deep fundamental analysis, past financial performance, management performance, strategies adopted and various macroeconomic factors associated to it. The Tyre Sector has been analyzed in detail that holds a strong positive uphold in the upcoming time.

Veera Sudarsana Reddy (2015) in his article "Study On Customer Satisfaction In Jk Tyres Limited Hyderabad " stated that customer satisfaction is very important for any business whether it sales the product or service because it is satisfied then the make the repeat purchase and

tell other persons like their friends, neighbourhoods, family members etc. about their good experience and satisfied customers tell five other people about their good experience.

A. Natarajan (2016) in his article " A Study On Consumer Behavior Towards MRF Tyres at Chengam " stated that The consumer market is the same total of all the goods and service purchased in a given period by all the inheritance of a given country or a section for the satisfaction of their consumption needs. The consumer market actually consists of four components like People, Purchasing Power, needs for a specific product and Willing to fill the needs with a given product. The consumer orientation is the fundamental aspect of marketing management.

**TABLE
SIMPLE PERCENTAGE ANALYSIS**

Percentage analysis is used to find out the percentage value of all the entirely different questions used in finds comparison between two or more series of data.

$$\text{Percentage} = \frac{\text{Number Of Respondents}}{\text{Total number of respondents}} * 100$$

**TABLE 1
TABLE SHOWING PRICE OF MRF TYRES**

S.NO	PRICE	NO.OF. RESPONDENTS	PERCENTAGES%
1.	Affordable	62	52%
2.	Expensive	26	22%
3.	Very expensive	12	10%
4.	Cheap	20	16%
	Total	120	100

(Source: Primary Data)

INTERPRETATION

The above table shows that 52% of the respondents are affordable, 22% of the respondents are expensive, 10% of the respondents are very expensive, 16% of the respondents are cheap.

Majority (52%) of the respondents are belongs to affordable.

**TABLE 2
TABLE SHOWING THE USE MRF TYRES AGAIN**

S.NO	LIKE TO USE	NO. OF. RESPONDENTS	PERCENTAGE%
1.	Probably	47	38%
2.	Definitely	36	30%
3.	Maybe	29	24%
4.	Never used	8	6%
	Total	120	100

(Source: Primary Data)



INTERPRETATION

The above table shows that 38% of the respondents are probably, 30% of the respondents are definitely, 24% of the respondents are maybe, 2% of the respondents are never used.

Hence, majority (38%) of the respondents are belongs to probably.

LIKERT SCALE ANALYSIS

A Likert scale is a method of measuring attitudes, original scale of responses to a question or statement, ordered in hierarchical sequence negative to strong positive. Used mainly in behavioural science and psychiatry. In Likert scale method a person attitude is measured by combining (adding or averaging) their responses across all items.

TABLE 3
TABLE SHOWING SATISFACTION LEVEL OF FEATURES OF MRF TYRES AMONG ITS USERS

S.NO	SATISFACTION LEVEL	NO. OF RESPONDENTS	LIKERT SCALE	TOTAL SCALE
1.	Highly satisfied	55	5	275
2.	Satisfied	33	4	132
3.	Neutral	22	3	66
4.	Dissatisfied	5	2	10
5.	Average	5	1	5
	Total	120		488

(Source: Primary data)

CALCULATION OF LIKERT VALUE

Likert Scale = $\frac{\sum (fx)}{\text{Total number of respondents}}$

$$= \frac{488}{120}$$

$$= 4.0$$

Likert scale = 4.0

INTERPRETATION

From the above table and calculation, it is depicted that likert value is 4.0 which is greater than the mid value (2.5).

FINDINGS

- It is inferred the majority (52%) of the respondents are affordable with the MRF tyres in the Coimbatore city.
- The majority of the respondents (38%) are prefer the MRF tyres again.
- The likert scale value 4.0 which is greater than mid value (2.5) which shows that the customers are satisfied with the MRF tyres.

SUGGESTIONS

- Company can give more advertisement on mass media in the rural area.
- Some of the respondents expects more offers.
- MRF tyres needs to work on its readily available in market.
- For reducing the cost company can have installed new automated machineries.

CONCLUSION

From this study it is concluded that majority of the respondents are satisfied with the MRF tyres. The brand image influences the customer. Although from this study it is identified that it should focus on promotional measures to enhance their service to satisfy the customer. The MRF tyres tries to provide high quality and technology superior products to its customers. Company provide more advertisement and always keep customers need with development of MRF tyres.

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A STUDY ON FINANCIAL PERFORMANCE OF DELL COMPANY

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ABSTRACT

Financial overall performance is a subjective measure of how properly a company can use assets from its primary mode of commercial enterprise and generate measure of a firm's overall monetary fitness over a given period. The study used five years of DELL company data and the main objective of the study is to estimate the profitability of the business concern. The tools used for the study are liquidity ratio, profitability ratio, activity ratio and total assets turnover ratio. The company has to improve the efficiency at converting sales into actual profit to enjoy the best profit. The company should try to keep the costs lower and increase its the sales.

KEYWORDS: Profitability ratio, activity ratio, sales growth.

1. INTRODUCTION

Financial overall performance is a subjective measure of how properly a company can use assets from its primary mode of commercial enterprise and generate measure of a firm's overall monetary fitness over a given period. The economic overall performance identifies how nicely an employer generates revenues and manages its belongings, liabilities, and the economic past times of its stakeholders.

Analysts and traders use monetary performance to evaluate similar companies across the identical industry or to evaluate industries or sectors in aggregate.

Financial analysis involves the usage of financial statistics to assess an agency's performance and make tips approximately how it may improve going forward. Financial analysis primarily performs their work in excel, the usage of a spreadsheet to investigate historical statistics and make projections of ways they think the organization will carry out in the future.

2. STATEMENT OF THE PROBLEM

The problem of the analysis is to decide the economic ratio evaluation and to earn enough profit to control the proper functioning of DELL Company. The comparative evaluation technique determines the profitability and financial overall performance of a business through comparing economic statements of or extra time periods. The performance of business is measured by using the quantity of profit earned. The more the profit, the more efficient is the business. An attempt has been made to analyze the financial performance of the business of DELL Company.

3. OBJECTIVE OF THE STUDY

- To study the Profitability position of DELL Company.
- To Identify the Liquidity position of the concern.
- To know the changes over working capital of DELL Company.



4. RESEARCH METHODOLOGY

Source of data	Secondary data
Period of study	2015-2016 to 2019-2020
Framework of analysis	Financial statements
Tools and techniques	Ratio analysis

5. STATISTICAL TOOLS

The following statistical tools were applied to analyses the statistical data collected for calculation of financial performance analysis.

LIQUIDITY RATIO

- Current ratio
- Liquid ratio
- Absolute liquid ratio

PROFITABILITY RATIO

- Gross profit ratio
- Operating ratio

OTHER RATIOS

- Expenses ratio
- Inventory turnover ratio
- Total Assets turnover ratio
- Working capital

6. REVIEW OF LITERATURE

PROFESSOR HAITHAM NOBANE (2016), In this paper, the financial performance of the American technology company, Dell Technologies was assessed via the use of four different types of financial ratios. To compute these ratios, data was extracted from Yahoo Finance. The progression of each ratio was studied over the period between 2016 – 2019. Four types of ratios were analyzed: Liquidity ratios, Activity ratios, Debt Ratios, and Profitability Ratios. This analysis, along with secondary Literature Review of articles from peer-reviewed journals, allowed for the development of

suggestions to further increase the stability of the company's financial state.

SHENBAGAM & KANNAPPAN (2015), Financial analysis is an aspect of the overall business finance function that involves examining historical data to gain information about the current and future financial health of a company. The present study found that the "A study on financial position and performance analysis with special reference to Tata Consultancy Services" for a period of five years from 2010 -2011 to 2014 -2015. The data was collected from the company's annual reports and other related information was gathered from the journals and books. To know the financial ratio in IT, sector the researcher have taken Tata Consultancy Services for their study.

JAGDISH RAIYANI (2019), Since Centuries India is leading in Science & Technology, curious mindset of the people is the force behind leading India in today's modern day world of information technology. India is one of the largest exporters of such services in the field of IT and Business Process Outsourcing (BPO), it also shares a maximum portion round about 7.7% in GDP of the country which is projected to increase to 10% in 2025. Hence it becomes imperative to know the financial performance of IT company the way it' going forward. The present paper analyses the financial performance of the top 10 leading companies of India by analyzing its profitability and liquidity performance over the years.

7. TABLES

Year	Current Ratio	Liquid Ratio	Absolute Liquid Ratio	Gross Profit Ratio	Operating Ratio
2015-16	0.93	0.87	0.25	16.47	184.54
2016-17	0.81	0.74	0.30	21.96	181.89
2017-18	0.88	0.82	0.35	25.98	177.07
2018-19	0.80	0.72	0.22	27.65	172.56
2019-20	0.70	0.64	0.18	31.40	165.76



- Current ratio of the company was highest in the year 2016 with the ratio of 0.93 and lowest in the year 2020 with the ratio of 0.70.
- Liquid ratio, highest in the year 2016 with the ratio 0.87 and in the lowest in the year 2020 with the ratio 0.64.
- Absolute liquid ratio of the company was highest in the year 2018 with the ratio 0.35 and lowest in the year 2020 with the ratio 0.18.
- Gross profit of the company was highest in the year 2020 with the ratio 31.40 and lowest in the year 2016 with the ratio 16.47.
- Operating ratio of the company was highest in the year 2016 with the ratio 184.54 and lowest in the year 2020 with the ratio 165.76.

8. SUGGESTION

- ✓ The company is able to pay short term obligations and the company has enough quick assets to pay for its current liabilities, so the company has to maintain this further
- ✓ The company's day-to-day cash management need to be improved.
- ✓ The gross profit margin may be improved by increasing sales price or decreasing cost of sales.
- ✓ The company has to improve the efficiency at converting sales into actual profit to enjoy the best profit.
- ✓ The company should try to keep the costs lower and increase its sales.

9. CONCLUSION

The analysis of financial performance of ORACLE FINANCIAL SERVICES SOFTWARE Limited is stated in this report. The liquidity position of the company is satisfactory hence the company can meet out its short term liabilities and have enough quick assets to pay off current liabilities and future it has to maintain day to day cash management to increase the absolute liquid ratio alone. However the profitability position of the company is not much better, that the company has to decrease the cost of production and keep the cost lower or increase sales price and also

need to improve the efficiency in converting sales into actual profit.

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A STUDY ON FINANCIAL PERFORMANCE OF LARSEN AND TURBO

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ABSTRACT

Finance studies and addresses the ways in which individuals, businesses, and organizations raise, allocate, and use monetary resources over time, taking into account the risks entailed in their projects. Financial management involves managerial activities concerned with the acquisition of fund for business purpose. The finance function does with procurement of money taking into consideration today as well as future needs and finance is required to purchase a machinery and raw materials, to pay salaries and wages and also for day-to-day expenses. Corporate finance is an area of finance dealing with the financial decisions corporations make and the tools and analysis used to make these decisions. L&T has delivered Engineering, Procurement and Construction (EPC) services for many projects in the upstream hydrocarbon sector over the last two decades, in India, Middle East, Africa, South-East Asia and Australia. L&T has formed a joint venture with Sapura Crest Petroleum Berhad, Malaysia for providing services to offshore construction industry worldwide. It has made presence in various sectors that include Solar, Electrical and automation, information technology, machinery and industrial products, alloys, etc. This study attempts to provide an insight into financial soundness of the company. It also highlights the significant relationships of the financial statements through analysis. It would also help the company in planning future financial decisions by improving the current financial position and soundness. The study has been restricted to data available between years 2011-2014.

KEYWORDS: Financial performance, L&T, ratio analysis.

1. INTRODUCTION

The finance function does with procurement of money taking into consideration today as well as future needs and finance is required to purchase a machinery and raw materials, to pay salaries and wages and also for day-to-day expenses. Corporate finance is an area of finance dealing with the financial decisions corporations make and the tools and analysis used to make these decisions.

2. STATEMENT OF THE PROBLEM

In order to function in an efficient and effective manner, every company needs to be aware of its liquidity and financial conditions. This way, it is possible to identify the trends and relationships between financial statement items. There is a need to strike a balance between profitability and liquidity which in turn protects the interest of creditors and investors. The industries can focus on attaining a higher level of performance by showing current financial position of the company. Such evaluations are also useful in reforming and improving weaknesses which is done through recognition of the

strengths of performed activities. Thus, the study focuses on analysis of the liquidity five of last thirteen years of the company.

3. OBJECTIVES OF THE STUDY

- To critically evaluate the various financial ratios of L&T.
- To provide an insight about the financial soundness of the company.
- To provide suggestions on better Liquidity ratio based on the findings.

4. RESEARCH METHODOLOGY

Research is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge.



SOURCE OF DATA

PRIMARY DATA

The information collected is mainly based on the personal discussion with the financial executives

SECONDARY DATA

Secondary data is mainly collected from annual reports, official records and the web page of the company.

5. TOOLS AND TECHNIQUES

1. Liquidity Ratio

- Current ratio
- Liquid ratio
- Absolute liquid ratio

2. Profitability Ratio

- Gross profit ratio
- Net profit ratio
- Return on investment ratio

3. Solvency ratio

- Equity ratio

4. Activity ratio

- Inventory turnover ratio
- Fixed asset turnover ratio
- Total asset turnover ratio

6. REVIEW OF LITERATURE

K.T. Gopi (2018)¹, “The study on financial performance of cement industry in India” in this study mistreatment Extended Dupont approach of leading cement firms like ACC, Gujarat Ambuja and Ultra tech cement for the period 2006-2015. This approach has stressed on analysis of Return

on Equity (ROE). This approach has shown the decline in the profitability of leading cement firms throughout the period and it can be inferred that the monetary performance of all three companies appears to be similar as measured by ROE with minimal deviation among companies.

Mrs. N. Sumathi and Dr. K. Jothi (2016)², “A comparative analysis on cement companies in India with reference to Ultra tech limited and OCL India limited” accomplishing this study using convenience sampling approach for the period of 10 years and concluded that financial position of the companies are satisfactory, profitability ratio proves the performance of selected companies and both the companies must enhance their short term solvency position.

ChandrasahasSahu (2013)³, “The study on mathematical modeling of concrete mixes, and its properties in fresh and harden state” by using slump test and comparison factor test and compressive strength and indicates that mixes containing distinct dosage of the fantastic plasticizer indicates the impact on compressive strength of concrete and enhance the workability with same water cement ratio and it significantly influences the concrete combination fluidity and it was designed to modify traditional conventional concrete.

7. TABLES

TABLE SHOWING LIQUID RATIO

YEAR	LIQUID ASSET	CURRENT LIABILITY	LIQUID RATIO
2015-2016	102,598.34	85,046.43	1.20
2016-2017	117,701.51	89,525.12	1.31
2017-2018	131,390.44	109,273.22	1.20
2018-2019	160,377.51	133,802.31	1.19
2019-2020	176,943.24	144,729.21	1.22

INTERPRETATION

The standard liquid ratio is 1:1. The higher ratio, the higher will be the safety margin. In the year of 2016-2017 the ratio was 1.31 but then it starts decreasing and gave a rise in the year of 2019-2020

maintain this further.

8. SUGGESTIONS

- The company is able to pay short term obligations and the company has enough quick assets to pay for its current liabilities, so the company has to

- The company should try and increase its liquidity position so that it will be able
- to meet short term- debt obligations and has enough resources to pay its debt over next 12 months.
- The Operating cash flow should generate sufficient positive cash flow to maintain its operations and also to be able to meet its interest expenses.
- The company has good earning capacity by reducing cost of sales and



should try to increase its Sales at a greater pace.

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9. CONCLUSION

The ultimate aim of analysing the financial statements of the company is to forecast the enterprise's liquidity, profitability and solvency position. The ratio analysis is one of the most powerful tools of analysing financial performance. The analysis of financial statements has helped to identify the strengths and weakness of the company. In general the company has achieved tremendous progress over the recent years. The company's performance is satisfactory. The study gives a clear idea of the financial performance of the company over the last five years. The study reveals that the company is in profitable position and has been maintaining a good financial performance.

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VACCINE DEVELOPMENT- A COMPLEX SCIENCE

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ABSTRACT

Several human vaccinations were created at the end of the nineteenth century, Smallpox, rabies, plague, cholera, and typhoid vaccinations are among them. Major things to acknowledge before vaccine preparation is that we have to isolate the antibody firstly which our body has produced against the pathogen and what is the composition of that antibody and also the structure of an antibody. A vaccine is administered to induce immunity in an individual's body. Typically, the manufacture of vaccine uses viral or bacterial antigen in it. It may be killed or attenuated vaccine (live but less virulent). The foremost step to produce a vaccine is to select the strains for the vaccine and to culture the strain or microorganism. These two steps are collectively known as the upstream process. This is further followed by isolation and purification of the microorganism and then after the inactivation of the organism which is used for vaccine preparation formulation of vaccine begins. The last step is to check quality control and then further lot release; all of these steps are included in downstream processing. Mostly used vaccines lack efficiency, potency and safety. To take the vaccine preparation to next level, the introduction of monoclonal antibodies, recombinant DNA, and protein engineering have been accelerated knowledge of pathogenic mechanisms. This review provides a new approach to the development of the succeeding generation of vaccines.

INTRODUCTION

A vaccine is a medicine that is prepared to improve immunity against a specific pathogenic disease. To begin with we need to know about how our immunity works with the vaccine ^[1]. When pathogens or foreign particles such as germs, viruses, bacteria and fungi etc. enter our body, they multiply and attack our body and cause illness. To prevent the illness, our immune system uses its specialized cells say Leukocytes. Innate immunity and acquire immunity collectively work as the immune system. Vaccine boosts up immunity and helps in fighting the deadly pathogens. When inactivate or weaken disease-causing microorganisms enter the body, they initiate an immune response ^[2]. This response mimics the body's natural response to infection. Some vaccines are capable of providing a long-term response against the infection (Active immunization)

and then some vaccines begin their work rapidly but are short-lasting (Passive immunization).

IMMUNOLOGY BEHIND VACCINE DEVELOPMENT

Even though this article is about vaccine development, however, we need to know about immunology to know about vaccines. Immunology is the study of the immune system of one individual's body and functions of the immune system and also its disorder ^[3]. The immune system provides immunity to particular diseases caused by pathogens through antibodies ^[4]. Antibodies are proteins that are released by our body's immune system to break down or neutralize the toxins released by the disease-causing microorganism or pathogen Antigens are foreign substances which cause the production of antibody. So, antibodies are disease-specific, which implies that only a type of antibody works against a



specific type of antigen^[5]. For example, Measles antibody only protects from measles disease and will have no other effects on mumps or rabies disease^[6]. Immunity is classified into two- ACTIVE and PASSIVE.

If we talk about active immunity, it protects our body when it comes to exposure to a disease-causing microorganism say pathogen. Active immunity starts producing antibodies against the pathogen. Active immunity provides immunological memory, which means it will protect the body if it comes in contact with the disease in future, the immune system will recognize the pathogen and produce the antibody which is needed. On top of that, it is long-lasting^[7].

Passive immunity can be natural or artificial depending on the circumstances. In passive immunity, one person is administered antibodies against the infection rather than producing them through their immune system. For instance, a mother's placenta helps in providing immunity to a newborn baby (Passive immunity). Passive immunity begins to work very rapidly. So, if one needs immediate protection from a specific disease, passive immunization can be helpful. Tetanus or other antitoxins are examples of passive immunization. A disadvantage of passive immunity is that it only lasts for a few weeks or months^[8].

STAGES OF VACCINE DEVELOPMENT

A vaccine is a preparation that protects by forming antibodies and by boosting the immunity against the infection or disease. It is prepared from the weakened or killed version of the causative agent of disease it is administered to induce immunity. Vaccination is a process by which immunity to a pathogen is elicited (meaning that one who has taken the vaccine have been developed antibodies against the pathogen and now is immune). Nowadays vaccines are being developed with genetic engineering, it lets not cause any infection while it enters the body. So, the stages involved in vaccine production are-

To identify the strains for vaccine production:

- a. Proliferation of microorganisms.
 - b. Isolation and purification of microorganism
 - c. Inactivation of microorganism
 - d. Formulation of vaccine
 - e. Quality control and release
- a. **To identify the strains for vaccine production-**
The process begins with small amounts of a specific virus (seed). Viruses or bacteria used in the manufacturing process must be derived from a Seed Lot System. Each Seed Lot should have a

record of its origin, including purification history and storage conditions^[9]. Impurities, such as other similar viruses and even mutations of the same type of virus, must be removed from the virus^[10]. The virus must be kept under "perfect" conditions, which usually means frozen, to prevent it from becoming stronger or weaker than desired^[11]. The seed is chosen based on several parameters, including the efficiency of the eventual vaccine as well as its side effects^[12].

- b. **Proliferation of microorganisms-** For culturing the bacteria there are a couple of methods, say batch culture or continuous culture. In batch culture, microbes grow in a close container and have very less or no contamination. If we talk about continuous culture, the microorganism is cultured in a tank that receives a new medium regularly and removes used media regularly^[13]. Alternate methods uses in the growth of microorganisms are cell culture, bird embryos, live animal inoculation and transgenic animals^[14].
- c. **Isolation and purification of microorganisms-** In the manufacture of vaccines, components whose qualities differ significantly from those of the target result are removed. Isolation and purification can be accomplished using a variety of techniques like chromatography, centrifugation, and filtration^[15]. Chromatography is a class of physical separation techniques defined by the separation of mixtures due to changes in sample component distribution coefficients between two phases, one stationary and the other movement. Example: Modified Vaccinia Ankara virus (Smallpox vaccine)^[16]. Centrifugation is a method of sedimentation and separation of solid particles from liquids that uses centrifugal force as a driving factor. It is used to separate and purify pathogenic virus antigens as well as other agents utilized in vaccine manufacturing. Example: Influenza vaccine, rabies vaccine, Hepatitis B vaccine, and Japanese encephalitis vaccine production^[17]. Filtration is the separation of particles from a liquid by forcing the solution through a filter by applying pressure to the solution^[18].
- d. **Inactivation of microorganisms-** To make an inactivated or killed vaccine there's the necessity to inactivate the microorganism. This sort of vaccine is made by inactivating a pathogen with heat or chemicals like formaldehyde or formalin. The pathogen's ability to multiply is destroyed, but it remains "intact" so that the immune system can



recognize it (Virus vaccines of this type are usually referred to as "inactivated," rather than "killed," because viruses aren't considered alive)^[19].

- e. **Formulation of vaccine-** A vaccination contains additional substances in addition to microorganisms or parts of microorganisms. Suspending fluids, a liquid that contains the chemicals used in the manufacturing of vaccinations to kill or weaken the organism. Sterile water, saline, or protein-containing fluids^[20]. Influenza and yellow fever vaccines, which are made from chicken eggs, contain egg proteins. Hepatitis B vaccines are manufactured by transfecting cells of *Saccharomyces cerevisiae* (baker's yeast) with the gene encoding the hepatitis B surface antigen, and residual amounts of yeast proteins are found in the final product^[21]. Preservative and stabilisers like Albumin, Phenols, Glycine, Monosodium glutamate (MSG), and 2-phenoxy-ethanol, which are used as stabilisers in a few vaccines to help the vaccine remain unchanged when exposed to heat, light, acidity, or humidity^[22].
- f. **Quality control and release-** Quality control for new vaccinations are critical since we must confirm that the product is safe, effective, and pure as well as pass the stability test. Once immunizations are initiated, national authorities and WHO carefully analyse and determine the severity of any potentially harmful side effects and responses from vaccine recipients^[23].

TYPES OF VACCINES

Vaccines are made up of either the full disease-causing organism or a portion of it, a microbe or some of its constituents. Vaccines could be created in a variety of ways^[24].

- a. Live-attenuated
- b. Inactivated
- c. Recombinant sub-unit
- d. Toxoid
- a. **Live-attenuated vaccine-** Live vaccinations employ a weakened (or attenuated) version of the disease-causing bacterium. These vaccines elicit a powerful and long-lasting immune response because they are so identical to the natural infection they help prevent. Most live vaccinations can provide lifetime protection against a germ and the disease it causes with just one or two doses^[25]. Currently, a variety of live attenuated vaccines are in use. For

instance, measles, polio (Sabin vaccine), rotavirus, smallpox, tuberculosis, varicella-zoster (chickenpox), yellow fever^[26].

- b. **Inactivated-** An inactivated vaccination employs a dead virus or bacterium to boost the immune system and protect the body from illness. Because the bacteria or virus is no longer alive, it can no longer replicate or cause disease^[27]. The US Food and Drug Administration has authorised 85 single and combination vaccinations for use (FDA)^[28]. Some examples include hepatitis A, influenza, Japanese encephalitis, rabies, typhoid etc.^[27]
- c. **Recombinant sub-unit-** Recombinant subunit vaccines are also known as recombinant protein vaccination are manufactured utilizing protein antigens. The method employed in the formulation of this sort of vaccination is recombinant DNA technology. Recombinant DNA methods have a lot of promise for developing low-cost, safe, and effective vaccinations. Two categories of recombinant vaccines are established. One is vectored and the other is a Recombinant subunit, produced by a heterogeneous protein expression system^[29-30].
- d. **Toxoid-** A toxin-based vaccination that has been kept neutral while still eliciting an immunological response to the toxin^[31]. The poison enters the circulation and causes the disease's symptoms. To induce immunity, the protein-based toxin is made harmless and utilized as an antigen in a vaccine. The toxoid is adsorbed to aluminium or calcium salts, which act as adjuvants, to enhance the immunological response^[31]. Examples- Tetanus toxoid, diphtheria toxoid^[31].

NOVEL APPROACHES TO THE VACCINE

Some several techniques and hypotheses outline the new vaccines approach. According to immunokinetics, the strength of the immune response increases as the speed of the above contact or release increases, and decreases as the speed of the above contact or release decreases with a reduction in it^[32]. Experimental data is used to support clonal selection and idiotypic immune network theories^[32]. The immunokinetics theory is mostly confirmed by natural events that everyone can observe and verify



^[32]. It accounts for the fact that diseases that evolve quickly, such as smallpox, generate a greater immune response ^[32]. The research found that sublingual delivery resulted in increased bioavailability of almost all vaccine compositions ^[32]. As a result, it seems to be a viable method for testing the immunokinetics working hypothesis in action ^[32]. A novel vaccination that is administered sublingually might increase the efficacy, practicality, and safety of existing vaccines ^[32]. Vaccines may also trigger an immune response to cancer, therefore weakening autoimmune diseases ^[32]. Recombinant DNA technology, monoclonal antibodies, and protein engineering are the prime illustrations of novel approaches to the next generation of vaccines ^[2]. Recombinant DNA and protein engineering technologies are referred to as biotechnology ^[2].

CONCLUSION

People are afraid to take vaccinations during the COVID-19 pandemic because of misconceptions and rumours that immunisation would cause disease and harm to everybody. So, one must discover what necessity vaccination is, what it does to our body, and most importantly, that it does not affect the body. There are a few cases in a billion when vaccines produce adverse side effects, but they usually fade away with time. The stages of vaccine development are a quick topic to learn about, and the most intriguing aspect is the different types of vaccines that exist presently. The stages of vaccine development are a comprehensive topic to study, and the most intriguing aspect is the variety of vaccines that exist now. Vaccine preparation is complicated, yet it couldn't be more fascinating to study. With the advancement of technology, new and improved vaccination methods are being developed to make them more effective.

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ASSOCIATIONAL STUDY TO ASSESS THE ASSOCIATION BETWEEN SOCIO DEMOGRAPHIC VARIABLE AND SELF-ESTEEM AMONG ADOLESCENTS

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ABSTRACT

It is a component of the Self-concept that Rosenberg (2) defines as a totality of individual thoughts and feelings, having reference to him as an object. Besides self-esteem, self-efficacy and self-identification are an important part of the Self-concept. Self-esteem as a whole is an unchanging feature of adults and it is difficult to be influenced by the sample design of a study (3). Bibliotherapy uses literature to bring about a therapeutic interaction between the client and the therapist. The design used for this study was one group pretest post-test control group design. The study was conducted in Kargapaga Vinayaga Higher secondary school among adolescent of age group 12-19 years. Total sample selected were 60 in total. Sample selection was done by purposive sampling technique. Ken Williams modified self-esteem assessment questionnaire, was used to assess the level of self-esteem among adolescents. The study was conducted after the written permission of Kargapaga Vinayaga Higher secondary school and approval of ethical committee of R. L. College of Nursing. Regarding monthly family income majority 4(13.33%) were earning below rs.3000, 3(10.00%) were earning rs. 3001-5000 6(20.00%) were earning Rs.5001- Rs.7000, 5(16.67%) were earning Rs.7001-Rs.9000, 12(40.00%) were earning more than Rs.9001 respectively. Regarding order of birth majority 10(33.33%) were belongs to first order of birth 14(46.67%) were belongs to second order of birth, 6(20.00%) were belongs to third order of birth, and 0(0.00%) were belongs to more than three order of birth respectively. The investigator concluded that sample adolescents had the self-esteem level as 14(46.67%) had low self-esteem, 16(53.3%) had moderate self-esteem and 0 (0%) had high self-esteem. In control group 6(20.0%) had low self-esteem, 24(80.0%) had moderate self-esteem and (0%) had high self-esteem. the socio demographic variables religion and occupation of mother had shown statistically significant association with post test level of self-esteem at $p < 0.05$.

The results of the study suggested that among the adolescent 10 (20%) had low self-esteem 29(55%) had moderate self-esteem and 11(22%) had low self-esteem.

The investigator concluded that sample adolescents had the self-esteem level, 0(0%) had low self-esteem,1(3.33%) had moderate self-esteem and29 (96.67%)had high self-esteem. in control group 6(20.0%) had low self-esteem, 24(80.0%) had moderate self-esteem and 0(0%) had high self-esteem. These findings was supported by varun raj (2009) who conducted a study to assess the effectiveness of bibliotherapy on self-esteem among 60 adolescents the results revealed that the bibliotherapy was effective. These findings was supported by Jegatheesan (1996) who conducted a study to identify the efficacy of bibliotherapy for mildly and moderate self-esteem adolescents. cognitive and behavioral bibliotherapy were non differently efficacious,60 percent subjects demonstrated clinically significant changes. The pretest mean value of self-esteem was 28.06 with S.D 5.05 and the posttest mean value of self-esteem was 67.06 with S.D 6.88. This clearly shows that the administration of bibliotherapy on self-esteem among adolescents had significant improvement in their post test level of self-esteemamong adolescents. The pretest mean value of self-esteem was 30.13 with S.D 2.67 and the post test mean value of self-esteem was 30.23 with S.D 2.62. The calculated t value of $t = 1.795$ was not found to be statistically significant. This clearly shows that there was no significant difference between the pretest and post test self-esteem score among adolescents in the control group.

KEY WORDS: Association , Self-esteem, Adolescents.



INTRODUCTION

Self-esteem is an overall assessment of the individual's worthiness, expressed in a positive or negative orientation towards them. It is a component of the Self-concept that Rosenberg (2) defines as a totality of individual thoughts and feelings, having reference to him as an object. Besides self-esteem, self-efficacy and self-identification are an important part of the Self-concept. Self-esteem as a whole is an unchanging feature of adults and it is difficult to be influenced by the sampleal design of a study (3). Bibliotherapy uses literature to bring about a therapeutic interaction between the client and the therapist. The idea of using literature is to help the client understand his situation better by reading a related material.

MATERIAL AND METHOD

Associational research approach was used for the present study. The design used for this study was one group associational design. The study was conducted in Kargapaga Vinayaga Higher secondary school among adolescent of age group 12-19 years. Total sample selected were 60 in total. Sample selection was done by purposive sampling technique. Ken Williams modified self esteem assessment questionnaire, was used to assess the level of self esteem among adolescents. The study was conducted after the written permission of Kargapaga Vinayaga Higher secondary school and approval of ethical committee of R. L. College of Nursing.

RESULTS

DESCRIPTION OF SOCIO DEMOGRAPHIC VARIABLES OF THE ADOLESCENTS IN SAMPLEAL AND CONTROL GROUP

Table 1: Frequency and percentage distribution of socio demographic variables of adolescents in sampleal and control group

N=60(30+30)

Socio demographic Variables	Sample Group	
	f	Percentage
	No.	%
Age		
12 - 14 years	12	40.00
14 - 17 years	17	56.67
17 - 19 years	1	3.33
Sex		
Male	23	76.67
Female	7	23.33
Religion		
Hindu	25	83.33
Muslim	3	10.00
Christian	2	6.67
Family Type		
Joint family	10	33.33
Nuclear family	20	66.67
Place of Residence		
Urban	8	26.67
Rural	22	73.33
Occupation of Parents ± Father		
Private employee	6	20
Self employed	14	46.67
Government employee	10	33.33
Occupation of Parents ± Mother		
Homemaker	3	10.00



Private employee	20	66.67
Self employed	4	13.33
Government employee	3	10.00
Education of Parents ± Father		
No formal education	7	23.33
Primary education	14	46.67
Diploma Degree	9	30.00
Post graduate	0	0.00
Education of Parents ± Mother		
No formal education	1	3.33
Primary education	10	33.33
Diploma Degree	13	43.33
Post graduate	6	20.00
Family Income (Monthly)		
Below Rs.3000	4	13.33
Rs.3001 - Rs.5000	3	10.00
Rs.5001 - Rs.7000	6	20.00
Rs.7001-Rs.9000	5	16.67
More than Rs.9001	12	40.00
Order of Birth		
First	10	33.33
Second	14	46.67
Third	6	20.00
More than three	0	0.00

The table 1 shows that in the Sample group, the majority 12(40.0%) were in the age group of 12-14 years, 17(56.67%) were in the age group of 14-17 years and 1(3.33%) were in the age group of 17-19 years respectively. With respect to the gender majority 23(76.67%) were male and 7(23.33%) were female. Regarding the religion, majority 25(83.33%) were belongs to hindu, 3(10.00%) were muslim and 2(6.67%) were Christian. Regarding family type the majority 10(33.33%) were belongs to joint family and 20(66.67%) were belongs to nuclear family. Regarding place of residence majority 22(73.33%) were in rural and 8(26.67%) were in urban. Regarding occupation of father majority 6(20%) were private employee, 14(46.67%) were self employed and 10(33.33%) regarding occupation of mothers majority 3(10.00%) were home maker 20(66.67%) were private employee 4(13.33%) were self employed and 3(10.00%) were government employee. Regarding education of father majority 7 (23.33%) were undergone no formal education 14(46.67%) were undergone primary education 9(30.00%) were undergone diploma or degree and 0(05) were undergone post graduate education. Regarding mothers education majority of 1(3.33%) undergone no formal education, 10(33.33%) were undergone primary education, 13(43.33%) were undergone diploma or degree 6(20.00%) were undergone post graduate education. Regarding monthly family income majority 4(13.33%) were earning below rs.3000, 3(10.00%) were earning rs. 3001-5000 6(20.00%) were earning Rs.5001- Rs.7000, 5(16.67%) were earning Rs.7001-Rs.9000, 12(40.00%) were earning more than Rs.9001 respectively. Regarding order of birth majority 10(33.33%) were belongs to first order of birth 14(46.67%) were belongs to second order of birth, 6(20.00%) were belongs to third order of birth, and 0(0.00%) were belongs to more than three order of birth respectively. Regarding number of siblings majority of 16(53.33%) have one siblings, 11(36.67%) were have two siblings, and 3(10.00%) have above two siblings. Regarding medium of education majority of 30(100.00%) have English as their medium of education. And 0(0.00%) have tamil as their medium of education.



SECTION B

ASSESSMENT OF LEVEL OF SELF-ESTEEM AMONG ADOLESCENTS IN SAMPLE GROUP.

Table 2: Frequency and percentage distribution of level of self-esteem among adolescents in the sample group

	n=30					
	Low		Moderate		High	
Self-Esteem	(<=27)		(28 ± 52)		(53 ± 80)	
	No.	%	No.	%	No.	%
Pretest	14	46.67	16	53.33	0	0

The table 2 reveals the percentage distribution of level of self-esteem in the sample group.

The analysis of level of self-esteem in sample group, revealed that 16(53.33%) had moderate level of self-esteem and 14(46.67%) had low level of self esteem.

SECTION C

The first objective to assess the level of self esteem among adolescents in sample. The investigator concluded that adolescents had the self esteem level as 14(46.67%) had low self esteem, 16(53.3%) had moderate self esteem and 0 (0%) had high self esteem. These findings were supported by Baby (2004) who conducted a study to assess the level of self esteem among 50 school going adolescents at Pondicherry. The results of the study suggested that among the adolescent 10 (20%) had low self esteem 29(55%) had moderate self esteem and 11(22%) had low self esteem. The investigator concluded that adolescents had the self esteem level, 0(0%) had low self esteem, 1(3.33%) had moderate self esteem and 29 (96.67%) had high self esteem.

SECTION D

Associations of post test level of self-esteem among adolescents with their selected socio demographic variables in experimental group.

n=30

Socio demographic Variables	Moderate (28 ± 52)		High (53 ± 80)		Chi-Square Value
	No.	%	No.	%	
Age					$\chi^2=0.791$
12 - 14 years	0	0	12	40.0	d.f = 2
14 - 17 years	1	3.3	16	53.3	p = 0.673
17 - 19 years	0	0	1	3.3	N.S
Sex					$\chi^2=0.315$
Male	1	3.3	22	73.3	d.f = 1 p = 0.575



Female	0	0	7	23.3	N.S
Religion					$\chi^2=14.483$
Hindu	0	0	25	83.3	d.f = 2
Muslim	0	0	3	10.0	p = 0.001
Christian	1	3.3	1	3.3	S***
Family Type					$\chi^2=0.517$
Joint family	0	0	10	33.3	d.f = 1
Nuclear family	1	3.3	19	63.3	p = 0.472
					N.S
					$\chi^2=0.376$

Socio demographic Variables	Moderate (28 ± 52)		High (53 ± 80)		Chi-Square Value
	No.	%	No.	%	
Place of Residence					d.f = 1
Urban	0	0	8	26.7	p = 0.540
Rural	1	3.3	21	70.0	
Occupation of Parents - Father					$\chi^2=6.724$
Private employee	1	3.3	3	10.0	d.f = 3
Self employed	0	0	17	56.7	p = 0.081
Government employee	0	0	6	20.0	N.S
Not working	0	0	3	10.0	
Occupation of Parents - Mother					$\chi^2=9.310$
Homemaker	1	3.3	2	6.7	d.f = 3
Private employee	0	0	20	66.7	p = 0.025



Self employed	0	0	4	13.3	S*
Government employee	0	0	3	10.0	
Education of Parents ± Father					$\chi^2=2.414$
No formal education	0	0	7	23.3	d.f = 2
Primary education	0	0	14	46.7	p = 0.299
Diploma Degree	1	3.3	8	26.7	N.S
Post graduate	-	-	-	-	
Education of Parents ± Mother					$\chi^2=2.069$
No formal education	0	0	1	3.3	d.f = 3
Primary education	1	3.3	9	30.0	p = 0.558
Diploma Degree	0	0	13	43.3	N.S
Post graduate	0	0	6	20.0	

Socio demographic Variables	Moderate (28 ± 52)		High (53 ± 80)		Chi-Square Value
	No.	%	No.	%	
Family Income (Monthly)					
Below Rs.3000	0	0	4	13.3	$\chi^2=4.138$
Rs.3001 - Rs.5000	0	0	3	10.0	d.f = 4
Rs.5001 - Rs.7000	1	3.3	5	16.7	p = 0.388
Rs.7001-Rs.9000	0	0	5	16.7	N.S
More than Rs.9001	0	0	12	40.0	
Order of Birth					
First	0	0	10	33.3	$\chi^2=1.182$
Second	1	3.3	13	43.3	d.f = 2
Third	0	0	6	20.0	p = 0.554



More than three	-	-	-	-	N.S
Number of Siblings					$\chi^2=0.905$
One	1	3.3	15	50.0	d.f = 2
Two	0	0	11	36.7	p = 0.636
Above two	0	0	3	10.0	N.S
Medium of Education					
Tamil	1	3.3	29	96.7	-
English	-	-	-	-	

***p< 0.001, *p<0.05, S ± Significant, N.S ± Not Significant

The table shows that the socio demographic variables religion and occupation of mother had shown statistically significant with post test level of self-esteem at p<0.001 and p<0.05 level among adolescents in the experimental group and the other socio demographic variables had not shown statistically significant association with the post test level of self-esteem among adolescents in the experimental group.

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A STUDY ON FINANCIAL PERFORMANCE OF ICICI BANK

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ABSTRACT

The liberalized policy of the government of India permitted entry to the ICICI in banking; the industry has witnessed a generation of private players. The focus of these banks has always been centered on the customer. But to satisfy the customers and to operate other activities, the bank must have sufficient funds in its accounts. That's why, in the present paper special emphasis has been laid down on the financial analysis of the bank by using different research and statistical tools. The study adopts an analytical and descriptive research design. The data for a period of 5 years i.e., 2015-2016 to 2019-2020 have been collected from the annual reports of the bank. Seven ratios are selected for the study and made an analysis of selected ratios using growth rate, average, cumulative annual growth rate and other statistical techniques. The study revealed that the bank performing progressively till 2020, later identified a various ratio analysis.

KEYWORDS: Banking, balance sheet, descriptive research design, profit & loss A/c, ratio analysis.

1. INTRODUCTION

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and general revenue. The term is also used as a general measure of a firm's overall financial health over a given period. The financial performance identifies how a company generates revenue and manage its assets, liabilities, and the financial interests of its stakeholders.

2. STATEMENT OF THE PROBLEM

Banking is a vast subject many economic researchers have studied and focusing their attention on various spheres of banking. The studies available on the performance of commercial banks are minimal in number. There are still many unexplored areas that need to be explored. In this context "Financial analysis of ICICI Bank" is selected for the present study.

3. OBJECTIVE OF THE STUDY

- To analyze the financial statement.
- To simplify and summarize a long array of accounting data and make them understandable.
- To forecast and prepare the plans for the future.
- To reveal the trend of costs, sales, profits and other important facts.

4. RESEARCH METHODOLOGY

Research methodology is the study of research method and rules for doing research work. To do a research it is necessary to anticipate all the steps, which must be undertaken. If the project is to be completed successfully proper steps in research process has to be followed. It consists of interrelated activities such as identifying the research problems, description of research design, sources of collecting data etc. Despite of overall progress poor capital base, inefficient organization structure, declining profitability and growing non-performing assets had become the major hindrances in the development during post nationalization period. The study will be conducted with reference to the data of ICICI Bank.

SOURCE OF DATA

Secondary Data are those data which are already collected and stored and which has been passed through statistical research. In this project, secondary data has been collected from following sources: -

- Annual Report
- Articles in Journal, Magazines.
- Books
- Other material and report published by company



Period of study: This study covers a period of ten years, i.e., from 2015-2016 to 2019-2020.

5. TOOLS AND TECHNIQUES USED

The following statistical tools were applied to analyze the statistical data collected from calculation of financial performance analysis;

- Current Ratio
- Quick Ratio
- Net Profit Ratio
- Operating Profit Ratio
- Eps (Earning Per Share)
- Return On Assets
- Return On Equity

6. REVIEW OF LITERATURE

- Singh A.B., tondon p. (2012) examined the financial performance of SBI and ICICI BANK. Public sector and private sector respectively. The study found that SBI is performing well and financially sound than ICICI BANK but in context of deposits and expenditure ICICI bank has better managing efficiency than SBI.
- Kaushik Mukerjee (2006) in his paper “CRM in Banking-Focus on ICICI Bank’s initiatives”

had focused on CRM in Banking and its applications in ICICI Bank. The CRM in ICICI is being used for targeting customers, sales, consistent interface with customers, etc. ICICI Bank has managed to focus better on customers by undertaking a serious approach that has enabled it to manage its operations effectively. It included better targeting of customers; higher share of wallet; more effective channel strategies; database marketing, etc. The bank is able to evaluate customer usage pattern through CRM data warehouse. New products are developed through extensive customer profiling. Through CRM, ICICI is able to manage its data centrally.

- Khan M. Y. Recently ICICI Ltd. (along with two of its subsidiaries, ICICI Personal Finance Services Ltd. and ICICI Capital Services Ltd.) has been merged with ICICI bank Ltd; effective from May3, 2002. The erstwhile DFI has thus ceased to exist. Its main objective is to encourage and promote private ownership of industrial investment and expansion of investment markets.

7. TABLES

Table Showing Return on Asset Ratio (%)

Particulars	2020	2019	2018	2017	2016
Net Income	7,930.81	3,363.30	6,777.42	9,801.09	9,726.29
Total assets	10,98,365.15	9,64,459.15	8,79,189.16	7,71,791.45	7,20,695.10
Return on assets	0.72	0.34	0.77	1.26	1.34

(Source: Annual report of ICICI Bank)

INERPRETATION

From the above table 4.6 the Return on Assets (ROA) in the year 2016 was 1.34, in the year 2017 it increased to 1.26, in the year 2018 it decreased to 0.77, in the year 2019 it suddenly decreased to 0.34, and in the year 2020 it level of ROA was increased almost double to the previous to 0.72. It indicates that the company generated from invested capital has been reducing to 0.72% this indicates company is slow in converting its investment into profit. Icici banks tend to have a large number of total assets on their books in the form of loans, cash, and investments. After the year 2019 higher the return, the more productive and efficient management is in utilizing economic resources. Below you will find a breakdown of the ROA formula and calculation.

8. SUGGESTIONS

- To increase the profit of bank, bank should decrease their operation expenses and increases their income.

- To increase its liquidity, bank should keep some more cash in its hands instead of giving more and more advances.
- Introduce quality consciousness and standardization of the work system and procedure.
- Make manager competitive and introduce spirit of market-orientation and culture of working for customer satisfaction.

9. CONCLUSION

The ratio analysis and trend analysis and balance sheet show that ICICI bank’s financial position is good. Bank’s profitability is increased at high rate. Bank’s liquidity position is fair but not good because the bank is invested more in current assets than liquid assets. As we all know that ICICI bank is on the second position among all the private sector bank of India in all area but it should pay attention on its profitability and liquidity. Banks’s position is stable.



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FINANCIAL PERFORMANCE ANALYSIS OF ACC CEMENT LIMITED

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ABSTRACT

This study main focus on to analysis the overall performance of the ACC Cement limited to analysis the overall performance with the help of financial statement with shows all incomes and expenditure and assets and liabilities in the format of profit & loss and balance sheet this statement is analysed it is called performance it help the firm take any decision and to get knowledge about their function of financial aspects in business .The method used to analysis their performance was ratio analysis (liquidity ,profitability and activity)and schedule changing in working capital this method help to analysis their performance of the company.

KEYWORDS: *Financial performance analysis, Ratio Analysis, ACC cement Company*

INTRODUCTION

Cement is a global commodity, manufactured at thousands of local plants. The cement industry in India is dominated by around 20 companies, which account for almost 70 per cent of the total cement production in India. Because of its weight, cement supply via land transportation is expensive, and generally limited to an area within 300 km of any one-plant site. The industry is consolidating globally, but large, international firms account for only 30 per cent of the worldwide market. China is the fastest growing market today. Because it is both global and local, the cement industry faces a unique set of issues, which attract attention from communities near the plant, at a national and an international level. Financial analysis refers to the purpose of examining minutely and evaluating the financial condition and the results of operations (i.e., the performance) of a business enterprise. In other words, financial analysis is an in-depth study of a firm's financial position (i.e., capital, assets and liabilities of a firm at a point of time) and its financial performance (i.e., income, profitability, solvency, earnings per share, dividend payout etc..) over a period.

Ratio analysis is a technique of analysis and interpretation of financial statement. It is the process of establishing and interpreting various ratios for helping in making certain decisions. It is the only means of better understanding of financial strengths and weakness of a firm. There are various ratios, which can be calculated from the information given in the financial statements, but in the study, we select the appropriate data and calculate only a few appropriate ratios. The important ratios taken are liquidity ratio, long-term solvency activity and profitability ratios.

The industry is consolidating globally, but large, international firms account for less than 30per cent of the planet Wide Market. Cement industry in India was under full control and supervision of the government. However, it got relief at a large extent after the economic reform. But government interference, especially in the pricing, is still evident in India. In spite of being the second largest cement producer in the world, India falls in the list of lowest per capita consumption of cement with 125 kg. The reason behind this is the poor rural people who mostly live in mud huts and cannot afford to have the commodity. Despite the fact, the demand and supply of



cement in India has grown up. In a fast developing economy like India, there is always large possibility of expansion of cement industry. The economic development strategy chosen by India after the Second World War was very identical to China's industrialization and the dominance of the state in the economy. Development was regarded synonymous with industrialization and industry was concentrating mainly on basic goods like steel and machinery. Private capital was not seen as an effective measure for development and it was assumed to have a inclination towards monopolization. Because of that, state control was considered to be effective. The chosen development strategy was one of import substitution. Development policies included licensing of industrial activity, the reservation of key areas for state activity, controls over foreign direct investment and interventions in the labour market.

REVIEW OF LITERATURE

Ghosh and Maji 1983 attempted to examine the efficiency of working capital management of Indian cement companies during 1993 to 2002. They calculated three index values-performance index, utilization index and overall efficiency index to measure the efficiency of working capital management, instead of using working capital management ratios. By using regression analysis and industry norms as a target efficiency level of individual firms, they tested the speed of achieving target level of efficiency by individual firms during the period of study and found that some of the sample firms successfully improved efficiency during these years.

Nair N.K (1991)15 , "Productivity in Indian cement industry" has studied the productiveness aspect of Indian cement industry. This study emphasized that cement, being a construction material, occupied a strategic vicinity in the Indian economy. This study has revealed that during 1990-91, the industry had an installed potential of sixty million tones with a manufacturing of forty eight million tones.

Chandrasekaran N 1993, "Determinants of profitability in cement industry" has recognized that profitability was decided as structural and behavioral variable and the other factors which have an impact on profitability were firm's growth and capital turnover ratio by estimating determinants of profitability in cement industry.

STATEMENT OF THE PROBLEM

The problem of the analysis is to decide the economic ratio evaluation and to earn enough profit to control the proper functioning of ACC limited.

Comparative evaluation technique determines the profitability and financial overall performance of a business through comparing economic statement of or extra time period. The performance of business is measured by using the quantity of profit earned. The more the profit the more efficient is the business. An attempt has been made to analyze the financial performance of the business of ACC limited.

OBJECTIVES OF THE STUDY

- To study the financial performance of ACC limited.
- To analyze the profitability, liquidity, operational, activity ratio of the company
- To analyze the financial growth of the company during study period

RESEARCH METHODOLOGY

This research depends wholly on secondary data which is exclusively related with report of cement industry.

Source of Data

The study is based on secondary data. Data regarding industries is collected from the annual report of selected industries with the help of websites, books, journals, magazines.

Period of Study

For the purpose of a analysis industry period taken is 2014-2019.

Tools Used

In this topic only various types of ratios are used. such as

- Liquidity ratio
- Profitability ratio
- Solvency ratio
- Activity ratio

LIMITATIONS OF THE STUDY

- The result is applicable only to cement industry.
- The study is based on the secondary data and the limitations of using secondary data may affect the results.
- These limitations are minimized and explicitly stated wherever need attention.



FINDINGS

Findings of Rio Analysis

- Current ratio of the company was lowest in the year 2015- 2016 & highest in the year 2019-2020
- Liquid ratio of the company was lowest in the year 2015-2016 & highest in the year 2019-2020
- Absolute liquid ratio was lowest in the year 2016-2017 & highest in the year 2019-2020
- Gross profit ratio was highest in the year 2015-2016 & lowest in the year 2019-2020
- Net profit ratio was lowest in the year 2015-2016 & highest in the year 2019-2020
- Operating profit ratio was highest in the year 2015- 2016 & lowest in the year lowest in the year 20192020
- Expense ratio was highest in the year 2015-2016 & lowest in the year 2019-2020
- Proprietary ratio was lowest in the year 2015-2016 & highest in the year 2019-2020
- Fixed asset turnover ratio was lowest in the year 2015- 2016 & highest in the year 2019-2020
- Current asset turnover ratio was highest in the year 2015-2016 & lowest in the year 2019-2020
- Total asset turnover ratio was highest in the year 2017- 2018 & lowest in the year 2019-2020
- Stock turnover ratio was lowest in the year 2015-2016 & highest in the year 2019- 2020
- Debtors turnover ratio was lowest in the year 2015-2016 & highest in the year 2017-2018
- Working capital turnover ratio was highest in the year 2015-2016 & lowest in the year 2019-2020

SUGGESTION

- The company is able to pay short term obligations and the company has enough quick The company's day-to-day cash management need to be improved
- The gross profit margin may be improved by increasing sales price or decreasing cost of sales.
- The company has to improve the efficiency at converting sales into actual profit to enjoy the best profit
- The company should try to keep the costs lower and increase its sales 55
- The company has to maintain change in working capital at a moderate level as

decrease in or great increase at change in working capital is not good.

- Assets to pay for its current liabilities, so the company has to maintain this further.

CONCLUSION

The analysis of financial performance of ACC Limited is stated in this report. The liquidity position of the company is satisfactory hence the company can meet out its short term liabilities and have enough quick assets to pay off current liabilities and future it has to maintain day to day cash management to increase the absolute liquid ratio alone. However the profitability position of the company is not much better, that the company has to decrease the cost of production and keep the cost lower or increase sales price and also need to improve the efficiency in converting sales into actual profit. The change in working capital should be increased without decreasing and has to maintain the change in working capital at a moderate position.

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A STUDY ON IMPACT OF ATTRACTION OF MOBILE GAMES TOWARDS COLLEGE STUDENTS WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT

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ABSTRACT

A mobile game is video games played on a feature phone, smart phone/tablet, smart watch, PDA, portable media player or graphing calculator. The study is undertaken in Coimbatore city with the sample size of 120 respondents for the period of 4 months December 2019 to march 2020. The study based on primary data and secondary data and questionnaire method is used to collect the data. Many statistical tools like percentage analysis, ranking etc. have been used. It is suggested that mobile games should only be played for entertainment and it should not be made as necessary. Finally, the study revealed that mobile games are impinging negative results in students.

KEYWORDS: *questionnaire, entertainment, negative impact*

1. INTRODUCTION

A game is structured form of play, usually undertaken for enjoyment and sometimes used as an educational tool. Games are distinct from work, which is usually carried out for remuneration, and from art, which is more often an expression of aesthetic or ideological elements. However, the distinction is not clear-cut, and many games are also considered to be work (such as professional players of spectator sports or games) or art (such as jigsaw puzzles or games involving an artistic layout such as Mahjong, solitaire, or some video games).

2. STATEMENT OF THE PROBLEM

Video game playing may be associated with vision problem. Extensive viewing of the screen can cause eye strain, as the cornea, pupil, and iris are not intended for mass viewing sessions of electronic devices. Using video games for too long may also cause headaches, dizziness, and chances of vomiting

from focusing on a screen. Study look at students with powerful behaviour records in the past and who finished a measure of characteristic aggressive, results found that students, who reported playing more violent games in their middle and high school time, occupied with more forceful behaviour, moreover, the time spent playing violent games in the past related to lower grades in school, which is a cause of dissatisfaction for some students.

3. OBJECTIVES OF THE STUDY

- ❖ To identify the students opinion on using mobile games.
- ❖ To study about the behaviour of student while playing games.
- ❖ To study about the psychological factors that influences student playing mobile games.
- ❖ To identify the factors that determines the attitude of student towards mobile game.

4. RESEARCH METHODOLOGY

Source of data	Both Primary and Secondary data
Sampling design	Convenient sampling technique
Area of the study	Coimbatore city
Sampling size	94 respondents



5. STATISTICAL TOOLS

- ❖ Percentage analysis
- ❖ Rank analysis

6. REVIEW OF LITERATURE

MeihuaQian, Karen R. Clark,(2016)Game-based learning and 21st century skills have been gaining an enormous amount of attention from researchers and practitioners. This paper examines the most recent literature in regard to game-based learning and identified 29 studies which targeted 21st century skills as outcomes. The findings suggest that a game-based learning approach might be effective in facilitating students' 21st century skill development.

AndreMarchand Thorsten Hennig-Thurau (2013)²³In the past twenty years, the video game industry has established itself as a significant contributor to the global entertainment economy. Compared to more established entertainment industries such as movies and music, limited scholarly research in marketing has addressed the processes that create value for companies and consumers in the context of video games which are now available on multiple devices (e.g., consoles, portables, mobile devices) and through multiple channels (e.g., retail and online). The authors therefore develop a conceptual framework of value creation through video games, highlight important findings from extant research in marketing and other disciplines, and apply the framework to derive future research opportunities.

7. TABLES

1. PERCENTAGE ANALYSIS

Health issues faced	Frequency	Percent
Poor eye sight	41	34.2
Insomnia	16	13.3
Head ache	46	38.3
Obesity	5	4.2
Anger	12	10.0
Total	120	100.0

INTERPRETATION

From the above table, it is clear that out of 120 respondents, 34.2 % of the respondents choose poor eye sight, 13.3 % of the respondents choose insomnia,

38.3 % of the respondents choose head ache, 4.2 % of the respondents choose obesity and 10.0 % of the respondents choose anger. Majority 38.3 % of the respondents choose head ache.

2. RANK ANALYSIS

Problems Faced While Playing Games

Factors	Mean	Rank
Health issues	4.233	2
Battery heat	3.95	4
Hanging	3.783	5
Game addiction	4.717	1
Negative effect	3.633	6
Time wastage	4.1	3
Skipping meals	3.583	7

INTERPRETATION

That above table shows that factors of students behaviour in facing problems while playing mobile games. There are many problems for the students and other people who are using the mobile

phones and playing mobile games for long time period. The factor "Skipping meals" has been ranked as 7, the factor "Battery heat" has been ranked as 4, the factor "Hanging" has been ranked as 5, the factor "Game addiction" has been ranked as 4,



the factor. “Negative effect” has been ranked as 5, the factor “Time wastage” has been ranked as 6, the factor “Skipping meals” has been ranked as 7.

8. SUGGESTIONS

- ❖ The parents must spend some time with their children to develop relationship and communication.
- ❖ Usage of Smartphone by students should be minimized.
- ❖ Mobile games should be played only for entertainment and it should not be made as necessary.
- ❖ The mobile games should used only for minimum period of time.
- ❖ The students must use premium version apps.
- ❖ Mental counselling may be adopted in case of necessity.

9. CONCLUSION

This study conducted from Coimbatore city, impact of mobile games among the college students is quite danger in their growth. It is clear that the survey shows it should be rectified and corrected. It is sure there are some advantages in this field. But when the disadvantage is dominating the advantage, it is danger. So, the control cannot be exerted by parents alone. It should be self-controlled. If the parents spend their time with children, it may divert their mind from these addictions. So, the mobile games are impinging negative results in students.

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A STUDY ON CUSTOMER SATISFACTION TOWARDS GOOGLE PAY WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

In today – world, smart phone has become an important an area of one’s lifestyle. Mobile users can nowadays use their Smartphones to form money transactions or payments by using applications installed within the phone. There are several mobile wallets which give these services. Mobile wallets are digital versions of traditional wallets that somebody would carry in their pocket. they supply payment services through which the individuals/business can receive /send money via mobile devices. this paper throws strike the customer satisfaction towards the e-wallet services provided by Google pay. It focusses on the services provided by Google pay wallet and its satisfaction level.

KEY WORDS: *online payment , Mobile Transaction*

1. INTRODUCTION

India being developing country has weak infrastructure, low PC penetration, developing security protocols and consumer reluctance in rural sector. But many banks are offering e-banking services. during a study conducted by Rao and Prathima (2003) it had been revealed that India still has great distance to travel in online banking services as compared to other countries. E-banking is becoming popular in India (Gupta,1999; Dasgupta ,2002).Google pay may be a digital wallet platform and online payment system developed by Google to power in-app and tap-to-pay purchases on mobile devices, enabling users to form payments with Android phones, tablets or watches. Users within the us and India also can use an IOS device, albeit with limited functionality.

2. STATEMENT OF PROBLEM

From the traditional times banking plays an important role within the development of nation also because the individual. For the

stable financial condition , banking helps to a better extent. Nowadays the life sort of the people is getting too busy and thus significance of gpay are increasing day by day. they need no time to visits banks for the aim of depositing or accepting cash, also as for the opposite services provided by the bank. Gpay services offer tons of benefits to the folk that they will pay bills, and may take and provides cash at anytime anywhere without visiting a bank. These services helps customer in engage in their own works and avoids additional expenses like travelling cost etc. Gpay is ansoftware which may be used for the aim of paying mobile bills, Electricity bill, and insurance.

3. OBJECTIVES OF THE STUDY

- * To understand the customer satisfaction level with Gpay.
- * To spot the preference of the consumers towards Gpay.
- * To work out the factors influencing to settle on digital payment in Gpay.



4. RESEARCH METHODOLOGY

Area of study	Coimbatore city
Sampling size	120 response
Sampling techniques	Convenience method
Sources of data	Primary data and secondary data
Proposed Tool	<ul style="list-style-type: none"> • Simple percentage analysis • Likert skills

5. REVIEW OF LITERATURE

Saviour F (2019) in his study analysed the varied factors which results in consumer satisfaction. The researcher's main focus is on the satisfaction level of paytm users. Researcher has identified the explanations for dissatisfaction of consumer towards the ewallet services and also the researcher made an effort to seek out suggestions to enhance the paytm services. Study concluded that the majority of the respondents are satisfied with the services of paytm, due to simple access, increased usage of smart phone and cashless economy.

Abhijit and Harmeet (2017) studies about the Gpay usage by smartphone users and also attempts to analyse the varied obstacles faced by the Gpay users. A structured questionnaire was distributed to 230 smartphone users but only 151 responses were valid and thought of for data analysis. The researchers have used the descriptive method so as to urge the statistical results. The findings conclude that Gpay has got to work upon the payment gateway to enhance the transaction efficiently and to figure upon transaction time, discounts and offers.

6. TABLE

Table Showing Satisfaction Level of G Pay Users In Hotel Booking

S. No.	Satisfaction Level	No. of respondents	Likert Scale	Total Scale
1	Highly satisfied	55	3	165
2	Satisfied	34	2	68
3	Neutral	31	1	31
	TOTAL	120		264

CALCULATION OF LIKERT VALUE

$$\text{Likert value} = \frac{\sum (FX)}{\text{Total number of respondents}} = \frac{264}{120}$$

$$\text{Likert value} = 2.2$$

7. FINDINGS

- 79% of the respondents are within the age bracket of 18-28 years.
- 52% of the respondents are male.
- 56% of the respondents have completed degree.
- 57% of the respondents are student belongs to occupation.
- 34% of the respondents monthly income is below Rs. 20,000.
- 48% of the respondents said that friends as they're getting information about online payment.
- 41% of the respondents said that some times they're using online payment through digital wallet.
- 32% of the respondents said that Paytm as alternate of Google Pay.
- 43% of the respondents said that cash transfer is that the purpose to use Google Pay the foremost.
- 58% of the respondents said that Rs.3,000-Rs.5,000 as their average transaction value using in Google Pay.
- 40% of the respondents said that preferred towards utility and bill payment.
- 53% of the respondents said that highly preferred towards recharge.
- 45% of the respondents said that highly preferred towards money transfer.
- 45% of the respondents said that highly preferred towards buying movie tickets.
- 42% of the respondents said that point saving is that the reason for first preference for Google Pay.
- 40% of the respondents said that cash back as keeping in mind when use Google Pay.



- 36% of the respondents said that discount / offer is that the level of usage towards Google Pay.
- 62% of the respondents said that popping upon the Google Pay irritating them.
- 36% of the respondents said that agree towards towardstoo much time consumption to line up.
- 38% of the respondents said that neutral towards involves danger of losing money.
- 35% of the respondents said that disagree towards can't be used for international transaction.
- 39% of the respondents said that neutral towards data cost in Google Pay.
- 66% of the respondents said that highly satisfied towards recharge in Google Pay.
- 60% of the respondents said that satisfied towards bill payment in Google Pay .
- 46% of the respondents said that satisfied towards shopping in Google Pay.
- 46% of the respondents are satisfied towards transfer of excellent .
- 42% of the respondents said that 6 months to 1 year as the amount of using Google Pay.

8. SUGGESTIONS

Google pay users should have the notice to use the appliance securely. Google pay users must take care as and once they use the appliance. The users should weigh the varied payment wallet apps with all and that they should select the proper app for his or her usage. The app must be redesign supported the feedback getting from the users. It must ensure to use user friendly by everyone.

9. CONCLUSION

The study was accomplished to explore consumers' perception, awareness and willingness to interact in employing a Google pay to exchange the content of their physical wallets. With the increased aggression of internet connectivity Google pay has led to a rise on the amount of Google pay users. Google pay is getting more and more trending among the buyer. The convenience and simple use as gained a credit to mobile wallet and it are often concluded that they're going to be an incredible growth in adoption of G-pay within the forthcoming years. Customers are increasingly given the opinion or are being asked to provide Services for themselves through the use of Self-Service Technologies. it's Important for providers to know the notice level of consumers particularly the

kids since they're the audience for each new technology. This study also proves that each Respondent has smart phone with them so it's easy for the service Providers to capture this age bracket . This study has made an effort to seek out out the customer satisfaction level towards google pay in Coimbatore city.

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A STUDY ON CUSTOMER SATISFACTION TOWARDS ONLINE SHOPPING WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Marketing is the management process responsible for identifying, anticipating and satisfying customer requirements profitable. According to American Marketing Association (AMA), marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organisational goals. The major objective of marketing is to satisfy the human needs and wants. A market is defined as the sum total of all the buyers and sellers in the area or region under consideration. Market is a place where two or more parties are involved in buying and selling. The two parties involved in a transaction are called seller and buyer. The seller sells goods and services to the buyer in exchange of money. There has to be more than one buyer and seller for the market to be competitive. Supermarkets and hypermarkets are two different types of shopping stores where customers purchase their groceries, food, and other household supplies. This research is aimed to assess the satisfaction level of customers towards hyper market. The location of the study is Thoothukudi. Researcher adopts simple random sampling method to collect data from respondents. The sample size of the study is 75. Simple statistical tools are used by the researcher for data analysis.

KEY WORDS: Shopping under a proof, customer satisfaction, Expectation of price and quality.

1. INTRODUCTION

The supermarkets largely concentrate on selling food related products and a supermarket is a large departmentalized retails establishment offering a relatively a broad and complete stock of dry groceries, perishable produce, and daily products, supplemented by a variety of convenience non-food merchandise and operated primarily on a self-service basis. It considerably smaller in size as compared to hypermarket. The supermarket offers relatively less assortments but focus on specific product categories. It is usually situated near a residential area in order to be convenient to consumers.

2. STATEMENT OF THE PROBLEM

The raising trend of supermarket made monthly shopping of every consumer, an easy task. Inspire of

this, supermarket suffer few losses and acquisition (eg: Kannan departmental store & reliance). In this regard the research has made the study to find answers for following questions:

1. Are the customer satisfied with the strategies of supermarket?
2. What are the factor influencing customer to carry out shopping at supermarket?
3. Is there any problem faced by customer while visiting supermarket?

3. OBJECTIVES OF THE STUDY

- To study the satisfaction level of consumers
- To study about the Factors influencing the consumer.

4. RESEARCH METHODOLOGY

Source of Data	Primary and Secondary data
Sampling techniques	Convenient sampling
Sample size	120 respondents
Tools and Techniques	Simple percentage, Ranking scale analysis, Likert scale analysis.



6. REVIEW OF LITERATURE

Dr. T Chellammal(2020)¹, This study understand the people perception, so they provide all things in an attractive manner. The researcher concludes that most of the customers are satisfied with the product variety, quality and price of the goods provided by the hyper market in Thuthukudi.

Nguyen Thi Thu Thuong (2016)³, In this study is the positioning constructs, product price, personal interaction and convenience have a positive influence on customer satisfaction thrice as the highest impact on the super market, followed by the

product. The least positive influence is caused by the positioning constructs, product price, personal interaction. It could not be proved in the study that service and physical appearance positively influence customer's satisfaction.

Anuradha and manohar (2014)¹³, shopping moves behind stability, duty and operations preparing other uses and satisfaction. Two dimensions of understood value of shopping includes usability oriented and enjoy welfare shopping.

7. TABLE

• SIMPLE PERCENTAGE ANALYSIS

Table Online Shopping In This Pandemic Situation

S. No	Categories	No. Of Respondents	Percentages (%)
1	Yes	17	58.3%
2	No	31	25.8%
3	May be	19	15.8%
TOTAL		120	100%

INTERPRETATION

The table here shows will the respondents shop in online during this pandemic situation 58.3% of people have responded as yes, 25.8% have responded as no and 15.8% have responded as maybe.

INFERENCE

The majority (58.3%) of respondents of people have responded a Yes.

• LIKERT SCALE ANALYSIS

Table State Your Level of Satisfaction Regarding Supermarket Based On the Following Criteria

S. No	Factors	No. Of Respondents	Likert Scale Value (X)	Total Scores (Fx)
1	Highly satisfied	53	5	65
2	Satisfied	50	4	200
3	Neutral	13	3	39
4	Dissatisfied	3	2	6
5	Highly dissatisfied	0	1	0
TOTAL		120		510

Likert scale= (fx)/ Total number of respondents

$$=510/120$$

$$=4.25$$

INTERPRETATION

The Likert scale value is 4.25 which is greater than the mid-value (3) which shows that the customers are satisfied with the supermarket.

- ✓ The most of respondent shave selected all under same roof.
- ✓ The majority of respondents of people are purchasing provisions and groceries.

8. SUGGESTIONS

- ✓ The most of respondents gained knowledge from family.

9. CONCLUSION

The supermarkets are good further they have to face competition from other supermarkets However, in view of the long standing services of supermarket



are builds up a good image among the customer and it has done a remarkable business for past few years. The researcher had the opportunity to meet the consumer groups of people during the period of research work and come across many experience the study helped the research to know about the position of market potential for services provided by supermarkets. Not only grocery fashions retail are good retail from the city for the supermarket..

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A STUDY ON FACTORES INFULENCING PASSENGER PURCHASE INTENTION TOWARDS APP BASED CAB SERVICE IN COIMBATORE CITY

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ABSTRACT

India's transport sector is large and diverse. Transport system is the foundation stone of economic infrastructure. Transport system is known as the key symbol of civilization. Due to huge population and the changing life style of people and their progress, people choose luxuries well-being and their transportation needs has been sustained on the convenience, speed and safety of the modes. Among various transportation mode cab service gained popularity because of its advantage of door to door service and now because of technological advancement customers were able to book cabs at competitive price in just one click using their smart phones. These App based cab services were having tremendous potential for growth in densely populated countries like India where parking is major problem because of space crunch as well as public transports are over covered during peak hours.

KEYWORDS: Transport system, App based cab services.

1. INTRODUCTION

A call taxi also taxi or cab, is a type of vehicle for hire with a driver, used by a single passenger or small group of passengers often for a non-shared ride. A call taxi conveys passengers between locations of their choice. In modes of public transport, the pick-up and drop-off locations are determined by the service provider, not by the passenger, although demand and share taxis provide a hybrid bus/taxi. According to Government of India regulations, all call taxi is required to have a fare meter installed. However, enforcement by authorities is lax and many taxis operate either without fare-meter or with defunct ones. In such cases, fare is decided by bargaining between the customer and driver. Call taxi face stiff competition from auto rickshaws in some cities. The normal taxi's which carry one or more passengers travelling to destination either in route to the final destination, or nearby the final destination. The passengers are charged according to the number of people with different destination. Call taxi use has been reported to be more frequent during day rather than night hours and during weekdays rather than weekends

2. STATEMENT OF THE PROBLEM

The app based cab services is the need of the hour as it became an essential part for most the working professionals especially women. This particular system has made life easy for most of the passenger. The main focus of this study is to find the primary reason why the user prefer the app based cab instead of other public and private transport services. Also the study throws light on the passenger intention towards the choosing of the particular brand based on certain criteria's. Finally it also gives valuable inputs to the service providers

3. OBJECTIVE OF THE STUDY

- To find out the passenger intention towards the app based cab service in Coimbatore city.
- To find the level of convenience and comfort with the app based cab services.
- To know their option about the tariff system and promptness of service.
- To ascertain the passenger view toward the driver behaviour and courtesy.
- To provide inputs to enhance the service to delight the passenger.



4. RESEARCH METHODOLOGY

Source of Data	Primary data
Period of Study	2019 – 2020
Area of Study	Coimbatore
Sample Size	75

5. STATISTICAL TOOLS

- Simple Percentage Analysis
- Likert Scale Analysis

6. REVIEW OF LITERATURE

Rajendra Aklekar (Oct 27, 2010) with the increasing number of private vehicles on the roads the demand for yellow and black taxis has reduced. In 20th century there were no crowds, no one was in hurry. The roads were wider and no traffic jams at all. Today, it the scenario is total opposite to the one before. The fares top the list of complaints, followed by drivers" rude behavior, charging excess luggage fare, and taking longer routes to reach a destination.

Saritha Rai (Jan 15, 2015). Cabs growth in India is tremendous, the case of Delhi Rape in the cab which resulted in booming the market for its competitors. Data reveals that Ola was offering 60,000 cabs in 52 Indian cities and has aggressively announced that it plans to touch 200 cities by end-2015. Of the 52 cities Ola currently operates in, 34 new cities were added in the past three months, assuming the pace of its expansion. On an average

200,000 rides daily, offers 60,000 cabs and says it has made "entrepreneurs" out of 70% of its drivers. In other words, 70% of its drivers are cab owners who operate as independent businessmen, unlike many large-fleet Indian cab firms like Meru which operate their own taxis with hired drivers.

Geeta Kesavaraj (2013), reveals that "As global competition grows, communication and technology channels open up new markets, and products and services are translated into a wide array of choices for our audiences, companies must work harder than ever to gain and keep customers at a competitive cost. In this new age, companies must focus their strategy, energy, processes and budgets to improve their knowledge and commitment to customers. It is imperative that companies make it their priority to use innovative Customer Relationship Management methodologies and to know how to implement customer centric strategies, together with the use of adequate technologies to aid in this process"

7. TABLE

Showing the Distribution of Frequently Use in the Cab Respondents

S.No	Categories	No. Of Respondent	Percentage
1.	Daily	12	16
2.	Once in a three days	6	8
3.	Once in a week	10	13
4.	Once in a month	21	28
5.	Rarely	26	35
	Total	75	100

The above table shows 16% of the respondents 8% of the respondents ones in the three days 13% of the respondents are the once in a week 28% of the respondents are once in a week 33% of the

respondents are rarely using the cab service in the study

Hence, Majority (35) of the respondents are using rarely using in the cab

LIKERT SCALE ANALYSIS

Table Shows the Level of Respondents towards the Satisfaction on Performance of OLA Cab

Factors	No of Respondents	Likert Scale Value	Total Score
Highly Dissatisfied	7	5	35
Dissatisfied	5	4	20
Netural	21	3	63
Satisfied	21	2	42
Highly Satisfied	21	1	21
	75		181



Liker scale = $\Sigma(fx) / \text{total number of respondents}$
Hence, The likert scale value 2.413 which is greater than mid value to which show the customer are satisfied with performance of ola cab

5. Ashish Avinash Khade and Dr. Vaibhav Patil, "A Study on Customer Satisfaction level of ola and uber paid taxi service with special reference to pune city" volume 8, issue 8, Aug 2018

8. SUGGESTIONS

1. The young crowd is the major source of the market for the call taxi service provider.
2. The tariff rate are bit higher as fell by the customer, especially during the peak however they can follow complete piecing slavery and it should be made clean to passenger.
3. The infrastructure facilities are to be uncovered of option ride now, as it leads to displeasure at time.
4. THE Customer are also to be educated with the advance booking facility and privilege of booking in advance instead of opting rid now as it leads to displeasure at time.
5. Some of the common suggestion provided by the customer from the survey are lie proper dress code and clear save payment , discount ,dress count etc.,

WEBSITES

1. www.olacabs.com
2. www.smdroptaxi.in
3. indianjournalofmarketing.com

9. CONCLUSION

The study reveal the customer satisfaction about the cab service. in the factors they are importance in section of the service provider, tariff comfort service quality and customer care rendered. This will help the service provider as a important input to understand about the customer satisfaction about their service and to what extended they are with us by utilizing our service. The finding depicts the exact replica of the customer's mindset and levels of satisfaction towards a service provider operating the cab service in the Coimbatore city. Appropriate suggestions we provided considering fact and feasibility. In the market players out come in to account and act. It is sure tom create fullest satisfaction to the customer. This will also help to service provider to fulfil the customer expectations that fetches the goodwill and develop their brand images in the market.

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4. *A study on user's satisfaction of call taxi service in erode city* volume 6, issue 2, feb 2019



STUDENTS' LEARNING STYLES IN THE CLASSROOM AND IT'S IMPORTANCE TO EDUCATORS IN THE TEACHING AND LEARNING PROCESS: AN OVERVIEW

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ABSTRACT

This article discusses the various learning styles of students in the teaching and learning process in the classroom. Among the learning style models discussed in this article are such as Dunn and Dunn learning style model, Kolb learning style model, Felder Silverman learning style model, VAK learning style model, Visual, Audio, 'Read and Write' and Kinesthetic (VARK) learning style model, Honey and Mumford learning style model, Selmes learning style model. Each learning style model has its strengths and weaknesses. This, a good understanding and mastery of a learning style will allow teachers to help implement teaching and learning strategies that students are interested in according to their tastes. Furthermore, it can increase the interest and effectiveness of students in the teaching and learning process as well as improve the academic achievement of students.

KEYWORDS : Learning Styles, Teaching, Classroom, Educators, Academic Achievement

INTRODUCTION

Style means the way, manner and behaviour practised by students during the learning process (Joginder Singh, 2012). Learning, on the other hand, refers to the actions taken by students to seek new knowledge and experiences during the learning process (Harackiewicz & Hulleman, 2010). According to Dunn and Dunn (1982), learning style refers to the way each student focuses, processes and stores new information. Learning style can also be defined as a change that occurs consistently involving the mind and physical to reflect a change in the form of action (Mohd Razimi Husin, Abd. Aziz Shukor & Ahmad Jazimin Jusoh, 2011). Learning style can be seen when an individual can exhibit a new change either

in the form of understanding or skills as well as used while studying.

Each student has his or her own style of receiving, processing, storing and recalling new information (Prabha, 2013). In short, learning style is the pattern, way or style of learning of an individual to parse, process, interpret the information obtained according to personal desires, wants and suitability. According to Kharb, Samanta, Jindal and Singh (2013), learning style is the method chosen by an individual to collect, process, interpret, organize and analyse information. Since the learning style is considered important in the process of becoming and succeeding students, then an educator must know the appropriate learning styles for students so that the



objectives of teaching and learning can be achieved successfully. Proactive teachers will strive and ensure that teaching and learning are implemented based on learning styles that fits in with the abilities of students (Mohd Razimi Husin, Abd. Aziz Shukor & Ahmad Jazimin Jusoh, 2011).

In fact, every student has their own learning style. An individual's learning style differs from one style to another according to the student's inclinations (Mohd Nasaruddin Mohd Noor & Anuar Ahmad, 2014). Learning styles also differ according to the subjects studied by the students and the teacher's teaching (Sohaina Mohd Salleh, Maimun Aqsha Lubis & Aisyah Sjahrony, 2017). Differences in learning styles affect the learning process and the ability to store information to students. The goal of learning style is not only to add knowledge and gain information, but even broader than that. Identifying and exploiting suitable learning styles can increase one's potential in a more effective learning process.

Suitable and accurate learning style is a determinant towards working on knowledge effectively. Teaching and learning processes that are in line with students' learning styles can result in a more proactive and constructive learning process (Ovez & Uyangor, 2016). The selection of a suitable learning style is important for students to achieve the main goals of the subject and in turn can improve their academic achievement. The study of Graf, Liu and Kinshuk (2010), proved that student achievement will increase and show positive development if the learning style that is suitable to the capacity ability of students is given priority in the learning process. The way an individual chooses to approach a learning situation is able to affect their performance and achievement. According to Chambers in Nasirah Ismail, Norhasliza Abdullah and Siti Zubaidah (2010), students should use suitable learning styles as their strengths in academics.

Students' academic achievement is often associated with motivation, learning style and teaching methods (Maizatul Wahidar & Mohd Roslan, 2011). Accordingly, students need to be exposed to effective and appropriate learning styles to enhance academic achievement excellence. According to Donald (2010), students who are introduced to the right learning style have produced more positive results than before. Learning style is also a guide and motivator to a student's learning process. Learning style is as well defined as the method or way a person learns to acquire knowledge. Furthermore, learning style refers to a learning approach that a student is interested in to acquire knowledge (Cheong, Chong & Ling, 2012). The information received will be stored in mind to be used when required.

Moreover, learning styles are said to be subjective. There is no such thing as the best learning style or any poor learning style. It all depends on the

ability and suitability of the student based on his own choice. None of the learning styles exhibit the best way than the others. Similarly, there is no single learning style that can improve students' achievement in lessons (Azizi Yahya & Syazwani Abdul Razak, 2010). There are learning styles that are suitable for certain students while for other students the style might not be suitable. If a student excels in his or her academic achievement, it is likely that the learning style he or she chose and practised suits him or her. Meanwhile, if a student does not excel in his or her academic, it is likely that the learning style he or she practised does not suit him or her (Meor Ibrahim Kamaruddin & Assaadah Mohamad, 2011). Such students have to find a learning style that suits their nature so that it really has a positive effect on them.

VARIOUS LEARNING STYLE MODEL

The learning style has several models pioneered by some of the people figures. Among the models of learning styles are such as Dunn and Dunn learning style model, Kolb learning style model, Felder Silverman learning style model, VAK learning style model, Visual, Audio, 'Read and Write' and Kinesthetic (VARK) learning style model, Honey and Mumford learning style model, Selmes learning style model and so on.

(a) Dunn and Dunn Learning Style Model

Dunn and Dunn (1982) learning style model is based on three main principles. First, the learning style depends on a student's ability and capability of learning. Secondly, the style of learning depends on a student's ability and predilection. Thirds, environmental factors, learning materials and learning methods influence a student's learning style. The learning style is also often referred to the learning environment of the student in the most optimal way.

Furthermore, Dunn and Dunn's model of learning style stated that if the learning process is adapted according to the student's learning style, the level of achievement of the student can be improved (Dunn & Dunn, 1982). According to Meor Ibrahim Kamaruddin and Assaadah Mohamad (2011), Dunn and Dunn's model of learning style stated that a student's learning style relies heavily on five main stimuli namely environment, emotion, sociology, physical and psychological. Below is the explanation of the five stimuli.

(i) Environment

The learning style that is influenced by environmental factors usually plays a direct role in the learning of a student. Among the environmental factors such as sound, light, climate and techniques as well as strategies have indeed influenced the learning style of the student. There are students who



are more comfortable learning in a quiet atmosphere while others are comfortable learning in a sound atmosphere such as listening to songs. Referring to the temperature factor, there are students who can study in a bright light, cool atmosphere and some are vice versa (Dunn & Dunn, 1982).

In addition, a student's personality influences the learning style. Student's personalities which are introvert and extrovert also influences their learning style. According to Chong, Chong and Ling (2012), students with introvert traits prefer formal learning styles while extroverts prefer informal learning styles. Introvert students are more individual in that their learning environment requires special tables and chairs and is not interested in sharing them with other students. While the students who are extrovert, they can learn anywhere despite the unconducive atmosphere of the place. Learning environment based on different environments usually create different learning styles among students. The preparation of certain learning environments for all students might not be appropriate. The techniques and learning strategies between one student and another student are indeed different (Meor Ibrahim Kamaruddin & Assaadah Mohamad, 2011).

(ii) Sociology

Sociology also influences a student's learning style. The sociological aspects are largely dependent on the students themselves and followed by the influence of peers, groups, family and so on. There are students who are more confident in themselves and prefer to study alone and do not like to learn in groups or pairs. They are more confident in studying alone. On the other hand, there are students who like to learn with others in the form of groups. They are more interested in two-way learning which is more convincing. Group learning is encouraged as to make it easier for students to discuss and exchange views. Group learning method is more effective as it allows information to be stored longer in the students' memory (Meor Ibrahim Kamaruddin & Assaadah Mohamad, 2011).

(iii) Emotion

Emotional factors equally influence a student's learning style. A student's success depends heavily on intrinsic and extrinsic motivation. Intrinsic motivation does not require external stimulation while extrinsic motivation depends on external factors to react. Meeting physiological and psychological needs becomes the primary goal of intrinsic motivation while extrinsic motivation is aimed at obtaining rewards in the form of existing objects or compliments (Meor Ibrahim Kamaruddin & Assaadah Mohamad, 2011).

(iv) Physical

Senses are essential in helping us to remember the information we learn during the learning process. Physical elements. Such as perception, food, time and movement also influence a person's learning style. Through visual and audio elements, students gained a lot of information and experiences of their own. When the visual element of the student is more dominant, then the student tends to actively study using charts, pictures, graphs, videos, mobile phones, computers and so on. The usage of visual elements as teaching aid can speed up students' understanding and become a driving force for students to be interested in a subject in an effort to improve academic achievement level (Meor Ibrahim Kamaruddin & Assaadah Mohamad, 2011).

Auditory elements in return enable students to learn in a relaxed environment where they can understand the contents of the lesson while listening to songs. This situation is considered as an advantage to the students because not all students can learn in this environment. Meanwhile, kinesthetic elements allow students to learn by using the sense of touch. Through touch and feel towards learning materials can improve the student's understanding. Kinesthetic learning atmosphere can also give stimulation and thus motivate them to continue learning level (Meor Ibrahim Kamaruddin & Assaadah Mohamad, 2011).

(v) Psychology

Students who implement a learning style based on psychological factors will emphasise reflective, impulsive, global and analytical. Reflective students are always mindful and take their learning process seriously. Usually they will think carefully and decide after considering the information is logical and thoughtful. While impulsive students do not make any preparation for the learning process which causes rarely successful in the lessons. Analytical students love to learn in a comfortable atmosphere such as bright environment, adequate learning equipment and no noise disturbance from the surrounding. While students who practice a global learning style prefer to learn in a romantic environment without a complete learning equipment (Meor Ibrahim Kamaruddin & Assaadah Mohamad, 2011).

The discussion above shows that, Dunn and Dunn's model of learning style is a learning process that gives priority to processing and remembering information about the content of the lesson.

b) Kolb Learning Style Model

The basic learning style of Kolb's model divides student learning style into four categories which is imaginative and creative, analytical theory, practical and dynamic intuitive (Kolb, 1984). Kolb's learning style and experiential learning cycle also



divides the learning style into four cycles, namely concrete experience, reflective, abstract concepts and active experiments (McLeod, 2017). At the concrete experience level, students gain experience based on new situations they face. In the second stage, which is the reflection stage, students make observations and then reflect on new experiences that they have experienced. This experience is important for the formation of their understanding that leads to the formation of concepts. At this stage, a conflict between experience and understanding occurs (McLeod, 2017).

At the third stage, which is the abstract concept stage, new ideas will be formed as a result of reflection. At this stage, the formation of new ideas can be modified with existing abstract concepts in the student. The formation of these formed abstract concepts (analysis) and generalisations (conclusions) will be used in the next stage. Finally, at the active experimental stage, students are able to apply their ideas to a wider environment to see real situations. At this stage, they are also able to test hypotheses formed in future situations to produce more concrete new experiences (McLeod, 2017).

(c) Felder-Silverman Learning Style Model

Felder Silverman's model learning style is divided into four categories namely active and reflective, concrete and intuitive, visual and verbal as well as structured and global (Muruganandam & Srinivasan, 2016).

(i) Active and Reflective

An active student likes to learn something in groups and likes to explain the content of the lessons to friends so that it is easy to remember something. Meanwhile, students who are reflective like to study alone and only after that explain to friends (Muruganandam & Srinivasan, 2016).

(ii) Concrete and Intuitive

Concrete students are practically fact- and procedure- oriented. They are more realistic and concerned with accuracy in a work. However, intuitive students are conceptual, innovative and theory oriented. They are more innovative and value creativity in a job (Muruganandam & Srinivasan, 2016).

(iii) Visual and Verbal

Visual students are fond of visual presentations such as diagrams and flow charts because it is easy to remember facts through sight. On the contrary, verbal students like written and oral presentations because it is easy to remember facts through listening (Muruganandam & Srinivasan, 2016).

(iv) Structured and global

Students of structured character learn linearly and in detail. The learning process is described in an orderly manner and they like to focus on one thing only. On the other hand, students who are global in nature learn holistically. The learning process is described as a whole and they like to relate one thing to another (Muruganandam & Srinivasan, 2016).

(d) Visual, Audio and Kinesthetic (VAK)

Learning Style Model

The figures who introduced the learning style of VAK model consisted of Fernald, Keller, Orton, Gillingham, Stillman, Montessori and others. Basically, the learning style of the VAK model consists of three components of learning style practised by students which are visual learning style, auditory learning style and kinesthetic learning style (Norul Haida Reduzan, Robe'ah Joseph & Guidance Hasim, 2016).

Through visual learning styles, students learn using words and do not require detailed verbal explanations. The use of visual pictures, acting and video is used as the main learning source for the understanding of the students. While in auditory learning style, students use the auditory senses to obtain and remember information. Students read aloud and lip movements can be clearly seen. While the kinesthetic learning style involves learning activities that involve physical movement and students actively participate because there are group activities followed by audio (Norul Haida Reduzan, Robe'ah Joseph & Guidance Hasim, 2016).

(e) Honey and Mumford Learning Style Model

Honey and Mumford's model learning style focusses on the experiences gained as a result of learning things. Linking new knowledge with old knowledge is part of Honey and Mumford's model learning style which allows students to draw their own conclusions. Honey and Mumford learning style model emphasises aspects of one's attitude and behaviour based on activist, reflective, theoretical and pragmatic learning style (Benny Hendriana, Budi Wayulu, Rochmad & Mulyono, 2019).

(i) Activist learning style

Activist attitudes and behaviours emphasise a person's curiosity to something new for satisfaction. Students who are activists like to do challenging activities to gain new experiences and knowledge. Quick action to do something without thinking long causes them not to focus on the impact of such actions. Living independently, sociable, friendly and fond of social life are among the advantages of activist learning style practitioners (Benny Hendriana, Budi Wayulu, Rochmad & Mulyono, 2019). Daily



activities often hover around him of her alone without disturbing others.

(ii) Reflective learning style

Reflective learning style emphasises the experience gained by a student. Reflective learning style involves three phases, namely observation, thinking and reflection. Usually students will not make a decision in a hurry, however they are even more careful so that mistakes do not happen. Furthermore, the decisions of which have been taken or to be taken will always be reflected again. Students will also collect relevant information thoroughly to make accurate analysis based on the experience gained. Their observation of an event or action is more profound and focused. In short, students who practise reflective learning style tend towards subjects with a lot of practical use (Benny Hendriana, Budi Wayulu, Rochmad & Mulyono, 2019).

(iii) Theoretical learning style

Students who practise the theoretical learning style have logical thinking along with rationale. Theories and models are the main pillars of their thinking. Theoretical learning style practitioners are less creative and make their own predictions based on the condition of the environment dependent on theory. However, conclusions or summaries made have strong evidence based on the analysis made use (Benny Hendriana, Budi Wayulu, Rochmad & Mulyono, 2019).

(iv) Pragmatic learning style

Like theoretical learning style, students who practise pragmatic learning style also adhere to logic and rationality in the learning process. Their results are based on observations and strong evidences. The comparison process is also often practised by students to obtain accurate and logical answers. Typically, male students practise pragmatic learning style more compared to female students because the learning process is correlated with logic at the level of mind thinking (Benny Hendriana, Budi Wayulu, Rochmad & Mulyono, 2019).

(f) Visual, Audio, 'Read and Write' and Kinesthetic (VARK) learning style model

The VARK learning style model was introduced and designed by Neil D. Fleming as a result of his own observations on learning problems in New Zealand. His observations found that there were problems in teachers' delivery and students' acceptance during the teaching and learning process which affects the performance of students. VARK learning style model presents four learning styles based on individual differences that are visual learning style, audio learning style, read-write

learning style and kinesthetic learning style (Allen, Scheve & Nieter, 2011).

(i) Visual learning style

Visual learning style has four inputs that are necessary and suitable to be applied which are teaching involving teachers, textbooks, teaching aids and writing. The teaching process is an important aspect that capable of describing things to be explained. The textbooks used focuses more on colourful drawings to attract the interest of the students. Meanwhile, the teaching aids are in the form of videos, charts, posters, pictures and slides. Finally, the writing is presented in various forms and colours as a way of attracting the attention of students (Allen, Scheve & Nieter, 2011).

(ii) Audio learning style

The style of audio learning emphasises voice and sound learning. Students will learn through listening such as listening to lectures from their teachers, receiving explanations and so on. In order to achieve the audio learning style, students need to attend to school and follow the teaching and learning process as scheduled. Discussion methods among students are encouraged in the learning process (Allen, Scheve & Nieter, 2011).

(iii) Read-write learning style

The learning style of reading-writing uses notes, prioritises facts, and encourages the search for information among students. Using words, vocabulary and building structured sentences are given priority. Moreover, explanations in the form of essays are considered to be the best learning process (Allen, Scheve & Nieter, 2011).

(iv) Kinesthetic learning style

Kinesthetic learning style uses all five senses which are sight, sound, smell, taste and touch. Learning activities such as the use of laboratory, study visits and so on are applied in this type of learning. The application of learning theory in real-world situations and practical training often colour the world of kinesthetic learning style. Learning techniques such as learning by the method of trial and error and experimental methods are also implemented to solve a particular problem in learning (Allen, Scheve & Nieter, 2011).

In conclusion, there are three basic principles in the learning style of the VARK model. First, master the level of mastery of the lesson contents. Secondly, the level of motivation increases when learning in a conducive and complete learning environment. Third, a new training should be given as an encouragement and inspiration in the students' learning.



(g) Selmes Learning Style Model

Selmes learning style model is measured using the instrument of 'Learning Inventory in Schools'. The four learning styles of the Selmes model consist of surface learning style, depth learning style, organised learning style and hard work learning style.

(i) Surface learning style

Surface learning style is dependent on students. According to the surface learning style, students will only respond when directed. This learning style indicates that students will only perform lessons after being instructed by others. Usually the student depends or waits for instruction from the teacher. As a result of relying too much on the instruction of teacher, the student is usually unable to understand the lessons he or she is learning in depth. Student will only memorise the facts they learned and consider those facts have no any connections between one and another. As a result, students have no ability to associate a fact or concept with another fact or concept (Selmes, 1987).

(ii) Depth learning style

The style of depth learning relates to the student's curiosity towards the knowledge they are learning. Students will have a high interest in the content of the lesson. Students also look for implied facts to relate to the concepts they are studying. In short, students will show interest in the content of the lesson and love to understand it deeply. As a result, students can easily link new information with existing experiences and knowledge. Students using depth learning style will continue to try to understand deeply the content of the lessons learned (Selmes, 1987).

(iii) Hard work learning style

The hard work learning style goes against the surface learning style. Students who apply the hard work learning style will strive hard to learn the contents of the lesson without the instruction from other parties especially from teachers. In order to achieve excellence in education, students will work on their own and will explore knowledge to improve their understanding of the lesson contents. Students will also make an effort themselves to make notes, review, create additional exercises and will try to solve their learning problems on their own (Selmes, 1987).

(iv) Organised learning style

In an organised learning style, students usually manage their own learning time. Distinctive learning time planning usually has a positive impact on their academic achievements. This situation will encourage students to compose their lessons regularly

and systematically. Furthermore, students are able to formulate their answers in order before they can answer any questions during the examination (Selmes, 1987).

Selmes learning style model classifies that the learning style is the driver of students' learning. In fact, it can guide students to know how to learn appropriately and motivates them to engage in their learning actively and effectively. According to Habsah Mohamed and Arsmir Amir (2014), Selmes learning style model (1987) introduces a rather different perspective by focusing on the difference in learning style possessed by each individual. The learning style of Selmes model (1987) emphasises the concept of self-reliance learning, elements of competing among students, the production of quality work, hard work and organised learning. Besides that, Selmes model also discussed in depth on training aimed at encouraging students to be independent and not just expect and rely on others.

CONCLUSION

There are various positive effects on teachers and students on understanding a good learning style. A good mastery of a learning style will enable the teacher to help explain the learning strategies that students are interested in according to their taste. On the teachers' part, teachers can plan and implement suitable teaching strategies so that the students can understand them easily. Teachers can play a role in helping students to engage themselves in exploring learning strategies that are suitable and effective for themselves (Selmes, 1987). This can be concluded that students' failures in academic field may be avoided if the appropriate learning style is fully identified and practised. In this regard, the teaching and learning approach should use the approach of learning style models that is in line with the students' abilities and interests. The appropriate learning style model can help students to learn and understand learning approach, help to enhance self-strength and identify situations that can help towards the effectiveness of learning (Morrow, 2011).

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A STUDY ON FINANCIAL PERFORMANCE OF PRICOL LIMITED

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ABSTRACT

The term 'Analysis of Financial Performance' also referred to as 'analysis of preparation of financial statements' refers to the method of determining financial strength and weakness of the firm by establishing relationship between the things of the balance sheets and therefore the profit and loss account. The study used 5 years of Pricol limited secondary data and main objective is to seek out the financial performance of the industry which will be helpful in find the expansion aspects. The varied tools like liquidity ratio, profitability ratio, return on investment ratio, Solvency ratio and other performance ratios were used for the study. The suggestions reveal the Management should make the right use of current assets to extend the profit of the company and thus maintain consistent profitability performance. Finally, the study reveals there was gradual rise and fall within the growth of the company during the study period it's satisfactory.

KEYWORDS: financial strength, cash flow, growth aspects

1. INTRODUCTION

Financial Performance is subjective measure of the accountability of an entity for the results of its policies, operations and activities qualified for an identified period in financial terms. Financial statements are formal records of the financial activities and position of a business, person or other entity. Financial statements are the report prepared by an organization Management to present the financial performance and position at the time. A general purpose set of the financial statement usually includes a balance sheet, income statement, statement of owner's equity and statement of cash flows. Financial statements are often audited by government agencies, accountants, firms etc., to make sure accuracy and for tax, financing or investing purpose. Finance is taken into account as life blood of commercial enterprise. The success and survival of any organization depends upon how efficiently it's ready to raise funds as and when needed and their proper utilizing the funds.

2. STATEMENT OF THE PROBLEM

To determine the right income and to earn sufficient inflow to run a PRICOL Limited. And to optimal amounts of cash account receivable and inventories that a firm should prefer to maintain and to supply the possible result, firms should keep no unproductive assets and will finance with firm to take a position briefly term assets and finance short-term liabilities.

3. OBJECTIVE OF THE STUDY

- To analyse the liquidity and profitability position of the PRICOL LIMITED.
- To view the growth of the Pricol limited by comparing the past year's balance sheet.
- To evaluate financial performance through ratio analysis of PRICOL.



4. RESEARCH METHODOLOGY

Source of Data	Secondary data
Period of Study	2015-2016 to 2019 – 2020
Framework of analysis	Financial Statements
Tools and Techniques	Ratio analysis

5. STATISTICAL TOOLS

The tools used for this study on financial performance are ratio analysis and common size balance sheet. The data from the reports are analysed by using various tool and techniques with a view to evaluate the performance of the company. For analysing the financial performance of Pricol limited the subsequent tools are used,

Ratio Analysis

- Liquidity Ratios
- Profitability Ratios
- Solvency Ratio
- Activity Turnover Ratios

6. REVIEW OF LITERATURE

Deepika S (2017) the object of the present study is to know the profitability and solvency and the future value of the business concern during the period of five years from 2012-2016. For this purpose, to fulfil the objectives Ratio Analysis and Correlation has been used for the calculation of the company. Finally, the

suggestions are offered to control the fluctuating in price changes.

Dr. Richa Singhal (2017) Unless the working capital is planned, managed and monitored effectively, company cannot earn profits and increase its turnover, Also, it helps in removing bottlenecks. Although very studies have been conducted on analysing the working capital management of Indian companies but very few studies have measured the inventory management of top FMCG companies of last decade.

Vinoth K (2017) this study shows the financial management process, the initial stage in the process is a financial or review of the firm. Financial analysis is essentially the first step towards gaining a sound understanding of a business. Financial analysis is the evaluation of a firm's past; present anticipated future financial performance and firm condition. Its objectives are to identify the firm's financial strengths and weakness and to provide the essential foundation for financial decision making and planning.

7. TABLE

Year	Current Ratio	Liquid Ratio	Absolute Liquid Ratio	Gross Profit Ratio (%)	Return On Investment Ratio (%)	Total Asset Turnover Ratio (%)
2015-16	1.05	0.74	0.06	105.56	8.93	1.84
2016-17	0.97	0.61	0.06	105.34	3.16	1.14
2017-18	0.95	0.58	0.09	93.46	2.93	0.98
2018-19	0.86	0.67	0.06	94.28	0.06	0.88
2019-20	0.84	0.45	0.07	96.17	6.92	1.20

- In current ratio, the highest growth rate was 1.05 in the year 2016 and the lowest growth rate was 0.84 in the year 2020.
- In liquid ratio the highest growth rate was 0.74 in the year 2016 and the lowest growth rate was 0.45 in the year 2020.
- In absolute liquid ratio, the highest growth rate was 0.09 in the year 2018 and the lowest growth rate was 0.06 in the year 2016, 2017 and 2019.
- In gross profit ratio, the highest growth rate was 105.56 in the year 2016 and the lowest growth rate was 93.46 in the year 2018.
- In return on investment ratio, the highest growth rate was 8.93 in the year 2016 and the lowest growth rate was -6.92 in the year 2020.
- In total assets turnover ratio, the highest growth rate was 1.84 in the year 2016 and



the lowest growth rate was 0.88 in the year 2019.

8. SUGGESTIONS

- Management should make the proper use of current assets to increase the profit of the company.
- The company is losing its customers due to insufficient maintained of current assets.
- Better, company will borrow loan to increase the working capital.
- The profit of the company needs to be raised through increasing productivity and decreasing expenses.
- The company has the right to take the right strategy to regain the net profit in the upcoming years.

9. CONCLUSION

This project is aimed to analyse the financial performance of “PRICOL LIMITED” for the period 2016-2020, however for any origination increasing the profitability will be the main objectives and so it is the same for this company too. Thus, the findings and recommendation which will be helpful for the development and improvement of the company. Finally, to conclude that, the “PRICOL LIMITED” company’s performance is well and there is a gradual decrease in the working capital of the company.

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A STUDY ON FINANCIAL PERFORMANCE OF TATA MOTORS

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ABSTRACT

The present study deals with the research of A STUDY ON FINANCIAL PERFORMANCE OF TATA MOTORS. Through financial analysis companies can review their performance in the past years which identifying their performance and weakness and improving them. This study was carried under the period of six years 2015-2020 of balance sheet and profit and loss account. This research is done with the help of secondary data gathered from the annual report of TATA MOTORS Company. Hence it is necessary to evaluate the financial performance to know whether the companies stand in the market and how they can improve their future development and financial stability of the company.

KEYWORDS: Financial performance, Ratio analysis, profitability ratio.

1. INTRODUCTION

Finance is considered to be very important function of every business organization. Financial performance is an important aspect of long-term stability, profitability and liquidity of the company. Financial position of the financial statement is profit and loss account and balance sheet of the company. Ratio analysis is a systematic use of ratio to determine the current financial condition. Ratio analysis is one of the techniques of financial analysis where it used for evaluating the financial condition and financial performance.

2. STATEMENT OF THE PROBLEM

The problem is to be determining the financial ratio analysis and to earn sufficient profitability to manage the proper functioning of the TATA motors every

effort has been made to conclude and suggest for the best performance of the TATA motors.

3. OBJECTIVES OF THE STUDY

- To interpret the analysis and the trend of the financial results.
- To use various ratios liquidity ratios to find out the activity of assets and liabilities and to find the liquidity position of the company.
- Standardize financial information comparisons.
- Compare performance against other firms or industry standards.
- Compare performance with past performance.

4. RESEARCH METHODOLOGY

SOURCE OF DATA	SECONDARY DATA
PERIOD OF STUDY	2015-2020
FRAME WORK OF ANALYSIS	FINANCIAL STATEMENTS
TOOLS AND TECHNIQUES	RATIO ANALYSIS



5. STATISTICAL TOOLS

The following statistical tools were applied to analysis the statistical data collected for calculation of financial performance analysis:

RATIO ANALYSIS

1. Liquidity ratio
2. Profitability ratio
3. Solvency ratio
4. Activity ratio

6. REVIEW OF LITERATURE

Dr. P. Ganapathi 2020 TNPL Karur district, ISSN (PRINT) 2393-8374 online volume-s issue 6 2018, The author had made attempt to determine the financial performance of TNPL KARUR DISTRICT is to identify and categories the financial ratio into a small number of latent variables to represent a compact view of financial performance for a specific time period. Factor analysis extracted three factors solvency asset and cash flow management.

Dewan M.d. Zahurul Islam A study on financial performance of SMEs 2020, VOL XXIX, N3,587-593. A study on financial performance SMEs Baes on this evidence, we suggest that entrepreneurial efficacy will be able to help entrepreneurs energize to work hard with a dedicated focus on their goals, thus maintain their financial performance even the current pandemic.

Dr. M. Ravichandran 2016 A study financial performance of force limited VOLUME 2 issue 11 April 2015 ISSSN online 2349-6010. The author made study on financial performance analysis of force motor limited it can be concluded that the anticipated inputs to this study to the firms is to assist strategic thinkers pay attention to the appropriate actions, that apply learnt and strong effect on them automobile performance.

7. FINDINGS

- The current ratio of the company was highest in the year 2015-2016 and the lowest ratio is 0.85 for both 2018-2019 & 2019-2020. Which the standard value of ratio is 2. Which this company is not belong to the standard value of current ratio.
- The liquid ratio of the company was highest in the year 2014-2015 and the lowest value of ratio is 0.58 in the year 2018-2019 & 2019-2020.
- Absolute liquid ratio of the company was highest in the year 2016-2017 and the lowest in the year 2018-2019.

- The gross profit of firm maintains the ratio in higher level and increase the sales. The highest value of ratio in the year 2015-2016&216-2017 and the lowest in the year 2018-2019&2019-2020.
- The net profit of the company was highest in the year 2014-2015 and the lowest value of ratio in the year 2018-2009&2019-2020.
- The return-on-investment ratio determine the highest value in the year 2014-2015 and the lowest belong to minus of value of ratio to the company in the year 20182019&2019-2020.
- Equity ratio of the company was highest value in the year 2015-2016 and the lowest value of the company in the year 2019-2020.
- The inventory ratio analysis with purchasing policy of the company for investment in inventory and the highest value of ratio in the year 2017-2018 and the lowest ratio in the year 2019-2020.
- The fixed asset turnover of the company was highest value of ratio in the year 20172018 and the lowest value of ratio in the year is 2019-2020.it determine with the sales contribution.
- The total asset turnover ratio of the company was highest in the year 2014-2015 and the lowest in the year 2019-2020.

8. SUGGESTIONS

- Tata motors can have a reasonable gross profit to ensure adequate coverage for operating expenses.
- Tata motors can retain their profitability position by making efficient employment of their available resources.
- The company can invest more in current assets than in working capital.
- The company can improve the net profit by reducing interest and financial charges.
- The company may maintain its planning and control techniques in order to regulate and optimize the use of cash balance.
- The company should try to keep the costs lower and increase its sales.

9. CONCLUSION

The study on financial performance analysis of TATA MOTORS is stated in this report, this company has revealed the great deal of their financial aspects for six years. However, the profitability position of the company is not much better, that the company, has to decrease the cost of production and



keep the cost lower or increase the sales price and also need to improve the efficiency in converting sales into actual price.

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SCHOOL HEADS' LEADERSHIP QUALITIES IN REINFORCING TEACHERS' PERFORMANCE OF PROFESSIONALISM IN THE PRIVATE SCHOOLS IN PILA, LAGUNA

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ABSTRACT

This study was on school heads' leadership qualities in reinforcing teachers' performance of professionalism in private schools in Pila, Laguna aimed to help the human resource development plan in private schools in Pila, Laguna. This study was descriptive in design involving a total of 74 respondents representing school heads, teachers, and parents or guardians of school children in order to answer the 5 basic problems through digital calculations in determining the weighted mean and standard deviation scores as basis for empirical testing of H_0 at 5% level by means of r formula.

It was concluded that the more extensive were the school heads' leadership qualities in terms of educational stylishness, strategic smartness, and residentiary gracefulness, the greater was the reinforcement on teachers' professionalism as to attested autonomy, affirmative, and assertive accomplishment, though the same shied out strengthening school children's basic learning skills with respect to literacy, numeracy, and sensory as well as non-correlated sectorial supports from private school, LGU, and DepEd officials.

The following recommendations are respectfully endorsed for resolute actions: (1) for school heads' extensiveness of their leadership qualities may coordinate with Laguna Private Schools and Administrator's Association, Inc (LAPRISADA) as well as LACASA Incorporation, a non-profit housing agency, with programs to help households achieve financial stability, find a new home, prevent foreclosure, find affordable rentals, get home repair assistance, immigration counseling, and neighborhood engagement in times like when pandemic crisis is still alive and kicking not only in the locale of Pila but the entire province of Laguna; (2) there may be sustainability in the school heads' highly extensive leadership qualities in order to highly reinforce further teachers' professionalism; (3) increase the parameter of grade school children's basic learning skills by following the UNICEF' five tips to help keep children's education on track while they're staying home; (4) the fact that COVID-19 is nationwide and worldwide pandemic crisis, concerted efforts may be made possible by private school, LGU and DepEd officials to sustain support to private schools in their survival; and (5) studies of the same nature and of wider magnitude may be conducted based on based on DepEd Order No. 88, s. 2010, and thus strengthen further the findings of this present study.

INTRODUCTION

The entire planet earth is facing inevitable turmoil as conditioned by horrible attack of pandemic without end limit in treacherously wiping out humanity from its surface without exemption. Relatively, worse comes to worse, the crisis is exacerbating pre-existing education disparities by reducing the opportunities for many of the most vulnerable children, youth, and adults as greatly felt among those living in poor or rural communities on both nationwide and worldwide. And thus, situation of this nature is inescapable and bound to happen for educational leaders to face squarely

without retreat, and otherwise their surrender will surely happen the complete closure of schools affecting theoretical knowledge and skills impacting poignantly all citizens without exoneration as special treatment and privilege by depriving them in the cultivation of their cultural refinement as the very foundation of quality living geared towards the apex of the highest degree of human civilization wherein at the end, the next generation will suffer from unreasonable degree of life comfort upon their survival of no end limit invisible and treacherous attack of pandemic crisis on the local and global scales.



In the words of wisdom by Perobelli (2021), from doctors' weary of seeing patients die to relatives who lost their loved ones, as nurses without much ballyhoo or ado, have volunteered for COVID vaccine trials in one of the world's worst-affected countries in the hope their quiet heroism will save lives. Brazil by then Latin America's largest country has become a major testing ground for vaccines because of the scale of its outbreak, which has seen more than 7.3 million people infected and over 180,000 killed by the coronavirus. Relatively, "I witnessed many lonely deaths here: patients who could not say goodbye to their relatives and relatives who could not say goodbye to their loved ones; and this global effort of volunteers in search of a vaccine will be remembered and will go down in history," she said. "I think when we look to this period, one legacy will be how everyone – the scientists, the health workers, everyone – fought to stop the loss of lives to COVID-19...Children will study this in school to understand the fight and difficulties we lived. Toward this end, coronavirus-related disruption can give educators time to rethink what leeway the technology can step into the breach, and will continue to play a key role in educating future generations. In a world where knowledge is a mouse-click away, the role of the educator must change too."

No less than Seale (2021) who puts across between lines that learning in the time of the coronavirus pandemic requires practical solutions to the inherent equity issues of distance learning. With this issue at stake, educational equity has been already elusive. How can leaders forced to consider distance learning that no child is left behind. Children are regularly left behind even in wake of the total lockdowns of all educational institutions due to the horribly invisible attack of the said bubonic plague. Every student does not succeed as many actually lack a legit opportunity to do so. And when it comes to the educational equity race, the ever-elusive finish line makes it feel like that they are not on a track, but on a treadmill wherein at the end of the day, they suffered from boring routine with unpleasantness as indeed the hardest part to escape.

The coronavirus pandemic is revealing new layers of inequity that may end up setting us back even further. Education leaders are tackling the unexpected challenge of providing distance learning as the primary mode of instruction for weeks, months, and possibly the remainder of the school year. How can school systems that struggle to deliver equitable results in a standard brick and mortar setting overcome the added challenges inherent in distance learning?

In the local scenario, the issue raised put on the shoulders of school heads and teachers as baggage load as they are legally obligated to meet the educational needs of children in times like this when all schools are totally closed across the country due to the pandemic crisis.

RESEARCH METHODOLOGY

This chapter presents the research design, research locale, population and sampling technique, research instrument, data gathering procedure, and statistical treatment of data as essential methodological tools designed to resolve the basic problem areas of investigation advanced in this study with final closure.

RESEARCH DESIGN

Descriptive method has been found with valid and reliable accuracy in providing answers to the five (5) basic problems posited in Chapter 1. Thus, a design of this nature was handled with full of assurance in the completion of information and data as shared by the target respondents during the final day of distribution and retrieval of the major instrument which were intended for this kind of investigation.

The foregoing disclosure has been strengthened by Zohrer (2015) that descriptive design brings into open the volumes of cumbersome research maladies by sharing the researchers the strategic attack to the basic problem areas of investigation with utmost success than failures for final closure of any kind of research undertakings.

Anchored on the above authoritative assurance, the researcher followed intensely the footprint of the genuine research endeavor by giving final closure to the basic problems raised with the end in view that this kind of investigation did not tantamount to exercise of futility in terms of human, material and research timeframe investments.

RESULT

From the above synopsis, the above problem areas were answered with final closure by means of the following salient findings:

1. With respect to the level of school heads' leadership qualities in terms of educational stylishness by means of modern pedagogic or latest approach to teaching as very extensive (GM=4.9); strategic smartness in preparing or showing quick intelligence or ready mental capability geared toward the prudent and well thought key decision as very extensive (GM=4.45); and residentiary gracefulness in their dignified and distinguishable refinement in words and actions as very extensive (GM=4.39).



2. Relative to the level of teachers' professionalism as to attested autonomy through maintenance in advocating self-decision proven as highly reinforced (GM=4.36); affirmative accountability to have positive influences as an act of being responsible as highly reinforced (GM=4.45); and assertive accomplishment as forceful with self-confidence in carrying out decisions as highly reinforced (GM=4.35).

3. With reference to the level of school children's basic learning skills relative to literacy in the acquirement of competence or knowledge in their ability to do something well as strengthened (GM=4.16); numeracy for their arithmetical comprehension of the fundamental arithmetical operations like addition, subtraction, multiplication, and division as highly strengthened (GM=4.21); and sensory as highly strengthened (GM=4.31) pupils' skills by stimulating their five senses ranging from touch to taste, sight, sound and smell in order to acquire movement and balance.

4. As to the level of sectorial supports relative to private school officials' assistance as highly associated (GM=4.41) to their higher job satisfaction through career growth and development in teaching as the most noblest profession in life as well as collaboration to implement large-scale initiatives for common educational end; LGU officials' support was associated (GM=4.13) to privation of education in Pila, Laguna; and DepEd officials' support as highly associated (GM=4.26) to managing effectively and efficiently the Philippine system of basic education in the third class municipality of Pila, province of Laguna.

5. Speaking of the relationships established between and among the given variables when taken singly and in combination as basis for human resource development plan in private elementary schools in Pila, Laguna, significantly low relationship between school heads' leadership qualities and school children's primordial basic learning skills in terms of strategic smartness and literacy skills ($r=0.299$), and educational stylishness and numeracy skills ($r=0.357$) which rejected H_0 at 0.05 probability. However, low and no significant relationship between school heads' leadership qualities and school children's primordial basic learning skills in terms of educational stylishness and literacy skills ($r=0.209$), and strategic smartness and sensory skills ($r=0.232$); negligible and no significant relationship existed between school heads' leadership qualities and school children's primordial basic learning skills as evidently shown between residentary gracefulness and basic literacy skills ($r=0.119$), educational stylishness and numeracy skills ($r=0.170$), educational stylishness and sensory skills

($r=0.000$), and residentary gracefulness and sensory skills ($r=0.113$); negatively negligible relationship existed between school heads' leadership qualities and sectorial corroborative assistance with reference to educational stylishness and private school officials' support ($r=-0.145$), strategic smartness and private school officials' support ($r=-0.108$), and residentary gracefulness and private school officials' support ($r=-0.001$); negatively negligible relationship between school heads' leadership qualities and sectorial assistance relative to educational stylishness and LGU officials' support ($r=-0.071$), strategic smartness and LGU officials' support ($r=-0.059$), and on equal footing with residentary gracefulness and LGU officials' support ($r=-0.081$); positively negligible relationship between school heads' leadership qualities and sectorial assistance relative to educational stylishness and DepEd officials' support ($r=0.045$), strategic smartness and DepEd officials' support ($r=0.055$), and similarly with residentary gracefulness and DepEd officials' support ($r=0.059$); low and negligible correlations were prevalent between teachers' professionalism and school children's basic primordial learning skills in terms of assertive accomplishment and sensory skills ($r=0.288$), attested autonomy and literacy skills ($r=0.116$), affirmative accountability and literacy skills ($r=0.117$), assertive accomplishment and literacy skills ($r=0.138$), attested autonomy and numeracy skills ($r=0.085$), affirmative accountability and numeracy skills ($r=0.143$), attested autonomy and sensory skills ($r=0.007$), and affirmative accountability and sensory skills ($r=0.053$); and negatively and positively low and negligible correlations were extensively pervasive between teachers' professionalism and sectorial support in terms of assertive accomplishment and private school officials ($r=-0.224$), assertive accomplishment and LGU officials ($r=-0.217$), attested autonomy and private school officials ($r=0.104$), affirmative accountability and private school officials ($r=-0.080$), attested autonomy and LGU officials ($r=0.092$), affirmative accountability and LGU officials ($r=-0.120$), attested autonomy and DepEd officials ($r=0.188$), affirmative accountability and DepEd officials ($r=0.072$), and assertive accomplishment and DepEd officials ($r=-0.053$). which at the outmost accepted H_0 at the foregoing probability alpha 5% level of significance.

DISCUSSIONS

From the above result, the following discussions were drawn:

1. School heads' leadership qualities based on R.A. No. 9155 were very extensive in their governance



of private elementary schools in Pila, Laguna in terms of educational stylishness by means of by means of modern pedagogic or latest approach to teaching as enlivened by strategic smartness in preparing or showing quick intelligence or ready mental capability geared toward the prudent and well thought key decision with residentiary gracefulness in their dignified and distinguishable refinement in words and actions.

2. School heads' leadership qualities highly reinforced teachers' professionalism as carriage of their attested autonomy through maintenance in advocating self-decision which ultimately redound to their affirmative accountability to have positive influences as an act of being responsible with assertive accomplishment as forceful with self-confidence in carrying out decisions.

3. Teachers' professionalism highly strengthened school children's basic literacy in the acquirement of competence or knowledge in their ability to do something well wherein their numeracy for their arithmetical comprehension of the fundamental arithmetical operations like addition, subtraction, multiplication, and division through their sensory by stimulating their five senses ranging from touch to taste, sight, sound and smell in order to acquire movement and balance.

4. Sectorial supports by private school, LGU, and DepEd officials were highly associated to school heads' and teachers' higher job satisfaction through career growth and development in teaching as the most noblest profession in life as well as collaboration to implement large-scale initiatives for common educational end in the privation of education in particular, through effective and efficient management of Philippine system of basic education in general.

5. Due to the probity of significant relationship though low, school heads' leadership qualities in terms of educational stylishness by means of their strategic smartness in showing quick intelligence for ready mental capability based on prudent and well thought key decision for residentiary gracefulness in refinement of words and distinguishable actions, but apparently and just a little portion or non-linkage in the enhancement of school children's primordial basic literacy, numeracy, and sensory skills. Similarly, amidst the foregoing display of school heads' leadership qualities, emerged the vulnerable timid action on the part of private school, LGU, and DepEd officials in times like this with no end limit treacherous attack by COVID-19 pandemic as supposedly expected of their consolidated assistance for survival of private elementary schools in Pila, Laguna. On the parallel ground, that the more of

considerable momentousness noteworthiness given by teachers' professionalism in their assertive accomplishment with self-confidence in carrying out decisions in affirming their accountability for positive influences as an act of being responsible in order to attest their autonomy in advocating self-decision to deliver effectively and efficiently the online instructions but unfortunately, absence of relationship for infusion of school children's basic literacy, numeracy, and sensory skills which ultimately ended into less grip of sectorial supports from private school, LGU, and DepEd officials in times like this with no end limit horrible attack by COVID-19 pandemic both local and global.



A STUDY ON CONSUMER SATISFACTION TOWARDS ONLINE MEDICINE SHOPPING WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

In this pandemic situation people started to use online shopping for the safety purposes. So I decided to do the project as “A study on consumer satisfaction towards online medicine shopping”. The main objectives of this study is to find out the prominent reason on customers satisfaction towards online medicine shopping. Satisfaction is a person’s feelings of pressure or disappointment resulting from product’s perceived performance outcome in relation to his or her expectations. Customer satisfaction is the level of a person’s felt state resulting from comparing a product’s perceived performance outcome in relation to the person’s expectations”. This satisfaction level is a function of difference between perceived performance and expectations. If the product’s performance, exceed expectation the customer highly satisfied or delighted. If the performance matches the expectations the customer is satisfied. If the products performance fall shorts of expectations the customer is dissatisfied. From the beginning of the “Customer service revolution” almost 20 years ago, a body of business research has focused on customer satisfaction and customer-focused organizations. Business consultants, corporations and others have worked to identify the characteristics of organizations that consistently please their customers, to develop tools for monitoring customer satisfaction, and to build continuous, quality improvement systems that respond to consumer feedback.

KEYWORDS: Consumer satisfaction, Online medicine shopping, Customer expectations.

1. INTRODUCTION

Marketing is the process of getting the right goods or services or ideas to the right people at the right place, time, and price, using the right promotion techniques and utilizing the appropriate people to provide the customer service associated with those goods, services, or ideas. Most successful organizations have adopted the marketing concept. To encourage exchanges, marketers follow the “right” principle. The marketing concept is based on the “right” principle. Customer satisfaction is the customer’s feeling that a product has met or exceeded expectations.

2. STATEMENT OF THE PROBLEM

Online sales and purchase of various commodities are increasing in both developed and developing countries due to the accessibility of ubiquitous internet and awareness. For the reason of accessibility of

information communication technology at considerably low cost, availability of improved supply chain for online purchase of commodities there is an increased interest among various category of people, there are concerns and curiosity on purchasing and selling of medicines online. Many online medicine suppliers have already started selling and marketing their products by demonstrating through websites and offering 35% to 55% discounts to customers.

3. OBJECTIVES OF THE STUDY

- To identify the factor influencing consumers towards online shopping of medicine in Coimbatore city.
- To access the customer satisfaction towards quality, availability, price of medicines in online.



- To study customers attitude towards online medicine shopping in Coimbatore city.
- To study the challenges faced by medical stores in selling medicines through online.

4. RESEARCH METHODOLOGY

Research is common parlance refers to a search for knowledge. Once can also define the fact, research is an art of science investigation.

COLLECTION OF DATA

Primary data

The data was collected through a questionnaire. The questions were in the form of multiple choices. The survey was adopted and the information was collected from 120 respondents.

Secondary data

The data that already exists is called as secondary data. This data is collected beforehand by others.

5. TOOLS

- Percentage Analysis
- Weighted Average Analysis
- Rank Correlation

7. TABLE

- **SIMPLE PERCENTAGE ANALYSIS**

Table Showing Special Offers Given In Online Medicine Shopping

Special offers given in medicine online shopping	No. of respondents	Percentage (%)
Very unlikely	38	32
Somewhat unlikely	20	17
Neither likely nor unlikely	49	41
Very likely	12	10
Total	120	100%

INTERPRETATION

The above table reveals that 32% of the respondents say special offer is useful Very unlikely, 17% of the respondents say special offer is useful somewhat unlikely, 41% of the respondents say special

6. REVIEW OF LITERATURE

Goldsmith and Bridges (2019), found that consumers who felt that it was easy to buy over the web were more likely to buy, implying that confidence leads to greater purchase likelihood. A positive relationship between Internet experience/confidence and amount of shopping is thus found in his study.

David M. Szymanski and Richard T. Hise (2019), observed that e-retailers promise their customers that online experiences will be satisfying ones, understanding what creates a satisfying customer experience becomes crucial. Even though this understanding appears crucial, no studies have examined the factors that make consumers satisfied with their e- retailing experiences.

Sang Yong Kim and Young Jun Lim (2018), examine that the relationship between consumer's perceived importance of and satisfaction with Internet shopping. They find that the factors of entertainment, convenience, reliability, information quality and speed are important for choosing shopping sites and also find that the factors of entertainment, speed, information quality, and reliability are related to consumers' satisfaction with Internet shopping.

offer is useful Neither likely nor unlikely and 10% of the respondents say special offer is Very likely.

INFERENCE

Majority of respondents say special offer is useful neither likely nor unlikely.



• **RANK CORRELATION**

Table Showing Ranking Of Factors That Provoke Your Decision To Purchase Medicine From Online

FACTORS	I	II	III	IV	V	VI	VII	TOTAL	AVERAGE	RANK
Delivery time	12 (84)	14 (84)	15 (75)	10 (40)	21 (63)	7 (14)	9 (9)	369	52.71	1
Reputation of the pharmacy	10 (70)	6 (36)	24 (120)	2 (8)	4 (12)	15 (30)	4 (4)	280	40.00	3
Availability of all company medicines	11 (77)	12 (72)	8 (40)	6 (24)	7 (21)	1 (2)	2 (2)	238	34.00	4
Home delivery service	6 (42)	21 (126)	5 (25)	17 (68)	9 (27)	8 (16)	1 (1)	305	43.57	2
Price of medicines	6 (42)	2 (12)	5 (25)	7 (28)	16 (48)	6 (12)	17 (17)	184	26.29	5

INTERPRETATION

From the above ranking analysis, it was found that Delivery time ranks 1, Home delivery service ranks 2, Reputation of the pharmacy ranks 3, Availability of all company medicines ranks 4, and Price of medicines ranks 5.

INFERENCE

Majority of the respondents say Delivery time ranks 1.

8. SUGGESTION

- Customer like best quality product on any price, so company should add latest technology to their products.
- Customer’s behavior always looks for some extra benefit with purchasing. They demand for affordable price for product and gifts with purchasing.
- Online shopping company should give more emphasis on advertising to create market awareness and to make a brand image in the minds of investors.
- They should keep a close eye on competitor strategy.

9. CONCLUSION

As the study has shows the customer satisfaction of online medicine shopping in Coimbatore city. Online selling of medicines seems to have an equal number of pros and cons. Since we lack regulations as of now, there is more inclination towards cons. We also know that making regulations in India is one thing and ensuring their strict implementation is another.

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A STUDY ON CUSTOMER’S SATISFACTION TOWARDS SKODA CARS WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Satisfaction is crucial concern for both customers and organizations. It depends on many factors and varies from person to person and product to product. Customer satisfaction is a measure of post purchase behaviors of the customers. SKODA initially entered the business with the strategy of reasonable price of car for the customers but while making it affordable and low price the company forgot to look on its design according to new technological advancements and the latest market trends. The tools that are used in this study are simple percentage method, Rank analysis and Likert scale analysis. The suggestions reveal most of the customers believe that SKODA is doing well in Coimbatore and its visibility is increasing in roads day by day.

KEYWORDS: SKODA, Price, Technology, Satisfaction.

1. INTRODUCTION

Satisfaction is a crucial concern for both customers and organizations. The importance of customer satisfaction in strategy development for customers and market oriented cannot be determine. SKODA initially entered the business with the strategy of reasonable price of car for the customers but while making it affordable and low price the company forgot to look on its design according to new technological advancements and the latest market trends. The new strategy was customer satisfaction along with new innovative technologies for the car making it lovelier and quality was great and the new car was engineered with practicality and value for money.

2. STATEMENT OF THE PROBLEM

The craze for cars never seems to end.in fact, the car market is swamped with all segment of cars viz.

sports car, big car, small car, rental cars, cheap cars and many others. As a result, the competition among the car manufacturer is also increasing and they are finding innovative ways of capturing the market. Also, the mind set of the people fluctuates from one period to another thus it is essential to study the root cause to opt the product of the company and the level of satisfaction they have obtain.

3. OBJECTIVES OF THE STUDY

- ❖ To know the factors influencing the customer to buy a Skoda car.
- ❖ To analyse the satisfaction level of the customer.
- ❖ To examine the problem faced by the customer.
- ❖ To analyze the suggestion from the customer.

4. RESEARCH METHODOLOGY

Methods of data collection	Both Primary and Secondary data
Sampling design	Convenient sampling technique
Area of the study	Coimbatore City
Sampling size	110 respondents



5. STATISTICAL TOOLS

- Simple Percentage analysis
- Ranking analysis

6. REVIEW OF LITERATURE

- **SONIYA POUDEL- 2019** The purpose of this study aimed on how the automobile industry in Nepal and their customers view the value of after sales service. The main objective was to recognize the differences, if any, between their perception and the way it will impact on customer satisfaction level. This study makes a significant contribution to the literature by extending and improving the existing information of the company to increase the after-sales service satisfaction of the customer in automobile industry in Nepal.
- **MURALI KRISHNA REDDY and P. BALAJI PRASAD -2017** This paper deals with the importance of customer satisfaction in small car segment in Andhra Pradesh and also presents a review on customer

satisfaction, service quality and factors which affect customer satisfaction in Select Companies in Andhra Pradesh. This paper also gives an idea about latest techniques and methods used by the previous researchers in different years. The customer plays a role of backbone for success of any Industry. The establishment and progress of any industry is completely depending on customer and its satisfaction. The increment and decrement in the no. of customer is totally depending on customer satisfaction.

- **S. JAMMUNA. and. P. BHARATHIRAJA -2014** The present study is based on the awareness of TATA NANO cars among the customers. A sample survey of 110 respondents was undertaken to find out the awareness of TATA NANO cars in TRICHY city. The study mainly concentrated on general applications, general awareness, advantages and consumer preferences of TATA NANO cars

7. TOOLS USED TABLES

SIMPLE PERCENTAGE METHOD

Does The Respondents Have A Skoda Car?

S.No	Does They Have Skoda Car	No Of Respondents	Percentage
1	YES	99	90%
2	NO	11	10%
	TOTAL	110	100

Source: primary data

INTERPRETATION

It is clear from above table out of this total respondent taken from study 90% of the respondents have SKODA car, 10% of the respondents do not

have SKODA car.

INFERENCE

Majority (90%) of the respondents have SKODA car.

RANK ANALYSIS

Factors Which Influence To Buy a Skoda Car

Factors	Value	5	4	3	2	1	Total	Rank
PRICE	NO	4	7	25	10	61	204	5
	SCORE	20	28	75	20	61		
LOOKS	NO	1	10	13	55	23	217	3
	SCORE	5	40	39	110	35		
COMFORT	NO	5	7	28	25	35	222	2
	SCORE	25	28	84	50	35		
SAFTEY	NO	5	13	23	31	28	210	4
	SCORE	25	26	69	62	28		
SERVICE	NO	14	16	32	20	20	290	1
	SCORE	70	64	96	40	20		

Source: primary data



INTERPRETATION

The above table indicates that, out of those respondents taken for the study, the respondents has given top priority to service, followed by factors like to comfort, looks, safety and price.

INFERENCE

It is concluded that the respondents have given top priority to service factor to buy a SKODA car

8. SUGGESTIONS

- Most of the customers believe that SKODA is doing well in Coimbatore and its visibility is increasing in roads day by day. However, they seemed to be unhappy and dissatisfied with the price of spare parts.
- Even though the survey showed that the satisfaction level of SKODA customers are very high, a considerable number of SKODA customers suggested to improve after sale service as well as overall customer service.
- Pricing is one factor that SKODA needs to consider for competing in the market in the long run. Few customers find SKODA products relatively expensive.
- Customers felt that SKODA has very less range of products to choose from. They strongly feel that it should increase its range of products

9. CONCLUSIONS

This study is an attempt to focus attention of the customers satisfaction towards SKODA cars in Coimbatore city. The main aim of the project was to understand people and their opinion of SKODA cars. Most of the people are like and satisfied SKODA cars due to its comfort and safety. There are many competitors to SKODA cars but its stand leading because of its brand image. In the present study, it is found that the cost of SKODA cars is high and people though like the quality of cars with out hesitating to buy only for this reason. The findings help to identify the strong and weak points of brand and suggestion have been framed with a view to generating higher degree of opinions and satisfaction towards SKODA cars. The study concluded that more variants, and reducing the cost will induce the people to choose this brand and this will help them to defeat the competitors.

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A STUDY ON PROBLEMS FACED BY STREET VENDORS IN COIMBATORE CITY

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ABSTRACT

Street vendors have been in existence since ancient times. In all civilisations, ancient and medieval, one reads accounts of travelling merchants who not only sold their wares in the town by going from house to house but they also traded in neighbouring countries. Street vending is a global phenomenon and the most visible aspect of the informal sector. Like other informal sector, street vending is characterized by low level of income, easy of entry, self-employed and it involves large number of people. The study reveals that majority of the vendors face the fear of eviction. Despite a general belief that street vending will recede as economies develop and income rise, it is actually on increase in many places. However, the advent of Street Vendors Act has enhanced the standard of living of vendors to an extent.

KEYWORDS: Vending, Global phenomenon, Street Vendors Act

INTRODUCTION

Street vending is a global phenomenon and the most visible aspect of the informal sector. Like other informal sector, street vending is characterized by low level of income, easy of entry, self-employed and it involves large number of people. In cities and towns throughout the world, millions of people earn their living by selling wide range of goods and service on the street. Despite a general belief that street vending will recede as economies develop and income rise, it is actually on increase in many places.

Street vendors are very important part of the informal sector in the country. It is estimated that around 80 percent of the population are engaged in street vending profession. Women form a large segment of street vending in almost every city. Street vending is not only a source of self-employment to the poor in cities and towns but also a means to provide “affordable” as well as “convenient” services to a majority of the urban population.

Street vendors are often those who are unable to get regular jobs in the remunerative formal sector on account of their low level of education and skills. They try to solve their livelihoods problems through their own meagre financial resource. They are the main distribution channel for a large variety of products of daily consumption like fruits, vegetables, readymade garments, shoes, household gadgets, toys, stationery, newspapers, and magazines and so on. If they were to be eliminated from the urban markets, it would lead to a severe crisis for fruit and vegetable

farmers, as well as small scale industries which cannot afford to retail their products through expensive distribution networks in the formal sector. The importance of this sector cannot be undermined, especially considering that the government does not have the capacity to provide jobs to the millions of unemployed and underemployed people in India. Even the corporate sector is able to absorb only a tiny proportion of our expanding work force. Overall employment in the formal sector is actually declining. This means most people in India have to fend for themselves. People in the informal sector ought to be encouraged to grow and prosper if the governments want to reduce unemployment and poverty in our country. They contribute significant role in local economic growth and development of the urban economies. Public authorities considered street vendors as a nuisance and as encroachers of sidewalks and pavements and do not appreciate the valuable services that street vendors provide to the general population of the world. Street vendors provide valuable services to the urban masses while making out a living through their own enterprise, limited resources and labour. Street vendors have been demanding protection from civic agencies and the state government so they can earn their livelihood without fear.



OBJECTIVE OF THE STUDY

The following specific objectives are identified in line with the general objective of the study.

- To analyze the socio-economic conditions of the street vendors.
- To study the quality of work life of street vendors.
- To understand the problems faced by street vendors.
- To analyze the areas those are exceedingly impacting the street vending operations.

REVIEW OF LITERATURE

Dr. G. Jayanti, Baranipriya. A and Sreepadnan (2020) in their study examined the socio economic condition and problems faced by the street vendors in Coimbatore city. The result reveals that, female's contribution in this sector is lesser than the male respondents and they were facing problems like health issues, wastage of unsold goods, and insecurity in employment. Therefore, the government

should take some corrective measures to improve their socio- economic and living conditions of street vendors.

Prasad and Begari (2018) in their study have inspected about the issues and challenges faced by street vendors in Telangana. The study examines the street vendors are not recognised and regulated by state, and therefore, they do not get any support from government to operate their activity. They face several problems like harassment and pressure by police department, municipality authorities, local leaders and market contractors or rent seekers.

Kumar and Pillai (2017) in their study on 'Problems of street vendors in Kollam district' probed into various issues faced by street vendors. According to their study, Economic instability, Social insecurity, Weather fluctuations, Barriers towards credit facility, health issues, Discrimination, Working instability, Deciduous implementation of Government policies and programs, Lack of awareness about legal rights etc. are the major issues faced by street vendors.

RESEARCH METHODOLOGY

Methods of data collection	Both Primary and Secondary data
Sampling design	Convenient sampling technique
Area of the study	Coimbatore District
Sampling size	120 respondents

STATISTICAL TOOLS

- Simple Percentage analysis
- Likert scale analysis

LIMITATIONS OF THE STUDY

- The research area is limited to Coimbatore city only.
- Due to lack of time, the collection of data from vendors was restricted to 120.
- During the data collection, few of the vendors were hesitant and reluctant to respond.

FINDINGS

SIMPLE PERCENTAGE ANALYSIS

- Majority (58%) of the respondents are male.
- Majority (62%) of the respondents belong to the age group between 31 years to 50 years.
- Majority (76%) of the respondents are married.
- Majority (78%) of the respondents have a family size of 2 members to 5 members.
- Most (36%) of the respondents are without any formal education.
- Majority (39%) of the street vendors are sole earners in the family.

- Majority (86%) of the respondents are without any physical disability.
- Majority (52%) of the respondents are staying in rented premises.
- Majority (73%) of the respondents consider street vending as their primary occupation.
- Most (36%) of the respondents are engaged in the vending business for 5 years-10 years.
- Most (32%) of the vendors are engaged in the vending business because of the minimum investment requirements.
- Most (23%) of the vendors consider savings as their primary source of investment.
- Most (29%) of the vendors have food items as their vending product.
- Majority (53%) of the vendors work for 8 hours to 10 hours.
- Most (48%) of the vendors vend during the day.
- Majority (65%) of the vendors vend daily.
- Most (41%) of the vendors earn between Rs.500 to Rs.2000 per day.
- Most (48%) of the vendors spend less than Rs.1000 per day.
- Most (28%) of the vendors spend majorly on their children's education.



- Majority (75%) of the vendors are sometimes able to fulfil their family needs.
- Most (31%) of the vendors avail financial services through ATM.
- Most (34%) of the vendors have sore arms and legs.
- Majority (55%) of the vendors were partially affected due to the covid 19 pandemic.
- Majority (51%) of the vendors had sold their vending product to their neighbours during the lockdown.
- Most (48%) of the vendors consider government subsidies as their source of income during the lockdown.
- Majority (65%) of the vendors are getting support from their family.
- Majority (67%) of the vendors are members of some trade union.
- Majority (58%) of the vendors have access to clean drinking water.
- Majority (60%) of the vendors have clean toilet/bathroom facility at their work place and home.
- Majority (64%) of the vendors are able to consume food at regular intervals.
- Majority (57%) of the vendors are not able to take nutritious food.
- Majority (67%) of the vendors do not go for a regular health check-up.
- Majority (64%) of the vendors have faced some kind of abuse from anti-social elements.

LIKERT SCALE ANALYSIS

- Likert scale value is 3.88 which is greater than mid value (3). Hence majority of the respondents strongly agree that their family life is affected by stress and problems of work.
- Likert scale value is 3.88 which is greater than mid value (3). Hence majority of the respondents agree that they're able to support their children's education.
- Likert scale value is 3.36 which is lower than mid value (3). Hence majority of the respondents agree that they get support from nearby shop owners.
- Likert scale value is 3.44 which is lower than mid value (3). Hence majority of the respondents agree that they always vend at a space where there is high customer footfall.
- Likert scale value is 3.32 which is lower than mid value (3). Hence majority of the respondents agree that they're satisfied with the vending space available.
- Likert scale value is 3.19 which is lower than mid value (3). Hence majority of the

respondents agree that there is ease in taking breaks during work.

- Likert scale value is 3.83 which is greater than mid value (3). Hence majority of the respondents agree that their products are kept neat and clean.
- Likert scale value is 3.06 which is lower than mid value (3). Hence majority of the respondents are neutral about the impact of climatic changes on their vending business.
- Likert scale value is 3.12 which is lower than mid value (3). Hence majority of the respondents agree that their savings are not affected due to storage costs.
- Likert scale value is 3.76 which is greater than mid value (3). Hence majority of the respondents agree that they expect supporting government policies.
- Likert scale value is 3.41 which is lower than mid value (3). Hence majority of the respondents are neutral about the impact of bandhs/hartals/other strikes on their vending business.

SUGGESTIONS

- ✓ The respective government authorities should provide licence to the vendors so that they can be protected by harassment and eviction by local authorities.
- ✓ They should also be provided with permanent sheds and minimum facilities such as first aid, drinking water, toilet, garbage collection and solid waste disposal etc.
- ✓ Adequate financial support should be provided to the vendors by the authorities to overcome the adverse impact of the pandemic.
- ✓ Since financial instability is one of their major constraints, credit facilities and basic knowledge about financial activities to be made available to the vendors.
- ✓ Scheme like regular health check-up or health care and pension should also be extended to vendors.
- ✓ Vending committee of each district should effectively address the vending issues of the vendors falling under their jurisdiction.

CONCLUSION

Since nearly 81% of the Indian labour market is comprised of informal employment and street vending is one of the ways of self-employment, providing the required support to the street vendors is essential to sustain their business and also to reduce unemployment in the economy. Majority of the respondents are engaged in the business of street vending because of the low investment requirements and raised their capital for initial investment from individual savings. Major constraints in street



vending were fear of eviction by municipality officials, lack of hygienic storage facilities, lack of permanent space for vending, price fluctuation, finance, competition from other street vendors, organized retail sector and facing the adverse weather conditions and in the recent times it has been the impact of the covid 19 pandemic across the globe.

Hence there is a need to provide legal status to the street vendors to enable them to carry on their business without fear of eviction. This study on the problems faced by the street vendors would assist the concerned authorities or stakeholders to get an insight regarding the major problems faced by them.

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A STUDY ON FINANCIAL PERFORMANCE OF AXIS BANK

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ABSTRACT

Money is the expert key that gives admittance to all assembling and promoting sources. Monetary achievement is significant for the arrangement and the executives of monetary choices. The current investigation manages the examination of "A STUDY ON FINANCIAL PERFORMANCE OF AXIS BANK". The investigation utilized six years of Axis Bank auxiliary information and fundamental goal is to discover the monetary presentation of the business that can be useful in discovering the development angles. This examination was carried under the time of six years 2015-2020 of monetary record and benefit and misfortune account. Hence it is important to assess the monetary presentation to know whether the organizations remain on the lookout and how they can work on their future turn of events and monetary dependability of the organization.

KEY WORDS: Financial performance, Growth aspects, Ratio analysis.

1. INTRODUCTION

A proficient banking system is recognized as basic prerequisite for of any economy as they play crucial role in the economic development of an economy. Financial statements are prepared to satisfy external reporting obligations and also for decision purposes. They play a vital role in setting the framework of managerial decisions. Financial performance analysis includes analysis and interpretation of monetary statements in such how that it undertakes full diagnosis of the profitability and financial soundness of the business. Financial performance analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing the relationship between the items of balance sheet and profit and loss account. These statements are the result of summarized process of accounting and are therefore the sources of data the basis of which conclusions are drawn about the profitability and therefore the financial position of the concern.

2. STATEMENT OF THE PROBLEM

In their context "Financial performance of AXIS Bank is selected for the present study. The Reserve Bank of India regulates the banking service industry. Analysis of a bank's financial statements requires a distinct approach that recognizes a bank's somewhat unique risks.

This study is guided by the following research questions:

1. What does the trend performance of AXIS bank looks like in the Six years?
2. What were the efficiency, profitability and liquidity position of banks?

3. OBJECTIVES OF THE STUDY

- ✓ To identify the financial strength and weakness of the AXIS Bank.
- ✓ To analyses the profitability, liquidity and solvency position of AXIS Bank.
- ✓ To offer suitable suggestions for improving performance of the bank.



4. RESEARCH METHODOLOGY

Source of Data	Secondary data
Period of Study	2015 to 2020
Framework of analysis	Financial Statements
Tools and Techniques	Ratio analysis

5. STATISTICAL TOOLS

A number of methods can be used for the purpose of analysis of financial statement. These are also termed as techniques or tools of financial analysis. One of these enterprises can choose those techniques which are suitable to its requirements. The principal techniques of financial analysis are:-

- a. Comparative Financial Statement.
- b. Ratio Analysis.

6. REVIEW OF LITERATURE

Priyanka Jha (2018) found that analyzing financial performance of public sector banks and private sector banks in India. Her objective was to assess and compare the financial performance of both the banks. The present study concluded that ICICI Bank has performed sounder as compare to PNB Bank.

Dr.Gagandeep Sharma and Divya Sharma (2017) discussed comparison and analysis of profitability of top three Indian private sector banks. Their objective was to study the profitability ratios of top three private sector banks i.e. HDFC Bank, ICICI Bank and AXIS Bank. The study concluded that HDFC Bank is found to be consistent on the basis of cost to income ratio and return on net worth.

Pawan and Gorav (2016) this study is related to a comparative study on financial health ICICI Bank and AXIS Bank. Their objective was to measure and compares financial performance and health of ICICI Bank and AXIS Bank. The study concluded that AXIS Bank performs well on earning per share, assets turnover and debt-equity parameters. Overall performance of AXIS Bank is good to compare ICICI Bank.

7. FINDINGS

- The current ratio of the bank was highest in the year 2019-2020 and the lowest ratio in the year 2014 – 2015.
- The liquid ratio of the bank was highest in the year 2019-2020 and the lowest value of ratio in the year.
- Absolute liquid ratio of the bank was highest in the year 2019-2020 and the lowest in the year 2018-2019.
- Debt equity ratio of the bank was highest in the year 2019-2020 and the lowest in the year

2014-2015.

- Fixed asset ratio of the bank was highest in the year 2019-2020 and the lowest in the year 2014-2015.
- Proprietary ratio of the bank was highest in the year 2019-2020 and the lowest in the year 2014-2015.
- Fixed Asset to Proprietor Fund ratio of the bank was highest in the year 2019-2020 and the lowest in the year 2014-2015.
- Current Assets To Proprietary fund ratio of the bank was highest in the year 2019-2020 and the lowest in the year 2014-2015.
- Current assets to Fixed assets ratio of the bank was highest in the year 2019-2020 and the lowest in the year 2014-2015.
- Reserves to Capital ratio of the bank was highest in the year 2019-2020 and the lowest in the year 2014-2015.

8. SUGGESTIONS

- The AXIS Bank must to take necessary measures to improve their current assets and reduce their advances and current liabilities.
- In comparison with other bank the performance of AXIS bank is quite good but no so effective than its competitors.
- The AXIS bank must concentrate to improve their fixed asset value.
- The AXIS bank must concentrate to improve their net profit value.
- The AXIS bank must improve their value of reserves.

9. CONCLUSION

A financial analyst can adopt the following tools for analysis of the financial statement. These are also termed as methods of financial analysis. The banking sector is one of the core sectors in the economic development of India. So the purpose of the study is to concentrate on financial performance of AXIS bank. This study attempted to find out whether AXIS have performed well or not. The main objective of the study is to evaluate the risk exposure of the bank in the last five years and to predict the future performance of the bank.



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A STUDY ON CONSUMER SATISFACTION TOWARDS BRANDED TWO-WHEELER TYRES (WITH SPECIAL REFERENCE TO COIMBATORE CITY)

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ABSTRACT

When we think of the safety features of any vehicle, we did not likely think of the side mirrors, the seat belts and the airbags. While these are certainly on that list, there's another important part of the vehicle which many vehicle owners overlook: the tyres. Tyres are the only components that make contact with the road while you ride a two-wheeler, it means all the hi-tech elements of the bike and their performance can be translated on to the road only through tyres. The tools that are used in this study is Simple Percentage Analysis. The suggestions reveal most of the respondents have preferred quality brands and has also concluded to concentrate on prime brands of tyres.

KEYWORDS: Tyres, Vehicle, Performance, Quality.

INTRODUCTION

When we think of the safety features of any vehicle, we did not likely think of the side mirrors, the seat belts and the airbags. While these are certainly on that list, there's another important part of the vehicle which many vehicle owners overlook: the tyres.

Motorcycle tyres are the outer part of motorcycle wheels, attached to the rims, providing traction, resisting wear, absorbing surface irregularities, and allowing the motorcycle to turn via counter steering. The two tyres' contact patches are the motorcycle's connection to the ground, and so are fundamental to the motorcycle's suspension behaviour, and critically affect safety, braking, fuel economy, noise, and rider comfort. The history of motorcycle tyres is a clear progression of steady improvement in grip, allowing better acceleration, braking, and turning, along with improved comfort, safety, durability, and reliability.

Tyres are the only components that make contact with the road while you ride a two-wheeler, it means all the hi-tech elements of the bike and their performance can be translated on to the road only through tyres.

Tyres are a significant part of your bike, but most of the time they go unnoticed even after undergoing a detailed maintenance session. The customer market is some total of all goods and

services purchased in a given period by all the inhabitants of a given country or a section for the satisfaction of their consumption need. The level of satisfaction can also differ subject to the other products against which the customer can associate the organization's products. Customers who are satisfied with their tyres are more likely to repurchase the same brand again.

Never underestimate the importance of having good, properly inflated tires on our motorcycle. The small contact patches provided by the front and rear tires, the motor-cycle's only source of traction. Deterioration of your tires' condition can jeopardize this contact patch and bring a good ride to a quick end. Safe riding depends on selecting the right tires, inspecting and maintaining them, and replacing them as necessary.

OBJECTIVES OF THE STUDY

- To know the socio-economic status of the respondents.
- To know the customer awareness towards the branded two-wheeler tyres.
- To know the brand preference of the branded two-wheeler tyres.
- To find out the customer satisfaction regarding towards the branded two-wheeler tyres.



REVIEW OF LITERATURE

A literature review is a survey of scholarly sources on a specific topic. It provides an overview of current knowledge, allowing you to identify relevant theories, methods, and gaps in the existing research. A good literature review doesn't just summarize sources – it analyses, synthesizes, and critically evaluates to give a clear picture of the state of knowledge on the subject.

Dr. S.B. I neat armed (2017) studied that; In India bike industry has procured a new tallness' amid the most recent five years with overwhelming rivalry and origin of the condition of craftsmanship and changes in innovation. The proprietor of bikes has now a wide decision of models. In India, for the most part in urban ranges, two Interfacing with work. Going by individuals, conveying loads, outside occupations like offering and so forth. In Rural territories it empowers individuals to travel more as often as possible to close-by towns for they day-by-day needs.

Dr.M. Rajesh, Dr. T N V R I. Swamy, Dr. Susan Chirayath (2018) studied that; The aim of this study is to measure the brand awareness among the customers about the various brands in Motorcycle

Tyre industry and to study the customer preferences while purchasing a motorcycle tyre. Brand awareness is always considered to be an unavoidable criterion in determining a consumer's purchase decision. Brand awareness can be depicted into 3 facets – Top of the Mind Recall, Unaided Recall and Aided Recall, each of these 3 facets having its own influence on the customer's buying decision. This paper tries to study the brand awareness of the motorcycle tyre brands in all the three facets.

Dr. Ruchi Bakare and Mr. Pratik Bison (2019) studied that; Customer satisfaction is defined as a capacity that can found out that to what extent the customers happy with a company's products, services, or capabilities. Customer satisfaction data, includes surveys, ratings and opinions and can help a company to control how to best recover or changes its products and services. An organization's key emphasis must be to gratify its customers. This is applicable to industrial firms, retail and wholesale businesses, government bodies, service companies, nonprofit organizations, and every subgroup within an organization.

RESEARCH METHODOLOGY

Methods of data collection	Both Primary and Secondary data
Sampling design	Convenient sampling technique
Sampling size	130 respondents

STATISTICAL TOOLS

- Simple Percentage analysis

LIMITATIONS OF THE STUDY

In spite of detailed analysis made in the present study is not free from the limitations. The following are the important limitations:

- The data was collected only from the vehicle owners who residing in Coimbatore city, particularly, Karattumedu, Viswasapuram, Saravanampatti, Kurumbapalayam, Kovilpalayam are alone considered.
- A sample of 130 respondents were identified and questionnaire were distributed to carry out the study during the period of January 2021 to March 2021 are alone considered.
- The sample size may not be the exact, we believe that our results are very helpful to retain the customers and to upgrade the product specifications.

FINDINGS OF THE SIMPLE PERCENTAGE ANALYSIS

- Mostly(33%) respondents were in the age group of 21 – 30Years.
- Majority (64%) of the respondents were male.
- Majority(61%) of the respondents are Unmarried.
- Majority (51%) respondents are coming under the College Level.
- Mostly (39%) of the respondents are earning below 10,000.
- Mostly (34%) of the respondents are Private Employee.
- Mostly (57%) of the respondents are Nuclear Family.
- Mostly (58%) of the respondents are 3-5 family members.
- Mostly (35%) of the respondents are preferred MRF tyre.
- Mostly (41%) of the respondents are preferred MRF tyre.



- Mostly (38%) of the respondents are identify the brand through the Friends and Relatives.
- Mostly (35%) of the respondents are replacement of the brand two-wheeler tyre in two year once.
- Majority (52%) of the respondents are cause for purchasing branded two-wheeler tyre in Better Quality.
- Mostly (42%) of the respondents are promotional Activities for branded two-wheeler tyre through discounts.
- Mostly (29%) of the respondents are source of influence through the internet advertisements.
- Mostly (35%) of the respondents are signs of bad tyres through excessively worn tread of tyres.
- Mostly (47%) of the respondents are source of information about branded two-wheeler tyre through internet.
- Mostly (30%) of the respondents are top company MRF tyre.
- Mostly (34%) of the respondents are way to stop tyre creaks through all the above.
- Mostly (29%) of the respondents are long lasting MRF tyre.
- Mostly (32%) of the respondent Indian branded two-wheeler tyre company MRF tyre.
- Mostly (35%) of the respondents are life of branded two-wheeler tyres in 2 years.

SUGGESTIONS

- Tyre manufacturing Companies should concentrate more on television advertisement, as most people get attracted through television only.
- For promotional offers, the companies should go for increased margins rather than going for other ways.
- In order to retain the prime position, the competitive strategies may be used for better service, quality improvement etc.
- Constantly, upgrade the specifications to attract the new customers.
- To retain the customers who would shift from one brand to others, the company should offer attractive incentives through, discounts etc.,
- Improve the distribution network and make available the products in needed time of customers.
- The problems once mentioned by the customers must be taken care off.

CONCLUSIONS

According to the study I concluded that the branded two-wheeler tyre companies always satisfy the customer needs and the purpose, but only problems is with the services given to the customer at the showroom. So, as per study, I can say that the branded two-wheeler tyre companies should think about the services provided by showroom to capture the maximum market segments. As, Coimbatore city is one of the vast markets and having mass younger population who are in the age group of 21-30 years, they are going to buy their own two-wheelers in the years to come. The study gives a detailed report on customer behavior towards preference of MRF tyres. It is observed that the customers are satisfied with the MRF tyres with their unique special feature. As the other brands like TVS tyre, CEAT tyre and Apollo tyre are familiar among the customers and these brands are available by improve promotional strategies. so MRF tyres has to come up long way to attain good position in the market.

In order to attract the new customers, it is essential to give more advertisements through social medias with upgraded product specification, best quality tyres with significant discounts will all along help the tyre manufacturing industries to reach its new heights in the near future. I hope my findings, suggestions will support the tyre manufacturing company in an effective and better way.

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A STUDY ON FINANCIAL PERFORMANCE OF INDIAN TOBACCO CORPORATION LIMITED

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ABSTRACT

Finance is defined as the provision of money at the time when it is required. Every enterprise, whether big, medium or small, needs finance to carry on its operations and to achieve its targets. The study used five years of Indian Tobacco Corporation Limited company data and the main objective of the study is to know the financial position of the company and to find out the efficiency of financial operations. The tools used for the study are liquidity ratio, profitability ratio and activity ratio. The suggestion given is that the management of the company should take adequate actions to maintain their absolute liquid assets to pay off its current debts.

KEYWORDS: Profitability ratio, operating efficiency, financial position.

1. INTRODUCTION

Finance is defined as the provision of money at the time when it is required. Every enterprise, whether big, medium or small, needs finance to carry on its operations and to achieve its targets. Finance is so indispensable today that it is rightly said to be the life hood of an enterprise. Without adequate finance, no enterprise can possibly accomplish its objectives.

The term "BUSINESS FINANCE" connotes finance of business activities. Ratio analysis is one of the techniques of financial analysis where ratios are used as a yardstick for evaluating the financial condition and performance of the firm. Analysis and interpretation of various accounting ratios gives a skilled and experienced analyst, a better understanding of financial conditions and performance of the firm than what he could have obtained only through a perusal of financial statements.

2. STATEMENT OF THE PROBLEM

This study titled "A study on financial Performance Analysis of Indian Tobacco Company Limited". The information that are mainly derived from Profit and loss account and balance sheet and it refers to a treatment of the information contained in the ratio analysis as to afford diagnosis of the profitability and financial soundness of the company. A number of methods or derives are used to study the relationship between different statement.

3. OBJECTIVES OF THE STUDY

- To know the financial position of the Indian Tobacco Corporation Limited.
- To find out the efficiency of financial operations.
- To analyze the profitability position.

4. RESEARCH METHODOLOGY

Source of data	Secondary data
Period of study	2015-2016 to 2019-2020
Framework of analysis	Financial statements
Tools and techniques	Ratio analysis



5. STATISTICAL TOOLS

The following statistical tools were applied to analyse the statistical data collected for calculation of financial performance analysis.

1. LIQUIDITY RATIO

- Current Ratio
- Liquid Ratio
- Absolute Liquid Ratio

2. PROPRIETARY RATIO

- Gross Profit Ratio
- Net Profit Ratio
- Operating Profit Ratio
- Operating Ratio

3. ACTIVITY RATIO

- Capital Turnover Ratio
- Fixed asset Turnover Ratio

6. REVIEW OF LITERATURE

DR.R. MALINI AND DR.A. MEHARAJ BANU (2019) this study is concentrated on the “Financial performance analysis of Indian Tobacco Corporation limited”. The objective of this study is to know financial position of the Indian Tobacco Corporate Limited. It concludes that the financial performance of Indian Tobacco Corporation Limited for a period of five years from 2013 to 2017, the study strongly reveals that the financial performance is better. However, it needs to minimize the operating expenses to get high net profit.

AYAN CHAKRABORTY (2017) this study is concentrated on the “Impact of leverage & coverage ratios on ITC Ltd”. The objective of this study is to know the overall operating efficiency and performance of the firm through financial analysis. It concluded that the ITC Ltd is also using the financial leverage effectively thereby increasing the earning of the shareholders. Finally, it is concluded that the company should improve its debt equity ratio in order to have better trading on equity position and reframe its capital structure for further development.

ARITRA RANJAN DAS (2018) this study is concentrated on the “Financial Performance of Steel Industry in India”. The objective of the study is to analyze the financial performance of the steel industry of India by selecting few identified units with regard to profitability, liquidity, solvency and

efficiency. This study concludes that the approval of the resolution plans by Committee of Creditors of the ailing steel companies under IBC 2016 is expected to provide fillip to the steel sector and also help the financial companies to get rid of the distressed assets from their balance sheet. Lastly the policies adopted by Government of India under National Steel Policy (2017) and Policy on Preference to Domestically Manufactured Iron and Steel Products is expected to provide the much necessary impetus to the iron and steel sector of the country.

7. FINDINGS

- The current ratio shows highest level of growth in 2019-2020 at 4.01:1 and lowest level of growth in 2015-2016 at 1.65:1
- The liquid ratio has highest growth in 2019-2020 at 3.13:1 and lowest level of growth in 2015-2016 at 1.07:1.
- The absolute liquid ratio has highest growth in 2019-2020 at 0.75:1 and the lowest level of growth in 2017-2018 at 0.29:1.
- The gross profit ratio has high level of performance in 2014-2015 at 39.09% and lowest growth in 2016-2017 at 33.77%.
- The net profit ratio has high level of performance in 2019-2020 at 33.17% and lowest growth in 2016-2017 at 25.45%.

8. SUGGESTIONS

The performance of Indian Tobacco Company limited during the period of study was found good and some minor weakness that holds up the massive performance for the company

- As the current ratio is good than the ideal ratio, still they should take necessary actions to retain the inventories and other receivable accounts for an extended time.
- The management of the company should take adequate actions to maintain their absolute liquid assets to pay off its current debts.
- As the operation profit of the company is somehow good they should decrease their expenses to get massive profit.
- The company should concentrate in boosting the capital turnover ratio as the higher the capital turnover ratio better will be the situation.



9. CONCLUSION

The main aim of this study is to analyse the financial position of Indian Tobacco Company with the help of 6 years (2014-2015 to 2019-2020) and collected data about ITC LTD, used analytical research design and analysed that the financial performance of business the is good. For Future growth, they have to increases the performance level and they should reduce the cash outflow and expenses. Then they should concentrate on increasing their turnover and profit which helps to increase financial performance of the business.

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A STUDY ON CONSUMER PREFERENCE TOWARDS INSTANT FOOD PRODUCTS (WITH SPECIAL REFERENCE TO COIMBATORE CITY)

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ABSTRACT

This study helps to spot the buyer preference towards instant food products. This study shows that the majority of the respondents purchased instant food regularly. This study is based on qualitative data collection with the help of structured questionnaires in the form of users of instant food product in Coimbatore city. The study result shows that the majority of the respondents are purchasing instant food regularly the main reason for purchasing instant food is easy to cook .the consumers are satisfied with taste and convenient .this study will use full to the manufactures of instant food product for more understanding the preference and selection of the buyer.

KEYWORDS: consumer preference, instant products, convenience.

1. INTRODUCTION

The word “Food” refers to the chemical substances taken into the body so as to stay body during a healthy and active condition. Instant food products are the food products which give convenience to consumers and easy to cook like Noodles, Instant food mix, masalas, etc... Oxford Advanced Learners Dictionary defined instant food products as “Instant food products which are prepared and packaged often in powered form are required only the addition of a liquid as water or milk for final preparation”. The category of ultra-instant food products takes less than one minute of time to organize like instant tea. Some instant food products are prepared using freeze-drying.

2. STATEMENT OF THE MATTER

In the era, instant food products play a vital role in satisfying the attitude of recent consumers. Nowadays, people aren’t able to make foods using

traditional method; instead they’re searching of things which can help them in making foods in an easier way. This paves the way for Instant food products and these products have changed the life sort of urban and rural population with the assistance of mass communication and advertisement. This study is undertaken to understand

3. OBJECTIVE OF THE STUDY

- To study about the awareness of Instant food products. .
- To analyses the buyer preference towards Instant food products.
- To find determine the explanations for purchasing Instant food products.
- To determine the influencing factors on Instant food products.
- To know the media for choosing the Instant food products

4. RESEARCH METHODOLOGY

Source of Data	Primary and Secondary data
Sampling technique	Convenient sampling
Sample size	120respondents
Tools and Technique	Simple percentage analysis, Likert scale analysis, Ranking scale analysis



5. STATISTICAL TOOLS

- Simple Percentage Analysis
- Likert Scale Analysis
- Ranking Scale Analysis

6. REVIEW OF LITERATURE

Misra Pranesh (2011), presented that monopoly is not always good. Competition is essential for stimulating growth development is a lonely and tortuous task. Maggi was launched in instant noodle category way back in early 1980s. Today it dominates the category with around 85% share, but the category has growth to a mere 1300 crore INR in 30 years. Not a huge category for a country with over a billion mouths to feed. Compare this with the high competition category like the consumer and

household durables, automobile, two wheelers, mobile and other categories. The growth rate of 15% yearly is thanks to arrival of serious competition from organized players.

K. Baskar et al. (2013), reported that consumers buying behavior of instant food products is influenced by the traditional way of manufacturing process, traditional ingredients and the availability of products next to their shops

Dr. Gomathi D. (2016), The said study has taken overview of the status of Maggi before and after ban in the market. Paper has highlighted scenario of Maggi in general .however the specific period and the preferences of consumer is out of the scope of this study

7. TABLE

Rank Correlation-while purchasing instant food

S. no	factor	Rank I	Rank II	Rank III	Rank IV	Rank V	Total score	Rank
1.	taste	88(5)	19(4)	7(3)	3(2)	3(1)	546	1
2.	price	24(5)	69(4)	21(3)	5(2)	1(1)	470	3
3.	easy to make	42(5)	41(4)	30(3)	4(2)	3(1)	475	2
4.	reliability	18(5)	43(4)	43(3)	14(2)	2(1)	421	5
5.	quality	41(5)	40(4)	19(3)	10(2)	10(1)	452	4
6.	good for health	34(5)	20(4)	28(3)	20(2)	18(1)	392	6

INTERPRETATION

From the above table it is understood that taste ranked as 1, easy to make ranked as 2, price ranked as 3, quality ranked as 4, reliability ranked as 5, good for health ranked as 6

According to the satisfaction of the taste ranked as first while purchasing instant food product.

FINDINGS FROM PERCENTAGE ANALYSIS

- Majority (64.2%) of the respondents are between the age group of 20-30 years.
- Majority (86.7 %) of the respondents are Female
- Majority (59.2%) of the respondents are Unmarried.
- Most (40%) of the respondents are under graduates
- Majority (47.5%) of the respondents are students.
- Most (30.8%) of the respondents earning between Rs.21000-Rs.30000
- Most (53.3%) of the respondents are residing in Semi-Urban areas.
- Majority (79.2%) of the respondents belongs to Nuclear family.

- Majority (57.5%) of the respondents have Up to 4 members in their family
- Majority (40%) of the respondents are conscious of Instant food products through Advertisements
- Most (41.7%) of the respondents are influenced by Friends to buy instant food products.
- Most (24.2%) of the respondents are using Instant food products quite for 3 years.
- Most (40%) of the respondents are spending Below Rs.500 for purchasing instant food products.
- Most (58.3%) of the respondents are purchasing instant food products Monthly
- Most (34.2%) of the respondents preferring instant food products during Evening.
- Most (37.5%) of the respondents prefer Departmental stores to purchase Instant food products.
- Most (29.2%) of the respondents prefer to buy Instant noodles.
- Most (33.9%) of the respondents prefer instant food products because it is convenient to them.
- Most (24.3%) of the respondents are influenced by Availability of instant food products.



- Most (49.6%) of the respondents have faced Health problems using instant food products.
- Majority (51.2%) of the respondents will not recommend Instant food products to others.

FINDINGS FROM LIKERT SCALE ANALYSIS

- The likert value is 3.32 which shows the satisfaction level of the respondents towards Maggi
- The likert value is 2.71 which shows the satisfaction level of the respondents towards Nissin(top ramen)
- The likert value is 2.85 which shows the satisfaction level of the respondents towards Sun feast
- The likert value is 2.85 which shows the satisfaction level of the respondents towards Ruche
- The likert value is 2.73 which shows the satisfaction level of the respondents towards MTRmix
- The likert value is 2.82 which shows the satisfaction level of the respondents towards Nestle
- The likert value is 2.84 which shows the satisfaction level of the respondents towards Aachi
- The likert value is 2.46 which shows the satisfaction level of the respondents towards Double horse

8. SUGGESTIONS

- Consumers are facing many health problems, so the producers can produce sort of Natural Instant food products considering the health of the consumers.
- Producers should produce instant food products in a way that the instant food products are available to the consumers whenever they need. The producers should aware of demand of the consumers and produce accordingly.
- Innovative technology should be explored in order to increase the shelf life of the product variants and simultaneously reduce the cost of the product.

9. CONCLUSION

Instant food products play an important role in everyone's life. The food habits in India have changed due to western influence and usage of instant foods also rise. Instant food consumption is increased due to increase in urbanization, breaking up of the traditional joint family system, convenience, changing lifestyles and increasing level of income. The consumer's relationship with food and other

everyday goods has changed dramatically, not only in the way products are purchased, but also in the way they are consumed. Most of the respondents are aware of various brands of Instant food products. The ready availability and the time saving are the reasons for consuming Instant food products.

From the study, it is been found that majority of the respondents are female belongs to nuclear family are aware of instant food products through advertisements, using instant food products for more than 3 years. They purchase instant food products monthly. The main problem faced by the consumers is health problems. Considering the health problems, producers can reduce the usage of preservatives in instant food products. This will make the consumers to buy more instant food products and in return will increase the marketplace for instant food products.

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A STUDY ON FINANCIAL PERFORMANCE OF WHIRLPOOL LTD

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ABSTRACT

The financial statement is the method of reviewing and analyzing company's accounting reports in to order past, present, and future performance. Its prepared in order to meet requirement, effectively so that future profitability and cash flow forecast. This study is based on secondary data and balance sheet and profile and loss account for the last 5 year of whirlpool ltd is a to analysis is financial position. The tools used for this ratios analysis like liquidity ratios, profitability ratio, solvency ratio and activity ratios. The suggestions of the study the reveal that the profit of the of the company need to raise to increase productivity and decreases expenses and also the company should short term liquidity , so that it help to meet pay of current due. Thus the study conclusion the company has to take necessary step to control its cost, to increase volume of sales and profit to increase in the future year

KEYWORDS: liquidity performance, financial performance, growth aspects

1. INTRODUCTION

Financial statement refers to formal and original statements prepared by a business to disclose its financial information. Financial statements are prepared to satisfy external reporting obligations and also for decision purposes. They play a vital role in setting the framework of managerial decisions. Financial performance analysis includes analysis and interpretation of monetary statements in such how that it undertakes full diagnosis of the profitability and financial soundness of the business. It deals with the financial strength and weakness of the business concern accurately establishing a relationship between the balance sheet and income statement. These statements are the result of summarized process of accounting and are therefore the sources of data the basis of which conclusions are drawn about the profitability and therefore the financial position of the concern.

2. STATEMENT OF THE PROBLEM

The primary objective of a business undertaking is to earn profits. Profit earning is considered for the survival of the business. A business needs profit not only for its existence, but also for expansion and diversification the investors want an adequate return on the investment as well as workers, creditors. And a business enterprise can discharge its obligation to various segments of the society only through earning of profit.

3. OBJECTIVE OF THE STUDY

- To analyze the turnover position of whirlpool.
- To evaluate liquidity and profitability position of whirlpool.
- To know the operating efficiency of whirlpool.
- To offer suitable suggestions for effective function.

4. RESEARCH METHODOLOGY

Source of Data	Secondary data
Period of Study	2015-2016 to 2019 – 2020
Framework of analysis	Financial Statements
Tools and Techniques	Ratio analysis



5. STATISTICAL TOOLS

The following statistical tools were applied to analyze the statistical data collected for calculation of financial performance analysis:

Ratio Analysis

- Liquidity Ratios
- Profitability Ratios
- Solvency Ratios
- Activity Ratios

6. REVIEW OF LITERATURE

P Kasthuri & C Rajendran (2020) this study aims to analyses the financial performance of two top most home appliance companies in India, duration taken for the period is 5 years from 2014-2018 for both the companies. Most of the ratios are not correlated with order ratios in both the companies. Only 2 ratios are correlated in TTK prestige and 1 ratio in BEL using correlation of co-efficient. Using regression model it is evaluated that there is no variables dependent on other variables dependents on other variables in both companies.

Dr. R Jayanthi (2018) from this study growth of the company started slowing down over the last couple of years due to a variety of factors such as volatility in the prices of raw materials besides uncertainties in their availability, aggravated by natural calamities like floods and cyclone in the areas where the company's products have strong presence.

Dr. B. Saranya, "Dr. K.M. Chinnadorai (2017), it is concluded that majority of the company's net sales, operating profit and dividend are found significant. It is also necessary for the company to build a confidence of the customers and the public through their strategies. Similar study can be extended by taking more number of companies covering the India as a whole. More awareness campaign created to improve the sales of electronic goods. The government should take adequate step to bring down the level of tariffs so that it will enhance the customer to make their purchase easily. From the study it is concluded that companies should concentrate much on their operating profit and thereby increase their sales.

7. TABLE

Year	Current Ratio	Liquidity Ratio	Net Profit Ratio (%)	Proprietary Ratio (%)	Total Asset Turnover Ratio (%)
2015-16	1.81	1.12	6.98	187.41	1.53
2016-17	1.78	1.07	7.88	253.51	1.37
2017-18	1.69	1.05	7.29	275.93	1.49
2018-19	1.80	1.15	7.55	426.82	1.45
2019-20	2.09	1.32	7.96	469.04	1.38

- The current ratio shall be 2:1. During 2015-16 firm achieves the current ratio 1.81 and lowest ratio in the year 2017-18 was 1.69. But in the year 2019-20 they again have reached 2.09. However, the management of the whirlpool ltd should initiate necessary steps to utilize and be like.
- The standard form of quick ratio is 1.1. Liquid ratio is decreased in the year 2017-18 to 1.05 from 1.07. And it has increased to 1.15 in the year 2018-19 and then it increased to 1.32 in

the year 2019-20. However the ratio is more the standard ratio so it is satisfactory.

- The table indicates that in the year 2015-16 net profit was 6.98 and the ratio increased in the 2016-17 as 7.88. In 2017-18 in has decreased 7.29. The net profit ratio has gradually increased 2018-19 and 2019-20 as 7.55 and 7.96.
- From the above data in the year 2015-16 the proprietary ratio 187.41. And the proprietary ratio is gradually increased in the year 2017,



2018, 2019 and 2020 as 253.51, 275.93, 426.82 and 469.04.

- Total asset turnover ratio during the study period 2015-16 as 1.53. In the year 2016-17 move downwards 1.37. In the year 2017-18 move upward 1.49. In 2019-20 gradually decreased 1.45 and 1.38.

8. SUGGESTIONS

- ❑ The liquid asset should be maintained properly order to improve its liquidity position in the future.
- ❑ The profit of the company need to raise through increasing productivity and decreasing expenses.
- ❑ They should increase its short term liquidity of the company, it helps to meet the pay of current dues.
- ❑ The company has to take right strategy to regain the net profit in the coming year.

9. CONCLUSION

The study concludes that is significant different in the performance evaluation of Whirlpool Limited in the terms of liquidity, profitability and activity ratios managerial efficiency position. Financial performance is basic instrument, which provides all information about the financial position and operational efficiency of the company. Thus, the findings and suggestion which will be helpful for the development and improvement of the company. The Company has to take appropriate steps to control the cost, increased the volume of sales, profit in the future years.

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A STUDY ON CONSUMER SATISFACTION OF KIA CARS WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

The purpose of the paper is to study the consumer satisfaction towards Kia cars .100 samples were taken in Coimbatore city. Both Primary data and Secondary data were used in the research. Percentage analysis, Chi-square analysis and Weighted average analysis were used as a data analysis tools. People consider maintenance and style as the influencing factor to buy the cars. People are highly satisfied with the maintenance and cost. Poor fuel economy is the problem faced by the respondents.

KEY WORDS: Chi-square analysis, fuel economy.

1. INTRODUCTION

Hyundai's sister brand Kia Motors entered the Indian market with the introduction of the Seltos SUV in August 2019. The Seltos' success was followed by the launch of the Carnival MPV at the 2020 Auto Expo, and the Sonet sub-4m SUV that was launched a few months back. As far as sales are concerned Kia Motors is currently the fourth best-selling car manufacturer in the Indian market, with a market share of 7.3 per cent.

2. STATEMENT OF THE PROBLEM

What are the features of the brand quality?

What are the factors determining the brand quality?

3. OBJECTIVES OF THE STUDY

- To know the study the socio-economic characteristics of respondents.
- To find out the factors influencing the choose of kia car.
- To study about the satisfaction level of the customers of kia car.
- To study the problems faced by customer in kia car.
- To offer suggestions based on findings of the study.

4. RESEARCH METHODOLOGY

Source of data	Primary and Secondary data
Sampling technique	Convenient sampling
Sample size	100 respondents
Tools and technique	Simple percentage analysis, Likert scale analysis, Rank analysis

5. STATISTICAL TOOLS

- Simple percentage analysis
- Likert scale analysis
- Rank analysis

6. REVIEW OF LITERATURE

The department of Economic and marketing research of M/s Hindustan Motors Ltd, Calcutta (2019)¹ conducted s study on "The automobile industry in India" and reported that the first motor car was imported into India in 1898, and for nearly 30



years no attempt was made even to carry out. Till 1948, the assembly of motor vehicle was not undertaken in India.

Mary C. Gilly., et al., (2019)² in a article entitles, “Past purchase consumer processes and the complaining consumers” ,attempts to incorporate both of these post purchase grievances by examining

the attitude and behaviour of complaining consumers. 521 consumers who complained to a major oil company, out of a stratified random sample of 964 complaints, were taken as the suspects of the study. Stratified study tools such as simple percentage, chi-square test and spearman Rank Correlation were used to analyse data.

7. TABLE

Prompted To Buy Kia

S.No	Prompted to buy KIA	Number of Respondents	Percentage (%)
1	Brand image	20	20
2	Service	15	16
3	Maintenance	38	38
4	Price	13	13
5	Promotion	14	14
	Total	100	100

INTERPRETATION

The above table shows that 20% of the respondents say promotion to buy KIA is Brand image, 15% of the respondents say promotion to buy KIA is Service, 38% of the respondents say promotion to buy KIA is Maintenance, 13% of the respondents say promotion to buy KIA is Price and 14% of the respondents say promotion to buy KIA is Promotion.

INFERENCE

Here mostly 38% of the respondents say promotion to buy KIA is Maintenance.

8. FINDINGS

- Here mostly 44% of the respondents age is 21-30 years.
- Here majority 54% of the respondents were Male.
- Here majority 53% of the respondents were Unmarried.
- Here mostly 37% of the respondents education level is Diploma level.
- Here mostly 33% of the respondents were Self employed.
- Here mostly 44% of the respondents income is Rs 20,000-40,000.
- Here majority 58% of the respondents were from Joint family.
- Here mostly 35% of the respondents have 5 to 6 members in their family.
- Here mostly 36% of the respondents owning KIA i20.
- Here mostly 44% of the respondents aware about about KIA car through Television Advertisement.

- Here majority 51% of the respondents say sales executive attitude is Very Good.
- Here mostly 37% of the respondents say delivery time offered by KIA dealers is Two to three Week.
- Here mostly 30% of the respondents says their decision influenced by Dealer
- Here majority 78% of the respondents says car price is reasonable.
- Here majority 65% of the respondents feel KIA car is Moderate.
- Here mostly 44% of the respondents say oromption to buy KIA is Maintenance.
- Here mostly 34% of the respondents feel Comfortable during KIA car driving .
- Here mostly 49% of the respondents were satisfactory with service provided by KIA dealers.
- Here majority 52% of the respondents service their car from Authorized dealer.
- Here majority 61% of the respondents say there is available of spare parts.
- Here majority 57% of the respondents say handling complaint is Good.
- Here majority 65% of the respondents were information about the free service.
- Here majority 79% of the respondents complaints noted and attended.
- Here majority 59% of the respondents were fully satisfied with the seating capacity.

9. SUGGESTIONS

- After conducting the survey and knowing the market, I realized that, the company



should keep in mind the need of young generation.

- Company should improve the promotion strategy of product. Company should improve the promotion strategy of Add-on services. It will be beneficial for the company to make the warehouse near to the showroom and there should be roof facility, adequate security facility in the warehouse.
- The Company should know its customers satisfaction level throughout doing periodic surveys. Periodic surveys can treat customer satisfaction directly. Company should improve/upgrades its employee's product knowledge, market situation, and its competitor's knowledge by giving proper training to employee.
- Company should upgrade or innovate its new product. The Company should not only concentrate on the customer satisfaction but also the company led to monitor their competitor's performance in there are as of operations.
- The Company should make changes according to the other competitors & according to the customer's expectations.

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10. CONCLUSION

It has been observed that most customers are satisfied with pre sales services similarly most of these customers are dissatisfied with the post sales service which is the matter of concern for the company. A car needs to improve some parts of products specifically the interiors. High customer satisfaction level helps the company to retain its existing customer as well as generate new customer through word to mouth publicity.

Customer satisfaction index is a good tool to make improvements in the products and services of the company. And therefore should utilize carefully & kept as confidential as possible.

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A STUDY ON FINANCIAL PERFORMANCE OF SAKTHI SUGARS LIMITED

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ABSTRACT

The gift take a look at of the studies entitled "A STUDY ON DINANCIAL PERFORMANCE OF SAKTHI SUGARS LIMITED". The take a look at become primarily based totally on secondary facts from records, reviews and profile of the organization. The validity of any studies is primarily based totally at the systematic approach of facts series evaluation. The ratio evaluation is the manner of figuring out the monetary soundness and value effectiveness of the organization way of means of setting up dating among the gadgets of stability sheet and earnings and loss a/c. The gift take a look at has thrown principal awareness in ratio evaluation from the 5years stability sheet and earnings and loss a/c. An goal of the take a look at consists of the profitability, value of products offered and different revel in employer usual monetary overall performance of the employer. Short time period-long time function of the employer. Based at the 5years stability sheet and earnings and loss a/c appropriate inspiration had been given way of means of the researcher for a higher soundness and value effectiveness of the employer

KEYWORDS: Financial overall performance, Ratio evaluation, Profitability ratios.

1. INTRODUCTION

Financial overall performance is a subjective degree of the way properly a organization can use property from its number one mode of enterprise and generate revenues. This time period is likewise used as a fashionable degree of an organization's usual monetary fitness over a given length of time, and may be used to examine comparable corporation throughout the identical enterprise or to examine industries or sectors in aggregation. There are many unique approaches to degree monetary overall performance, however all measures must be taken in aggregation. Line gadgets inclusive of sales from operations, running earnings or coins float form operations may be used in addition to overall unit income. Furthersome, the analyst or investor can also additionally want to appearance deeper into monetary statements and searching for out margin boom costs or any declining debt.

2. STATEMENT OF THE PROBLEM

By the usage of the monetary announcement the shareholders cannot discover how the control sources are correctly utilized by the employees. Financial control tells a enterprise proprietor what occurred however they do now no longer inform him why it occurred. A enterprise supervisor wishes to discover the basis of the hassle earlier than it is able to be solved. Every attempt has been made to finish relevantly and endorse for high-quality overall performance of the employer.

3. OBJECTIVES OF THE STUDY

The present study is carried out with the following objectives

- To examine the liquidity and the profitability function of the Sakthi sugars limited
- To recognize the comparative and value evaluation of the employer.
- To study the trend analysis of the employer
- To study the various departments in the organisation and analyse its functions individually.



4. RESEARCH METHODOLOGY

Source of data	Secondary data
Period of study	2013-2014 to 2017-2018
Framework of analysis	Financial statements
Tools and techniques	Ratio analysis

5. STATISTICAL TOOLS

The following statistical tools were applied to analyse the statistical data collected for calculation of financial performance analysis:

Ratio analysis

- Liquidity ratios
- Profitability ratios
- Solvency ratios
- Activity ratios

6. REVIEW OF LITERATURE

Mr.S.P. KarthikDr.A.Ramesh (2020) ISSN: 2278-4632 Volume 10 Issue-5 No. 14 May 2020 The focusing on “Productivity and financial health of Tamilnadu co-operative sugar industries: A Study” are playing a vital role in determining the financial viability of the sugar industries. The analysis of financial statements is the process of evaluating the financial viability, profitability ratio, long term solvency ratio, current asset, liquidity ratio and efficiency in asset utilization of the sugar industries operating in the state of Tamil Nadu during the financial year between 2007-2008 and 2016-2017.

Dr.Ashutosh Gupta Dr.(ms.) Gupreet Randhawa (2018) Indian Journal of Accounting (IJA) ISSN: 0972-1479(print) 2395-6127(online) volume 50(1) pp.87-96 ‘The Punjab Sugar Industry comprises of co-operative and private sugar mills. The private sugar mills are operating better than the co-operative sugar mills with respect to sugar production, number of working days, recovery percentage, cane crushed and daily crushing capacity (Statistical Abstract of Punjab, 2016).

S.Lakshmi (2018) IJRTI Volume 3 issue 5 ISSN: 2456-3315 financial performance of select sugar mills in Tamil Nadu ‘Sugar mills are one of the Agro-based industries and in India it is the second largest next to cotton and textile industry. History says that the art of making sugar went to Persia and subsequently to the world from India. The production of sugar, first from sugarcane and later from beets, is one of the oldest and best-studied technological processes.

7. FINDINGS

- ✓ The current ratio was lower than the ratio’s standards of 2:1 in all the six years. The current ratio is not at the satisfactory level so the company needs to increase the current assets or by decreasing current liabilities.

- ✓ The liquid ratio was found very low in all the years so that the firm must keep the proper level of bank balance, cash at hand, and short-term investment in current assets.
- ✓ The absolute liquid ratio was found to be in a below position of the standard norms.
- ✓ The Gross Profit ratio reflects the profit margin on its trading and manufacturing. The firm maintain this ratio in higher level and try to reduce the cost of goods sold and increase the sales.
- ✓ The Net Profit ratio indicates the company’s capacity to face unfavourable economic conditions such as price competition, low demand, etc. Obviously, higher the ratio the better is the profitability. Hence, try to sustain this ratio at a higher level because this ratio reflects the operating efficiency and performance of the company but it is found that the ratio is reflecting loss. As we know this ratio is very useful for the investors.
- ✓ The Return on Investment ratio has an decreasing trend during the period of study. The company can provide fair rate of return on investment so that it eliminates the negative signs of the study.
- ✓ Equity Ratio was found to be decreasing with the negative sign in the financial year of 2019-2020 when compared to the previous years.
- ✓ For maintain, Inventory Turnover ratio company can be decided purchasing policy. If purchasing policy is to be planned it means to avoid the unnecessary investment in inventory. In the same way, a company should have to increase operating efficiency. Therefore, the company can maintain inventory turnover ratio at higher level as it is desirable for the company.
- ✓ Fixed assets turnover ratio generates sales with higher ratio, but the table shows there is a fluctuating ratio where there is no increase to 1.00 ratio.
- ✓ The higher level of Total asset turnover ratio is preferable for the company as it indicates that the efficient and well organised management of the current asset. The higher ratio means current asset is to be easily converted into cash and a working capital cycle is to be smooth going.



8. SUGGESTIONS

- ✓ The current and quick ratio was below the standard norm. As a whole, it suggests that the business is not well placed to pay its debts. If the company maintains the good growth for the fourth coming years then the profit can be multiplied.
- ✓ According to the trend analysis of profitability ratio there is a small variation. If the company reduces the debtor then the interest can be reduced which leads to further profit for the company in future years.
- ✓ The company may be maintained in the current assets properly so that it will lead to a better position of working capital. The company may reduce the creditor's position by repaying the loans in short-period for in better positions for future.
- ✓ The management should try to utilize their production capacity fully in order to reduce factory overheads and to utilize their fixed assets properly.
- ✓ To strengthen the financial efficiency, long-term funds have to be used to finance core current assets and a part of temporary current assets. It is better if the company can reduce the oversized short-term loans and an advance eliminates the risk of arranging finance regularly.

9. CONCLUSION

The study is about analysing the balance sheet of Sakthi sugar using financial analysis. The study analysed the balance sheet with the tool ratio analysis, comparative balance sheet, trend analysis and cost sheet analysis. The conclusion is that the project can be used as a supporting factor to analyse about the performance of the company and net profit of the company is been dropping if the company reduces the inventory cost and no of debtors then the net profit can be increased in the future.

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A STUDY ON CUSTOMER SATISFACTION TOWARDS MYNTRA APP IN SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Electronic commerce support selling, buying and trading of product or services over the internet. Internet marketing first began 1990 with just text-based website which offered product information. Now with the growth in the utilization of the internet it is observed the internet marketing is not just selling of product alone but in addition to this it also involves information about product.. With the significant growth of internet usage, internet marketing is found to expand its horizons. As of 2020, customers can shop online using a range of different computers and devices, including desktop computers, laptops, and smartphones. Online shopping has gained a lot of importance in the present marketing condition. But every application are not known to the public.

KEY WORDS: *Internet marketing, smartphone, text-based websites*

1. INTRODUCTION

Purchasing product or services over the internet, online shopping has attained immense popularity in recent days mainly because people find it convenient and easy to shop from the comfort of their home or office and also eased from the trouble of moving from shop to shop in search of good of choice. Retail is a process of selling goods and services to customers through multiple channels of distribution. Internet marketing utilizes the power of electronic commerce which refers to any market on the internet. With the significant growth of internet usage, internet marketing is found to expand its horizons.

2. STATEMENT OF PROBLEM

Myntra is considered as the fashion dealing app. Most of the women go for online shopping nowadays. The problem area of the survey is consumer awareness and satisfaction of Myntra App among women in Coimbatore.

3. OBJECTIVES OF STUDY

- To know the women customer satisfaction level with Myntra App.
- To study business models of Myntra App.
- To study future of Indian e- commerce industry.

4. RESEARCH METHODOLOGY

Sources of Data	Primary and Secondary data
Sampling technique	Convenient sampling
Sample size	140 respondents
Tools and Technique	Simple percentage analysis, Likert scale analysis.



4. TABLE

Table Showing Preference of Respondents Towards

S.No	Purchasing Options	No.Of Respondents	Percentage
1	Service	27	19.2%
2	Discount and offers	35	25%
3	Choices of products	29	20.17%
4	Schemes and offers	18	12.85%
5	Others	31	22.14%
	TOTAL	140	100%

5. REVIEW OF LITERATURE

Dr.J.Sulaiman (2016) study assessed the level of satisfaction of the online customer relating to their various demographic variables, website chosen for online purchase, product feature as well as website features. The analysis part of the study revealed the demographic variables are significantly expect in case of the annual income where it is insignificant. With regards to the websites chosen and the level of satisfaction of the online customer they relationship is not significant. From the point of type of the product purchased the level of satisfaction of the online customer is not significant.

Dr.P.Senthilkumar (2017) pointed out the consumer had sufficient time to visit shopping center's searching for various product. Many consumers prefers bargaining and decide the purchase after physical examination of the commodities. The entire process can range from few hours to week depending on the quality, quantity and source of purchase. Today there is radical change in entire scenario. Everything in todays world intyernet oriented like electronic data interchange E-Mail, E-Business and E-Commerce. E-Commerce is exchange of information using networking based technologies.

6. FINDINGS

- ↪ It is found that Majority 84.3% of the respondents are Unmarried
- ↪ It is found that Majority 65.7% of the respondents are Nuclear family.
- ↪ It is found that Majority 68.6% of the respondents belongs to Undergraduate.
- ↪ It is found that Majority 77.1% of the respondents earn income below 50000.
- ↪ It is found that Majority 69.3% of the respondents belongs to Professionals.
- ↪ It is found that Majority 42.9% of respondents saying that convenience is the reason for choosing online shopping.
- ↪ It is found that Majority 48.6% of respondents are using Amazon online application.

- ↪ It is found that Majority 48.6% of the consumers are satisfied by using online shopping.
- ↪ It is found that Majority 50% of the consumers are giving importance to the Trust as an Mostly important factor influenced in online shopping.
- ↪ It is found that Majority 50.7% of the consumers are giving importance to the Discount as an important factor influenced in online shopping.
- ↪ It is found that Majority 34.2% of the consumers are giving importance to the Schemes and Offers as an important factor influenced in online shopping .
- ↪ It is found that Majority 46.4% of the consumers are giving importance to the Service as an important factor influenced in online shopping .
- ↪ It is found that Majority 39.3% of the consumers are in the neutral position in awareness about Myntra App.
- ↪ It is found that Majority 67% of the consumers are using Myntra App Recently because there not having more awareness about this Mynta App.
- ↪ It is found that Majority 26.4% of the consumers are saying that Low risk is the important factor influence them to use Myntra App.
- ↪ It is found that Majority 58.6% of the consumers are mostly using cash on delivery as their regular mode of payment.

Findings from Likert Scale Analysis

The likert scale value is 3.8 which is greater than the mid value (3), so the re respondents are satisfied on online shopping .

7. SUGGESTIONS

In Myntra app there are more procedures to do our online shopping so it is difficult to use this so the procedures can be reduced. It is little diifficult to do the process because illustrate will face more difficulties to use this Myntra app so processes can be understandable. Till know there is no proper



awareness among the people so advertising activities can be even more better.

8. CONCLUSION

This study we came to know that the awareness about the myntra app is very less among the people. But the users of myntra app were very comfortable and they are benefitted by the application. Promotional activities must be improved to increase the users of myntra app. Most of the respondents are women so women are becoming an successful entrepreneur so that our economy also becoming developed.

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A STUDY ON FINANCIAL PERFORMANCE OF ELGI RUBBER COMPANY LIMITED

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ABSTRACT

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. The study used five years of Oracle financial services software limited company data and the main objective of the study is to estimate the profitability of the business concern. The tools used for the study are liquidity ratio and profitability ratio. The suggestion given is that the company's day to-day cash management need to be improved and it has to improve the efficiency at converting sales into actual profit to enjoy the best profit.

KEYWORDS: Profitability ratio, operating efficiency, improve sales.

1. INTRODUCTION

Financial statements are prepared primarily for decision making. The statements are not end in them but are useful in decision -making context. The balance sheet may be described as financial cross section taken at certain intervals and the coming statements as a condensed history of the growth and delay between cross sections.

Financial statements are very helpful in giving various indicators with the help of techniques popularly known as ratio-analysis is restored the technique is called as analysis and relation of financial statements. The financial statement provides the information for financial analysis. The analysis of financial statement is an important aid to financial analysis. They provide information on how the firm has performed in past and what is its current financial position. The utility of such statement is that a forecast may be made of the

prospects of future earning ability to pay interest, debt and profitability of sound dividend policy.

2. STATEMENT OF PROBLEM

The financial statement provides the basic data for financial performance analysis. The financial statements provide a summarized view of the financial position and operations of the firm.

3. OBJECTIVES OF THE STUDY

- ❖ To measure the utilization of various assets during the period.
- ❖ To trace financial strength and weakness.
- ❖ To know the Profitability, Activity, Liquidity & Financial stability position of ELGI RUBBERS COMPANY LIMITED.
- ❖ To provide suggestions for improving the overall financial performance of the ELGI RUBBER COMPANY LIMITED.

4. RESEARCH METHODOLOGY

Source of data	Secondary data
Period of study	2015-2016 to 2019-2020
Framework of analysis	Financial statements
Tools and techniques	Ratio analysis

5. REVIEW OF LITERATURE

- ❖ **Dr. M.A. Dhandapani (2014).** A firm can use assets from the primary mode of business and

generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be



used to compare similar firms across the same industry or to compare industries or sectors aggregation. There are many different ways to measure financial performance, but all measures should be taken in aggregation.

- ❖ **Prof Mr.S.Sabarinathan (2012).** The validity of any research is based on the systematic method of data collection analysis. The Ratio analysis is the process of identifying the financial soundness and cost effectiveness of the firm by establishing relationship between the items of balance sheet and profit & loss a/c. The present study has thrown major concentration in ratio analysis, from the 5

years balance sheet and profit & loss a/c. An objective of the study includes the profitability, cost of goods sold and other experience.

- ❖ **Dr.V.Srividya (2014).** To understand the financial and condition of a firm, its stakeholders look at the financial statements, viz., the balance sheet, the profit and loss account. The analysis of the financial statement is a process of evaluating the relationship between component parts of financial statement top obtains a better understanding of the firms, position and performance.

6. TABLE SHOWING FINANCIAL POSITION OF ELGI RUBBER COMPANY LIMITED

Year	Current Ratio	Liquid Or Quick Ratio	Fixed Turnover Ratio	Absolute Liquid Ratio	Total Asset Turnover Ratio	Net Profit Ratio	Return On Asset Ratio	Current Asset Turnover Ratio
2015-2016	1.06	0.53	1.39	0.06	0.64	-3.16%	-2.05%	1.72
2016-2017	1.17	1.02	1.48	0.16	0.67	-1.07%	-0.72%	1.56
2017-2018	1.01	0.44	1.44	0.12	0.64	-1.49%	-0.95%	1.51
2018-2019	1.06	0.46	1.68	0.12	0.71	-3.93%	-2.81%	1.60
2019-2020	0.98	0.42	1.61	0.10	0.69	-4.14%	-2.89%	1.54

7. FINDINGS

- ❖ From the study, the following findings were made;
- ❖ From the analysis, its shows that there are fluctuations in the current assets and there is significant decline in growth during the study period.
- ❖ The quick asset ratio of the company is in decreasing position. The absolute liquid ratio of the company was increase from 0.06-0.1.10.
- ❖ The fixed asset turnover ratio of the company is in upward position, but value fixed asset is downward position.
- ❖ Study finds that, the net sale of the company is in increasing position during the study period.
- ❖ The current asset turnover ratio is but regarding to the 2018 there is decline. In 2020 Study reveal there is growth in total asset turnover ratio.
- ❖ The Current asset to fixed asset ratio downward stage during the study period.

- ❖ The Net profit ratio is upward stage during the period of 2016, 2017, 2018 and during 2019, 2020 during it is in downward stage.

8. SUGGESTIONS

- ❖ The company should enhance its performance to face challenges and exploiting opportunities in future.
- ❖ Net sales of the company should be increased without the addition of fixed assets.
- ❖ The negative result happened due to lack of proper control on cost of production and sudden increase in prices of raw materials.
- ❖ The firm has to control cost of production through proper inventory management system.
- ❖ The company can concentrates more on reserves for the expansion of the business in the future.
- ❖ Companies try to increase production and sales for getting maximize profit to strengthen financial position.



- ❖ The management should utilize maximum production capacity.

9. CONCLUSION

The study was undertaken to analyze the financial performance of an ELGI RUBBER LIMITED COMPANY, COIMBATORE selected liquidity ratio, profitability ratio and activity ratio were calculated.

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A STUDY ON FINANCIAL PERFORMANCE OF COAL INDIA LIMITED

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ABSTRACT

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. The study used 5 years of Coal India Company's secondary data and main objective is to analyze the Profitability and Liquidity position of the company. Various tools like Liquidity Ratio, Profitability Ratio and Activity Ratio. The financial performance of Coal India Limited during the study periods is in satisfactory position, with the available data in the annual report, the researcher is able to give an opinion with regard to the company's performance.

KEYWORDS: *Profitability Ratio, Satisfactory Position, Annual Report.*

1. INTRODUCTION

Financial performance is an important which influences the profitability and liquidity of organization. There are many ways to measure financial performance but all measures should take in aggregate. Financial performance is a process of measuring and resulting a financial activity of the firm. A general purpose set of financial statements usually includes a balance sheet, income statement, statement of owner's equity and statement of cash flows. Financial performance indicators are quantifiable metrics used to measure how well a company is doing.

2. STATEMENT OF THE PROBLEM

Financial statement analysis is an important tool for measuring the financial performance of the company. Financial statement is used to judge the profitability

and financial soundness of a firm. In this study, an attempt is made to identify the financial strength and weakness of the firm by properly establishing relationship between the items in the balance sheet and profit and loss account of Coal India Limited Corporation. So I make an analysis with CIL to find out the effective utilization of funds. The petroleum industry faces tremendous price changes in the market. So I decided to make an analysis on the financial aspects of CIL in the fluctuating scenario.

3. OBJECTIVES OF THE STUDY

- To analyze the profitability position of the company.
- To study the liquidity position of the company.
- To analyze the strength and weakness of the company.

4. RESEARCH METHODOLOGY

Source of Data	Secondary Data
Period of Study	2015 - 2016 to 2019 - 2020
Framework of Analysis	Financial Statement
Tools and Techniques	Ratio analysis



5. STATISTICAL TOOLS

Ratio analysis is an important technique. It is powerful tool of financial analysis. Ratios are calculated for analyzing the financial performance of Coal India Limited Corporation.

- Liquidity ratio
 - a. Current ratio
 - b. Liquid ratio
 - c. Cash position ratio
- Profitability ratio
 - a. Net profit ratio
 - b. Return on asset ratio
 - c. Return on investment ratio
- Activity ratio
 - a. Inventory turnover ratio
 - b. Total asset turnover ratio

6. REVIEW OF LITERATURE

- Raja Narayanan Sandhir Sharma (2019) conducted study on financial performance of Maruti Suzuki to assess the attention of the numerous collections linked to a business and affected by the economic presentation of the business. The various tools and techniques were used trend analysis, ratio analysis on this study. An analysis comprises measuring the

accounting principles and the financial position of the company. Finally, the company has its financial trend in uphill order from preceding five years on this study.

- Dr.G.Kanagavalli R.Saroja Devi (2018) explained the financial performance of selected automobile companies to assess the profitability ratios indicate there is a decrease in the profit level, utilization of fixed assets and working capital in the last financial year. In this study, to know the risk and reward and to achieve higher returns and if possible with less risk. The positive strong relationship of liquidity ratio in this study and their shares will be safe and secured.
- J.Pavithra K.P.Thooyamani Kermiki Dkhar(2017) studied the analysis of financial performance with reference to jeppiaar cements pvt ltd is based on the financial performance of the firm by using ratio analysis, trend analysis. They suggested a strict credit policy should be maintained and sales promotion efforts can be adopted to increase sales. The present study of the company has improved quite a lot from the previous years and the company's overall financial performance is good.

7. TABLE

Year	Current Ratio	Liquid Ratio	Cash Ratio	Net Profit Ratio	Return On Investment Ratio	Total Asset Turnover Ratio
2015-16	2.31	2.06	1.01	18.29	40.96	95.85
2016-17	1.59	1.38	0.72	11.84	37.85	103.79
2017-18	1.35	1.23	0.62	8.17	35.37	99.79
2018-19	1.57	1.39	0.72	17.54	66.01	105.94
2019-20	1.72	1.59	0.59	17.38	51.94	89.97

- The current ratio of the company was highest in the year 2015 -2016 (2.31) and lowest in the year 2017 – 2018 (1.35)
- The liquid ratio of the company was highest in the year 2015 -2016 (2.06) and lowest in the year 2017 – 2018 (1.23)
- The cash position ratio of the company was highest in the year 2015 -2016 (1.01) and lowest in the year 2019 – 2020 (0.59)
- The net profit ratio of the company was highest in the year 2015 -2016 (18.29) and lowest in the year 2017 – 2018 (8.17)
- The return on investment ratio of the company was highest in the year 2018 - 2019 (66.01) and lowest in the year 2017 – 2018 (35.37)
- The Total asset turnover ratio of the company was highest in the year 2018 - 2019 (105.94) and lowest in the year 2019 – 2020 (89.97)

8. SUGGESTIONS

The financial performance of Coal India limited during the study period is in satisfactory position, with the available data in the annual report, the



researcher is able to give an opinion with regard to the company's performance. From the researcher's point of view the following are the suggestions made on the basis of findings

- The current and fixed assets should utilize of optimal level
- The company should maintain good cash position
- The company should invest their short term surplus fund in short term securities and it should made adequate arrangement of credit facilities with banks so to maintain a good liquidity position
- The debts have to control to avoid bad debts in future as it decreases the profit.

9. CONCLUSION

The study has been under taken with the objective of evaluating the financial performance of Coal India Limited. The study is about analyzing the balance sheet of Coal India Limited using financial analysis. The study analyzed the balance sheet with the tools ratio analysis liquidity ratio, profitability ratio and activity ratio. From the study it concluded that the company's overall performance is in satisfactory level and it suffers from certain weakness. Hence if the given suggestions are implemented, the company can increase its profitability and improve their overall performance.

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THE EFFECTS OF INDUSTRIAL EFFLUENTS ON THE WATER QUALITY OF ABA RIVER IN SOUTH-EASTERN NIGERIA

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ABSTRACT

This study examines the effect of industrial effluents on the water quality of the Aba River. In order to achieve this, a total of six water samples were collected each season and was analysed for different wastewater characteristics of temperature, water pH, Conductivity, Alkaline, Chloride, BOD₅, COD, DO, TS, THC, TDS, Zn, Cd, Fe, Pb, Cr, Total Coli-form and E-Coli. Using APHA Standard Analytical Method, the results shows that during dry season, temperature, pH, Chloride and Zn values were found to be lower than NESREA Standard. While TS, THC and Total Coli-form values were found to be higher than NESREA standard in dry season

KEYWORDS: Water Quality, Industrial Effluents

1.0 INTRODUCTION

1.1 Background of the Study

Industries are established to fulfil the demand of the ever increasing demand of the growing population (FEPA, 1991). This probably explains the reason why industrialization is considered the cornerstone of development strategies. It thus has a significant contribution to economic and human welfare. Hence, it has become a yardstick for placing countries in the League of Nations and an index of its political stature (Adekunle and Eniola, 2008). Industries despite manufacturing useful products also generate waste products in the forms of solid, liquid or gaseous which leads to the creation of hazards, pollution and losses of energy (Taliq *et.al*, 2006). In other words, industrialization like other human activities that impact on the environment, often results in pollution and degradation.

Worldwide, water bodies are the primary means for disposal of waste, especially the effluents

from industries that are near them. Wastes entering these water bodies are both solid and liquid forms (Osibanjo *et.al*, 2011). This results to contamination and pollution of the water bodies. Thus, water pollution is today a major problem in the global context and it has been suggested that it is the leading worldwide cause of death and disease (Olubinmi & Ndubuisi, 2011; Etem and Onianwa, 2013).

Human activities during the last century have polluted most rivers which happen as a result of spills and leakages of pollutants as well as regular discharge from processing activities. As a result, water bodies which are major receptacles of treated and untreated or partially treated industrial wastes have become highly polluted. Conventional pollutants (e.g. oil and grease), toxic pollutants (e.g. heavy metals, volatile organic compounds) and other non-conventional pollutants (e.g. nitrate, phosphate and ammonia) are often found in industrial wastewater which is often discharged into surface



water without adequate treatment. Although most of these compounds are present at low concentrations, many of them raise considerable toxicological concerns, particularly when present as components of complex mixtures. Heavy metals and complex organic compounds are the most important contaminants in wastewater effluents that are present in abundance and are toxic (Malik and Ahmed, 2002).

High levels of pollutants in river water cause an increase in biological oxygen demand (BOD), chemical oxygen demand (COD), total dissolved solids (TDS), total suspended solids (TSS), toxic metals such as cadmium (Cd), chromium (Cr), nickel (Ni) and lead (Pb) as well as faecal coli-form and hence make such water unsuitable for drinking, irrigation and aquatic life. Increased pollution loads in fresh water bodies increases the nutrient level of water and causes a violent alteration in pH, reduction in oxygen content and high osmotic pressure (Tiwazi and Chaurasia, 2011). The transfers of unfavourable releases from industries are thus detrimental to human and animal health and safety (Adekunle and Eniola, 2008). In 1956, cases of Mata-Bay disease were reported in Japan. The disease affects the brain, causing insanity and leading to death. The cause of the disease was traced to polluted water by industrial effluents containing methyl-mercury (Ci Jun, 1969). In 1970, a cholera epidemic in Jerusalem was traced back to the consumption of salad vegetables irrigated with raw wastewater (Ipeiyeda and Onianwa, 2011). Similar incident in 1979 was reported in Iraq in which 450 lives were lost and 6,500 persons hospitalized. It was identified as the cause of, the outbreaks of *Escherichia Coli* (E-Coli) in Canada. Other incidents of water pollution with smaller fatality were reported in 1982 at Niigata, India and Songhua, China. A *Cryptosporidium* outbreak in Milwaukee, Wisconsin, USA in 1993, which affected approximately 400,000 consumers and caused 54 deaths, was traced to contaminated water. Outbreak of cholera epidemic and other water related diseases were noticed in Nigeria on several occasions (Igomu, 2011).

Despite these prevalent outbreaks, the pressure on the world's water resources is growing (UNESCO, 2012). For example, water usage in North America has increased by approximately 800% from 1900 to 1995 while global water use in 2000, was estimated to be nearly three times than in 1950. As demand increases, pollution of surface water has further reduced the availability of fresh water for intended purposes. Report has it that over 5,200 water bodies in the United States do not meet

ambient water quality standards for their designated uses as a result of pathogens, while nearly 4,300 are impaired as a result of nutrients, causally linked to failed onsite treatment and disposal systems (Longe and Ogundipe, 2010).

Contributing to the menace of indiscriminate discharges of industrial effluents in receiving water bodies is improper disposal of wastes, particularly in urban centres of most developing countries. Presently open and indiscriminate discharge of effluents in drainages and river banks is one of the most critical problems facing Nigeria, as the volume of industrial waste is growing at an alarming rate. Unfortunately, the country still lacks adequate technology, resources and manpower required to effectively manage these wastes in an environmentally safe manner (Osibanjo *et al.*, 2011). It is against this background that the present study examines the effects of industrial effluents on Aba River.

The aim of this study is to determine the effects of industrial effluents on the water quality of Aba River. The specific objectives of this study are stated as includes;

1. To determine the extent to which the effluent discharged from selected industries affect the quality of water in Aba River.
2. To compare the characteristics (physical, chemical and biological) of the water of Aba River at different segment (upstream, fallout points and downstream) with NESREA wastewater discharge Limitation Standard.

The following research hypotheses are stipulated;

1. There is no statistical significant difference between physical, chemical and biological characteristics of Aba River at Upstream, Fallout point (discharge point) and downstream segments of the river at different seasons.
2. There is no significant difference in the selected industries wastewater quality discharged into Aba River and NESREA wastewater quality limitation Standard.

1.2 Study Area

The study area lies within Aba North and Obioma Ngwa Local Government Area of Abia State, Nigeria. This comprises of Okpolor Umuobo, Eziana and Ogbo communities along the bank of Aba River, with Eziana and Umuohia as fallout points community; Okpolor Umuobo as upstream point community; and Ogbo community as downstream point community along the course of Aba River (Figure 1).

Geographically, the study area lies between latitude $5^{\circ}07'00''$ to $5^{\circ}09'10''$ North and longitude



7°20'00" to 7°24'00" East which cover the sampled locations for the study (Figure 1). The study area is bounded to the North and west by Osisioma Ngwa Local Government Area, East by Obi-Ngwa Local Government Area, while the south is bounded by

Ogunwagbo Local Government Area (Figure 4). The study area is at the intersection of roads leading to Port Harcourt, Owerri, Umuahia, Ikot Ekpene and Ikot Abasi

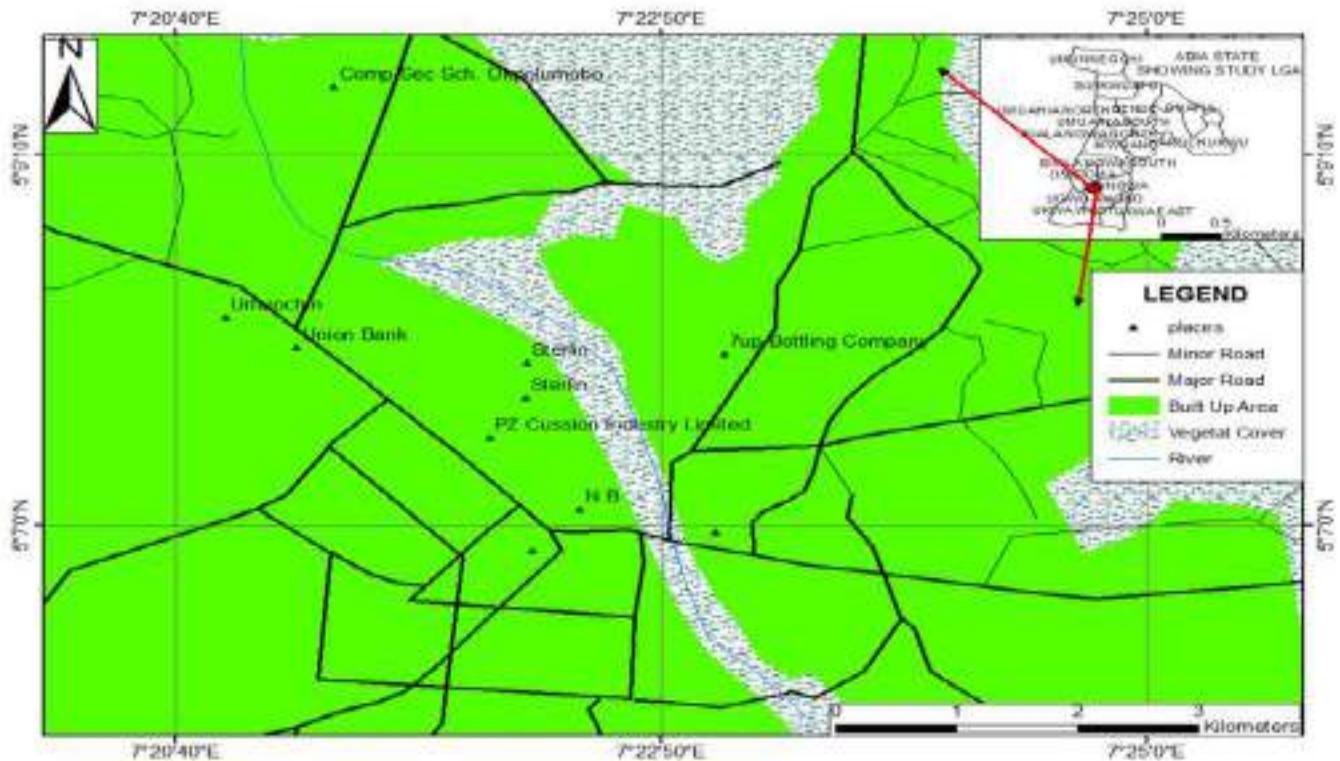


Figure 1: Map of Aba Showing the Study Areas with Insert Abia State Map

Source: Ministry of Land and Survey and Goggle Image. 2019

1.2.1 Geology and Hydrogeology of the Study Area

The study area is underlain by Benin formation, consisting of coarse sand interrupted by clay lenses of quaternary age. The Benin formation is a continental deposit of properly upper deltaic depositional environment; the formation is made up of very friable fine to coarse grained sand with minor intercalations of clay and gravel. The Benin Formation is composed mostly of high resistant fresh water bearing continental sand and gravel with clay and shale intercalations (Onyegocha, 1980). The

general thickness of the Benin Formation is variable and ranges from 200m at the northeast end to about 2000m at the southeast (Avbovbo, 1978), and the main water bearing formation in the area. It has good aquiferous potential. The Aquifer is about 1500m thick (Adindu, et.al, 2012). The depths to water are

shallow ranging from about 8m – 26m depending on the part of the study area.

2.0 LITERATURE REVIEW

2.1 Review of Relevant Literatures around the World

A great deal of literature exists on water resource pollution arising from effluent discharges from domestic, industrial and agricultural wastes. Phiri *et.al*, (2005) assessed the impact of industrial effluents on water quality of receiving rivers in urban areas of Malawi. This they did to assess the extent of chemical pollution in receiving river as affected by industrial effluents. Both the effluents and the water at selected points in the river were analysed for pH, Dissolved Oxygen, Electrical Conductivity, Suspended Solids, Nitrate, Alkalinity, Hardness, Chloride and Phosphate in the dry and rainy seasons. Their findings showed that the effluents were acidic in both the dry season (range: $4.2 \pm 0.02 - 6.5 \pm 0.02$) and in the rainy season (range: $4.2 \pm 0.05 - 5.6 \pm 0.01$).



While the levels of Dissolved Oxygen, Biological Oxygen Demand, Electrical Conductivity, Suspended Solids, Alkalinity and Chloride were relatively high in the dry and rainy seasons, the concentration of Phosphate and Nitrate were low in both seasons. The water upstream was found to be neutral (average pH, 7.40 ± 0.04) with high Dissolved Oxygen but low in the levels of the other parameters in both seasons. The water after the effluent receiving points was acidic and the levels of the other parameters were high, especially downstream. The result suggested that the water in the river was polluted and not good for human consumption. It therefore recommends the discouragement of careless disposal of waste water.

A similar study was carried out by the trio of Ghazal *et.al* (2010), on river Kabul in Pakistan. Like the former, the study evaluates the wastewater characteristics of some major industrial units in terms of Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), and Total Suspended Solids (TSS). In achieving this various representative samples were collected from the major industrial units like sugar, paper, ghee (Butter) and textile mills, and were analysed using standard laboratory techniques. The results indicated that the BOD of sugar, paper, ghee (Butter) and textile mills, is in the range of 2235mg/l, 1150mg/l, 844mg/l and 745mg/l, respectively. Whereas, the COD of sugar, paper, ghee (butter) and textile mills was noticed to be 3945mg/l, 2045mg/l, 2240mg/l and 1244mg/l respectively. There was a remarkable increase in the Total Suspended Solids (TSS) from 96 to 382mg/l and decrease in Dissolved Oxygen (DO) concentration from 8.8 to 6.7mg/l. Based on the findings, the authors recommend proper treatment of wastewater coming from industrial source before disposal into River Kabul in order to secure its national water quality.

Tariq *et.al*, (2006) examined the characteristics of industrial effluents and their possible impacts on quality of underground water. They evaluated the various industrial effluents of Hayatabad Industrial Estate in Peshawar and its possible impacts on quality of ground water. In achieving this, a total of 12 samples including 7 from industrial effluents at the discharge point of each industry, 1 from main drain receiving effluents of all industries and 4 from tube or dug wells in the vicinity of the estate were collected. This was done in March 2003 and analysed for Temperature, pH, Electricity Conductivity, Total Dissolved Solids Total Suspended Solids, Biological Oxygen Demand and Heavy Metal content. The result shows that the characteristics of effluents varied with the industry.

The pH of one effluent (from Aluminium Industry) was beyond the limit and of the remaining within the permissible limit whereas TSS of one effluent (Pepsi Industries) was within and of the remaining beyond the permissible limits comparing with the National Environmental Quality Standards (NEQS). The BOD was above the permissible limit in almost all of the effluents.

2.2 Review of Water Pollution Study in Nigeria

In Nigeria, the input of environmental pollutants in aquatic systems is a common phenomenon and has attracted the attention of scholars. Among them is; Ekhaise and Anyasi (2005). The duo examined the influence of breweries effluent discharge on the microbiological and physio-chemical quality of Ikpoba River, Benin city. This they studied to assess the extent of pollution of the water due to effluent discharge from the two brewery industries in Benin City. In achieving this, wastewater sample was collected for bacteriological analysis from five sampling stations along the course of the river, fortnight between March 2004 and May 2004. The samples were collected in new sterile 5 litre plastic containers. Samples for BOD and COD were collected separately in pre-sterilized bottles. The oxygen was fixed in situ by the addition of 1.2ml each of Winkler's solution A and B. All samples were transported to the laboratory and analysed within 6hours of collection. The result shows that total microbial population counts ranged from 1.0×10^3 to 4.8×10^3 cfu/ml and 1.3×10^7 to 5.7×10^7 cfu/ml for the fungal and bacterial isolates respectively. Total coli-form counts ranged from 4.3×10 MPN/100ml to 38.0×10 MPN/100ml. Micro-organisms isolated include saccharomyces cereviceae, Aspergillus niger, Penicillium Sp., Geotrichum Sp., Candida Sp., proteus Sp., Staphylococcus Sp., Echerichia coli, Streptococcus faecalis and bacillus Sp. Physio-chemical parameter studies revealed that Ikpoba River though show some parameters whose values are higher than the WHO acceptable limits. They conclude that there exist contaminations of the surface water due to the brewery effluent discharge.

2.3 The South-South Geo-Political Zone

Within the south-south geo-political zone, Nkponyeasua (2010) examined the effect of channelling wastewater into water bodies. This he conducted on the Orogodo River in Agbor, Delta state, Nigeria. He observed that the river which was previously used for carrying out fishing activities is no longer used due to the water pollution which has



led to the sitting of the river, thereby reducing the size of the water front, depth and volume. This has eliminated one aspect of agriculture for which the Ika people of delta state are known for. He also observed that Orogodo River has lost its true definition of fresh water body as its water is no longer suitable for household use but rather serves as a breeding ground for bacteria, viruses and parasites. He recommended several control measures which include the diversion of run off wastewater from the drainages by considering the use of retention ponds for runoff collection and establishment of wastewater treatment facilities within the state major towns and cities by the government or in partnership with the private sector. He also recommends the massive awareness campaign on the environmental hazards of wastewater through the various forms of media. This he added will help in enlightening the public on their individual roles as regarding wastewater generation and constituents.

Atubi (2011) examined the effects of Warri Refinery effluents on the Iffie River, Delta State, Nigeria. He assessed the nature of effluent released into the river and also the effect of effluent on the water quality. The data used were generated from direct field measurement of pH, Conductivity, Total Hardness, Total Dissolved Solids (TDS), Total Suspended Solids (TSS), Turbidity and Heavy Metal. The results showed that chemical such as Chloride, Phosphate, Oil and Grease, Chromium, Hydrogen Sulphide, Magnesium, Copper, Zinc, Nickel are released into the river. The pH values of 6.53 mean which is within the WHO acceptable limit of 6.5-9.2 thresholds were observed. This was observed of other heavy metals such as Mg, Zn, Cr, Ni, Cu, H₂S etc. However, the Turbidity, Hydrogen Sulphide, Total Suspended Solids (TSS), Copper, Chromium records were found to be higher than the WHO and FEPA (NESREA) standards thereby making the water in these areas not suitable for consumption.

2.4 The South-East Geo-Political Zone

In the southeast, a number of studies exist as regards the quality of water (river). Among these is Nkwocha *et al.*, (2013) who undertook a quality assessment of effluent discharges from vegetable oil plant in Anambra State, South Eastern Nigeria. This was evaluated relative to regulatory Body-Federal Environmental Protection Agency (FEPA) standard. Wastewater quality parameters were determined weekly on effluent samples for a period of 12 weeks, using standard methods. The effluent data were subjected to statistical correlation. The results show BOD values to be in a range of between 10.80-

94.20mg/l, with 90% occurrence value of 81.20mg/l which exceed FEPA set limit of 50mg/l by 62.40% for about 14% of the time. Dissolved Oxygen (DO) level was observed to be in the range of 2.70-4.60mg/l which was below the saturation point of 2.5mg/l at 30^oc. Total hydrocarbon content (THC) and Oil and grease were found to be higher than the set limit of 10mg/l. The same applied to PH. However, Total Dissolved Solids (TDS) and Temperature levels were consistently within permissible limit throughout the period of the study. Based on the findings, the authors recommend proper treatment and monitoring of effluent to ensure consistent quality that meets environmental standards.

On the other hand, Egwuonwu *et al.*, (2012) evaluated the effects of industrial wastewater discharge on surface water with a case study of Nigerian Breweries Plc Enugu into the Ajali River. This was carried out to ascertain the level of Biochemical Oxygen Demand (BOD), Chemical oxygen Demand (COD), Total Suspended Solids (TSS) etc and other characterized effluent been discharged into the river. To achieve this, laboratory analysis was carried out on the Alaji River and the wastewater discharged from the industry and it was confirmed not to have exceeded the benchmark for required discharge of wastewater into streams and rivers as stipulated by regulatory bodies. In conclusion, the authors recommended treatment measures and regulatory policies to checkmate the abuse of this river and the danger it might likely pose.

Ezeronye and Ubalua (2004) examined the effect of abattoir and industrial effluent on water quality of Aba River. In achieving this, the duo of Ezeronye and Ubalua collected water samples from five points: two at upstream at different distance from the abattoir, one from the abattoir discharge point and two from downstream at different distance. Their findings showed that some chemical parameters were below the minimum allowable levels sets by the United State Environmental Protection Agency (USEPA). Nevertheless, there is very little information on the hydrodynamic characteristics of effluent discharges from the point sources through the river course to downstream communities, especially for Aba River. This study therefore explains the effects of spatial dispersion of pollutants concentration along the course of Aba River, as limited studies have been conducted.

3.0 METHOD

This study adopted standard methods for examination of water and waste water which is



established by three organisations, (American Public Health Association, American Water Works Association and Water Environmental Federation) and this is currently regarded as the best water analytical method in America.

Analytical reagent grade of chemicals was used for all forms of analysis, decontamination of laboratory equipment and facilities. Though proper cleaning was ensured, quality control of laboratory air (equipped with functional cooling system), equipment and distilled water were also observed. To guide against lack of sensitivity and calibration, analysis of 'control' (blank) and 'standard' (reference) samples were also regularly carried out to avoid error resulting from Contamination

(reagents/materials), lack of sensitive instrument, lack of calibration (human error) and error in data reporting.

Descriptive and inferential statistics were employed to analyse the obtained data in this study. The physiochemical and biological variables of the discharged effluents samples from the selected industries would be explained using mean value. The laboratory experiment results were analysed using mean and standard deviation. The acquired discharge effluent samples (independent) were compare with the Aba River samples (dependent) to ascertain the relationship among the variable using a statistical technique of Analysis of Variance, Chi-Square and Pearson Moment Correlation.

4.0 RESULT

Parameters/ Industries	UP Stream		STARLINE		7 UP		PZ		NB PLC		DOWN Stream		NESREA
	Dry	Rainy	Dry	Rainy	Dry	Rainy	Dry	Rainy	Dry	Rainy	Dry	Rainy	
PHYSICAL													
Temp. (c)	27.5	29.5	29	29.5	28	35.6	36	34.5	28	31	29	30.5	< 3
pH	6.68	8	6.89	9	7.52	8.8	7.1	6.3	6.59	6.6	6.94	7.3	6--9
Conductivity (um/cm)	49	39	173	248	527	610	67	1224	781	347	62	77	
Alkaline (mg/L)	4	8	4	14	112	165	7.2	125	132	80	6.4	18	
TS (mg/L)	60	27.5	300	143.4	1260	390	60	813	1220	202	120	61.35	10
TDS (mg/L)	1.5	21.5	1.5	136.4	18	336	1.5	673	21	191	6	42.35	
CHEMICAL													
Chloride (mg/L)	6	4	36	18	16	13	12	55	60	15	16.8	10	100
COD (mg/L)	10	0.25	60	0.3	104	3.7	40	3.8	88.3	4.75	32	0.25	40
BOD (mg/L)	18.4	0.17	33.6	0.2	30.4	2.47	22.4	2.53	32.8	3.17	32	0.167	20
DO (mg/L)	8.64	5.78	8	8.16	0.8	8.54	5.76	7.86	0.4	3.38	3.2	3.6	
THC (mg/L)	180	0	220	0	1480	0	280	0	560	0	100	0	10
Zn (mg/L)	0.015	0.03	0.08	0.171	0.08	0.1	0.01	0.1	0.06	0.21	0.015	0.074	5
Cd (mg/L)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.1
Fe (mg/L)	Nil	926	Nil	0.294	2.92	2.81	Nil	3.31	20.5	1.62	Nil	1.197	2
Pb (mg/L)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.1
Cr (mg/L)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.01
BIOLOGICAL													
Total coliform	23	2400	Nil	240	1600	2400	33	2400	78	2400	33	2400	10
E-coli	Nil	93	Nil	15	Nil	2400	Nil	2400	Nil	2400	Nil	2400	0

Table 1: Result of the Analysis

Nil = Below Detectable Limit.

Source: Researcher's Laboratory Results,

The stated hypotheses were tested using statistical techniques of Two Ways Analysis of Variance (ANOVA) with replication and Chi-square (X^2) respectively.

4.1 Hypothesis 1

Two ways Analysis of Variance (ANOVA) with Replication test procedure produce an analysis for a quantitative dependant variable affected by more than two factors (independent variable). Analysis of variance is used to test the hypothesis that several means are equal; this technique is an extension of the two – sample T-test. Think of it as a generalization of the pooled T-test. Instead of two

populations (as in the case of a T-test), there are more than two populations or treatments. Based on these facts we applied it to determine the statistical significant difference between physical, chemical and biological characteristics of Aba River at Upstream, Fallout point (discharge point) and downstream segments and at different season of the year. Thus, two factors (characteristics and segments) were used it to validate our Hypothesis 1 at 95% confidence level.

Decision Rule: To accept our null hypothesis [H_0] the result of calculated F-ratio value must be below our theoretical F-ratio value from F-Distribution table, otherwise the null hypothesis [H_0] is rejected.



The ANOVA was defined using ANOVA formulae table below.

Table 2: ANOVA FORMULA TABLE

VARIATION	Degree of freedom (df)	MEAN SQUARE	F ratio
V _R Row (Characteristics)	a-1	$\hat{S}^2_{R} = V_R / a-1$	$\hat{S}^2_{R} / \hat{S}^2_{E} = F_R$
V _C Columns (segment)	S _b -1	$\hat{S}^2_{C} = V_C / S_b -1$	$\hat{S}^2_{C} / \hat{S}^2_{E} = F_C$
V _I Interception (Season)	b-1	$\hat{S}^2_{I} = V_I / (a-1)$	$\hat{S}^2_{I} / \hat{S}^2_{E} = F_I$
V _S Sub Total	a-1+ S _b -1+ b-1		
V _E Residual	(ab-1)- V _S df	$\hat{S}^2_{E} = V_I / (ab-1) - V_{Sdf}$	
V Total	ab-1		

$$V_I = V_S - V_R - V_C \dots\dots\dots (1)$$

$$V_E = V - (V_C + V_R + V_I) \dots\dots\dots (2)$$

Where V_R = Row Variance (Characteristics)
 V_C = Column Variance (segment)
 V_E = Error or Residual Variance
 V = Total Variance
 V_S = Sub Total
 V_I = Interception (Season)
 a = Row Frequency
 b = Column Frequency

V_R = 9731884.575, V_C = 992631.85,
 V_E = 480367.47, V = 23188752.95,
 V_S = 19080563.11, V_I = 8356046.685,
 a = 15, S_b = 2

Table 3: ANOVA RESULTS TABLE

Variation	Degree of Freedom (df)	Mean Square	F ratio
V _R = 9731884.575	a-1 = 14	$\hat{S}^2_{R} = 695134.6125$	F _R = 10.1524
V _C = 992631.85	S _b -1 = 1	$\hat{S}^2_{C} = 992631.85$	F _C = 14.4974
V _I = 8356046.685	b-1 = 14	$\hat{S}^2_{I} = 596860.4775$	F _I = 8.7171
V _S = 19080563.11	a-1+ S _b -1+ b-1 = 29		
V _E = 480367.47	(ab-1)- V _S df = 60	$\hat{S}^2_{E} = 68469.8307$	
V = 23188752.95	ab-1 = 89		

From the table 3 above, Calculated F_R value (10.1524) is greater than the theoretical value (F_{.95} = 1.92) at the 95% confidence level with 14 and 60 degree of freedom. Thus 10.1524 is greater than (>) 1.92, therefore we reject the null hypothesis [H₀]. That states that there is no significant difference between physical, chemical and biological characteristics of Aba River, and uphold alternative hypothesis [H₁] which states that there is significant difference between physical, chemical and biological characteristics of Aba River. Since the calculated (F_C = 14.4974) value is greater than theoretical value (F_{.95} = 4.0) at the 95% confidence level with 1 and 60 degree of freedom. Thus, F_C = 14.4974 > 4.0, therefore, we reject the null hypothesis [H₀]. Thus, the Upstream, Fallout point (discharge point) and downstream segments of Aba River varies in quality. On the other hand, the calculated (F_I = 8.7171) value is greater than the theoretical value (1.92) at 95% probability level with 14 and 60 degree of freedom. Arising from this we reject null hypothesis [H₀] and accept the alternate hypothesis [H₁]. Thus, there is statistical significant variation between observed in characteristics (Physical, Chemical and Biological) at

upstream, fallout points and downstream segments of Aba River in different seasons of the year.

4.2 Hypothesis 2

Chi-square (X²) test is a statistical tool used to examine differences between nominal or categorical variables. The chi-square test is used to estimate how closely an observation distribution matches an expected distribution, known as the Goodness of Fit Test. This was applied to this section to determine the significant difference in the selected industries wastewater quality discharged into Aba River and NESREA wastewater quality Standard, at 95% probability levels.

For the purpose of this analysis we use the observed effluent parameters of the sampled industry as our observation (O) and the NESREA industrial effluent limitation standard as expected parameter (E) as shown in Table 4.6

The chi-square (X²) statistics is defined as:

$$\sum (O-E)^2 / E \dots\dots\dots (3)$$

And the degree of freedom

(df) as N-1 $\dots\dots\dots (4)$

Where n = frequency of observation.



Decision rule: To accept null hypothesis [H_0] the result calculated X^2 must be lower than chi-square [X^2] distribution value from table otherwise the H_0 is rejected. The computation is based on 0.01 and 0.05 confidence level.

The table 4.7 indicates the industries effluent parameter of sampled industries with the corresponding NESREA effluent limitation standard for industries. The computation of the chi-square (X^2) is fully expressed in appendix 3 and the outcome is summarized in table below.

Table 4: SUMMARY OF CHI-SQUARE RESULT

INDUSTRY	COMPUTED X^2		THEORITICAL X^2		DF		REMARK
	DRY SEASON	RAINY SEASON	DRY SEASON	RAINY SEASON	D	R	
STARLINE	12885.12	7202.52	18.5	20.1	7	8	H_0 not accepted
7 UP	652335.16	585742.47	21.7	20.1	9	8	H_0 not accepted
PZ CUSSION PLC	7676.59	635797.56	20.1	20.1	8	8	H_0 not accepted
NB PLC	177380.46	575012.81	21.7	20.1	9	8	H_0 not accepted
MEAN	119591.24	356572.77	21.7	20.1	9	8	H_0 not accepted

Table 4 above, it is evident that computed X^2 values of all the studied industries wastewater at various season are above the theoretical values in both 0.01 confidence level, therefore null hypothesis [H_0] is rejected. Thus, alternate hypothesis [H_1] is accepted. In conclusion, there is statistical significant difference in the selected industries wastewater quality discharged into Aba River and NESREA waste water Quality Limitation Standard.

5.0 CONCLUSION

This study indicates that there is an increase in most of the characteristics used to evaluate the effect of industrial effluents on water quality of Aba River and most of these characteristics are high above NESREA stipulated standard, it also reveals that there is statistical significant difference in characteristics of Aba River water sample at different segment and different season of the year, and that the effluents from these selected industries statistically varies significantly from stipulated standard set by NESREA and further shows that there is a statistical significant correlation between Aba River water quality at upstream and downstream segment in both dry and rainy season, that the variation in dry season and rainy season are 61.5% and 49.6% respectively, so we therefore conclude that:

5.1 Aba River is contaminated

The result of the physical, chemical and biological analysis of this study shows that Aba River is polluted and this could be hazardous to health. The source of the observed contamination is from industrial effluents discharges into the water body.

Thus the result of the physiochemical and biological analysis of the river shows that industrial effluents being discharged into the Aba River impact negatively on its water quality, therefore it is unsafe to exploit water from the river for human consumption without any form of treatment.

5.2 Deterioration of Aba River Water

The study shows that pollution level of Aba River could be on increase if left unchecked, this will affect the use of the water. The levels of most parameters studied were generally higher at fallout point and downstream than the level obtained in the upstream segment of the river. Although, the values of some parameters are low compare to permissible limit set by NESREA. Continual discharge of industrial effluents without proper treatment into the river may result to accumulation of these contaminants.

6.0 RECOMMENDATION

Based on the findings the following recommendations are put forward to check industrial effluent discharge into Aba River.

1. Industries should be committed to environmental safety, particularly water body by ensuring that the wastewater they generate undergoes proper treatment before discharging to water body.
2. The government through NESREA should ensure that industries establish wastewater treatment plant to their industry. They should also ensure efficient environmental laws as well as social awareness for



residents along the river course to educate them on the potential threat to industrial effluents.

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A STUDY OF CONSUMER SATISFACTION TOWARDS OF ONEPLUS MOBILE WITH SPECIAL WITH COIMBATORE CITY

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ABSTRACT

In the course of recent years, portable showcasing has produced an expanding enthusiasm among scholastics and experts. Prior PDA industry is actually occupied with the assembling of cell phones, including telephone handsets. Be that because it's going to presently industry is completely focused on pushing ahead mechanically. One or more versatile is among scarcely any PDA makers which is situating its image exceptionally high within the brain of clients. One or more was propelled its first versatile in 2014 and through a touch term of some time it got one of the market chiefs in 2017, One or more leads the exceptional telephone showcase in India with 48 percent share within the Q4,2017 according to IDC.A customers sets a casing of inclinations in his/her brain to pick or buy an item or administration of same or various brands or makers. The exploration paper plots subjective examination on client's fulfilment of 1 or more portable enthusiastic to the knowledge of the clients.

KEYWORDS: Innovation, Smartphones, Customers preference, Technical features

1. INTRODUCTION

The Shenzhen, Chinese-based smartphone company that also owns brands like OPPO and VIVO, operated by BBK electronic is a manufacturer of the OnePlus mobile phone, which was formed in December 2013 by Pete Lau and Carl Pei. The co-founder of OnePlus Pete Lau and Pei emphasized the "Never Settle" slogan which is the motto of OnePlus, which aimed at providing the best possible technology to users globally by creating elegantly designed devices with premium built quality and high-performance hardware and to get better performance.

2. STATEMENT OF PROMLEBS

One plus mobile plays a brand positioning in the sector is tough task. One plus mobile may

increase the online selling. The Indian mobile handset market posted revenue of 3694crores in the financial year 2020. One plus mobile cannot reaches all people, only the rich people can afford it. The major problem in one plus mobile is less innovative per year only two variants are available. This survey is help to bring more innovative and technique and also to measure the customer's satisfaction.

3. OBJECTIVE OF STUDY

- To identify the factor influencing customer to buy OnePlus mobile phone.
- To know the level of satisfaction in OnePlus mobile phone.
- To identify the problem faced by the customer of OnePlus mobile.

4. RESEARCH METHODOLOGY

Source of data	Primary and Secondary data
Sampling technique	Convenient Sampling
Sampling Size	120 Respondance
Tools and Technique	Simple percentage analysis, Likert scale analysis



5. STATISTICAL TOOLS

- Simple percentage Analysis
- Likert scale Analysis

6. REVIEW OF LITRATURE

RevathyRajasekaran, S. Cindhana and C. Anandha Priya Department (2018) Smartphone usage has proliferated in recent years. Nowadays people seem to become dependent towards Smartphone due to its convenience, great camera features, easy applications installations, and more

importantly, it can do most of the computer functions on the go.

Gaurav Verma, Dr. Binod Sinha (2018)

The telecommunication industry is fastest growing sector in today's economy. Earlier cell phone industry is primarily engaged in the manufacturing of mobile phones, including mobile phone handsets.

PARVEEN KUMRAIL, SATINDERKUMAR (2004) A consumer sets a frame of preferences in his/her mind to choose or purchase a product or service of same or different brands or producers.

7. TABLE

- SIMPLE PERCENTAGE ANALYSIS

Table Showing Preference of Buying Oneplus Mobile Of The Respondants

S. No.	Preference	No. Of Respondants	Percentage
1	OnePlus Nord	28	23.3
2	OnePlus 9R	26	21.7
3	OnePlus 9 Pro	21	17.5
4	OnePlus 8T	12	22.5
5	OnePlus 8	15	12.5
6	Other Old Models	3	2.5
	TOTAL	120	100%

INTERPRETATION

The above table indicates that 23.3% of the respondents are using OnePlus Nord, 21.7% of the respondents are using OnePlus 9T, 17.5% of the respondents are using OnePlus 9 Pro, 22.5% of the respondents are using OnePlus 8T, 12.5% of the respondents are using OnePlus 8 and 2.5% of the

respondents are using OnePlus old model of OnePlus mobile.

INFERENCE

Most (23.3%) of the respondents prefers OnePlus Nord Model.

LIKERT SCALE ANALYSIS

Table Showing the Satisfaction Level of the Respondents towards Brands of Oneplus

S.No	Factors	No. Of Respondents (F)	Likert Scale	Total Score
1	Highly Satisfied	61	5	301
2	Satisfied	11	4	44
3	Neutral	41	3	123
4	Dissatisfied	6	2	12
5	Highly Dissatisfied	1	1	1
		120		481

- **LIKERT SCALE** = $\sum(fx) / \text{Total number of respondents}$
 $= 481/120$
 $= 4$

- **INPERTATION**

The likert scale value is 4 which is greater than the mid-value (3) which shows that the consumer are satisfied with the Brand of OnePlus.

- Majority (18-39%) of the respondents belongs to the age category of 19-39 years.
- Majority (57.1%) of the respondents are Unmarried.
- Majority (38.2%) of the respondents are semi Urban Area.
- Majority (60%) of the respondents are belong to Nuclear family.
- Majority (39.2) of the respondents are 4-5 category of family members.

8. FINDINGS

- Majority (70%) of the respondents are belong to male.



- Most (34.5%) of the respondents belongs to Graduate.
- Majority (31.7%) of the respondents belongs to student.
- Most (50%) of the respondents earns income 20000-30000
- Most (38.3%) of respondents are aware of OnePlus Mobile through Friends.
- Most (23.3%) of the respondents prefers OnePlus Nord Model.
- Most (38.3) of the respondents are using OnePlus Mobile for the period of 1-2 Years.
- Most (38.7%) of the respondents made the purchase decision by Friends.
- Most (72.9%) of the respondents are satisfied with the Features of OnePlus Mobile to
- Make the purchase decision.
- Most (30.8%) of the respondents says that Gaming Mode is the reason for the usage of OnePlus Mobile brand.
- Most (35.8%) of the respondents came to aware of latest mobile features that is which is 5G(Fifth Generation)
- Most (37.6%) of the respondents prefer OnePlus mobile for the performance.

9. SUGGESTION

- Most of the respondent are satisfied with the service of the OnePlus. Some of the customer suggest to improve the service of the OnePlus in the scientific methods.
- Most of the customer suggest to reduce the price of OnePlus.
- Some of the customer suggestion is to improve the quality of OnePlus.

10. CONCLUSION

The study concluded that in this modern business economy. It is very important in analyse about the OnePlus mobiles. The study result about the majority of the customers are satisfied with the OnePlus mobile but also there is a drawback such as hike in price and other factor like models of the product. Necessary steps have to be taken to resolve problems of retaining customers of one plus mobiles will be high, if the company can understand the preference and overall perception of the consumer. Hence it will develop the marketing strategy and market share of OnePlus mobile phone company.

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A STUDY ON CUSTOMER SATISFACTION TOWARDS KTM BIKES WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

This study is based to identify the factors the consumer buying behaviour of the KTM bikes. So, I decided to do the projects as "A study on customer satisfaction towards KTM bike". The main objectives of the study is to find out the prominent reason on customer satisfaction towards KTM bikes. To Know the factor influencing the customer decisions to purchase KTM bikes. To study the satisfaction level of consumers on KTM bikes. To Know about the company's service after sales and service. To analyze economic and demographic performance of the KTM bikes. Tools used in this project is simple percentage analysis. Most of the customers suggestions is to improve the non-availability spare parts, so the company can improve the spare parts factor. Some of the customers expects that, the test drive should be available for all models in showrooms.

KEY WORDS: Customer satisfaction, Customer decisions, KTM bikes.

1. INTRODUCTION

Customer satisfaction is a measure of how product and services supplied by a company meet or surpass customer expectation. It is seen as a significant performance indicator within business and part of the four prospective of the balanced scorecard. In a competitive marketplace where business complete for customer, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy customer satisfaction drives successful private sector business.

2. STATEMENT OF THE PROBLEM

The reason for customer satisfaction towards KTM bike was evaluated by getting feedback from the customers and findings. Customer satisfaction

provides an indication of how successful the organization is providing products and services to the marketplace. The study would help the company to improve the sales and services of KTM bikes.

3. OBJECTIVES OF THE STUDY

- To know the factors influencing the customer decisions to purchase KTM bikes.
- To study the satisfaction level of consumers on KTM bikes.
- To know about the company's service after sales and service.
- To analyze economic and demographic performance of the KTM bikes.

4. RESEARCH METHODOLOGY

Area of the Study	Coimbatore City
Sample Design	Convenient Sampling Method
Sample Size	120

5. TOOLS

- Percentage analysis
- Ranking analysis
- Likert analysis



6. REVIEW OF LITERATURE

Basavaraj.H. Huggie (2016), To study the factors influencing the customers to purchase the TVS Two wheelers. The research has studied only TVS Two wheelers. Other Two-wheeler companies have been excluded in the study; it is clear from the study that 21% of people are aware about TVS Two through TV ad.”

V. suganthi & R. Renuka, M. Phil (2016), To Analyse the level of satisfaction of customers for maruthi Suzuki swift cars. The study is based on the

primary data collected from 200 respondents, who have purchased the cars. Findings of the study are 78% of the respondents preferred brand by the majority of the consumers.

Debasis Tripathy & Ronald Mani (2014), To study the satisfaction level of consumers, who use Bikes. The data collected through questionnaire from city of Allahabad. Data has collected through various publications of books. A total of 600 existing customers were randomly selected from the city of Allahabad.

7. TABLE

• SIMPLE PERCENTAGE ANALYSIS

Table Showing Age Group Of Respondents

Age	No. Of. Respondents	Percentage%
Below 20 years	32	27
20 -30 years	45	38
31 – 40 years	28	23
Above 40 years	15	12
Total	120	100

INTERPRETATION

From the above table it is found that 27 % of the respondents belongs to the age group below 20 years, followed by 38 % are in the group between 20 years - 30 years, 23% represent the age group between

31Years-40 years. 12 % is represented by the age group above 40 years.

- Majority of the customers (38 %) are in the age group of 20-30 years.

• LIKERT SCALE ANALYSIS

Table showing level of satisfaction of respondents in design of vehicle

Factors	No of Respondents	Likert scale value	Total scores
Highly satisfied	42	5	210
Satisfied	45	4	180
Neutral	29	3	87
Dissatisfied	1	2	2
Highly satisfied	3	1	3
Total	120	15	482

$$\begin{aligned} \text{Likert scale} &= \Sigma (f \times x) / \text{Total number respondents} \\ &= 482/120 \\ &= 4.00. \end{aligned}$$

INTERPRETATION

Likert scale value is 4.00, its greater than the mid

value (3). Hence the majority of the respondents are satisfied in KTM vehicle design.

• RANKING SCALE ANALYSIS

Table showing ranking factor in KTM vehicles of respondents

Factors	R1	R2	R3	R4	R5	Total	Final rank
Breaking	28(5)	42(4)	18(3)	16(2)	16(1)	410	II
Engine performance	26(5)	23(4)	20(3)	31(2)	20(1)	262	III
Initial pickup	36(5)	14(4)	26(3)	21(2)	23(1)	479	I
Handling comfort	14(5)	18(4)	23(3)	35(2)	30(1)	311	V
Mileage	16(5)	24(4)	32 (3)	17(2)	31(1)	337	IV



INTERPRETATION

In KTM vehicle, the respondents have ranked initial pickup as first (1), breaking power is ranked as second (2), Engine performance is ranked as third (3), Mileage is ranked as fourth (4) factor and finally handling comfort is ranked as fifth (5) by the respondents.

8. SUGGESTION

- The main dissatisfying factor is non availability spare parts so the company can improve the spare parts factor.
- Test drive should be available for all models in showroom.
- Many customers are dissatisfied by mileage company can improve the mileage
- Many customers are came to know about the company to friends, the company can improve the advertising factor.

9. CONCLUSION

This study was conducted with the aim of the customer satisfaction on KTM motorcycles. The sample was collected from the customers who hold the KTM two-wheelers and know about the satisfaction level of the KTM bikes. In this study, most of the respondent are having good opinion about the KTM bikes and the finding and the suggestion of the study will support the company in an effective and better way.

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A STUDY ON FINANCIAL PERFORMANCE OF SBI BANK

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ABSTRACT

The present study deals with the research of A STUDY ON FINANCIAL PERFORMANCE OF SBI BANK. Monetary execution of a bank demonstrates the strength and shortcoming of that specific bank by appropriately building up the relationship between the things of the asset report and benefit and misfortune account. The goal of the current paper is to break down the monetary execution of SBI (State Bank of India) over a time of six years (2015 - 2020). This examination targets investigating the Financial Ratio examination of State Bank of India. The principle objective for business bank is to augment the worth of benefit. To do as such, banks focus on their monetary presentation investigation and endeavour to structure their portfolios to augment their return. The different instruments like current proportion, net benefit proportion, stock turnover proportion and other execution proportions were utilized for the examination. The ideas uncover the organization should find essential ways to acquire standard pay and in this way keep up with steady productivity execution.

KEYWORDS: Financial performance, growth aspects and ratio analysis.

1. INTRODUCTION

Finance may be defined as the arts and science of managing money. It includes financial service and financial instrument. Finance also is referred as the provision of money at the time when it is needed. Finance function is the procurement of funds and their effective utilization in business concerns. The concept of finance includes capital, funds, money and amount. But each word is having unique meaning. Studying and understanding the concept of finance become an important part of the business concern. Financial statement refers to such statement which contains financial information about an enterprise. They report profitability and the financial position of the business at the end of accounting period.

2. STATEMENT OF THE PROBLEM

The Reserve Bank of India regulates the banking service industry. Analysis of a bank's financial statements requires a distinct approach that recognizes a bank's somewhat unique risks. This study is guided by the following research questions;

1. What does the trend performance of SBI bank looks like in the six years?
2. What was the efficiency of Solvency and Liquidity position of banks?

3. OBJECTIVES OF THE STUDY

- ✓ To identify the financial liquidity position of the SBI Bank.
- ✓ To analyse the solvency position of SBI Bank.
- ✓ To evaluate financial status, growth and operation performance of SBI.



4. RESEARCH METHODOLOGY

Source of Data	Secondary data
Period of Study	2014-2015 to 2019 – 2020
Framework of analysis	Financial Statements
Tools and Techniques	Ratio analysis

5. STATISTICAL TOOLS

A number of methods can be used for the purpose of analysis of financial statement. These are also termed as techniques or tools of financial analysis. One of these enterprises can choose those techniques which are suitable to its requirements. The principal techniques of financial analysis are:-

- a. Comparative Financial Statement.
- b. Ratio Analysis.

6. REVIEW OF LITERATURE

T Nayana .N and Dr. veena K.P (2018), A study on Financial performance of State Bank of India. This study attempts to measure the financial performance and relative profitability of state bank of India. For this study, we have used profitability position of SBI and to analyze the profitability performance of SBI. It is very essential to analyze how their profitability is influenced by number of factors which will further suggest them where they need to concentrate more. In this article we have analyzed of mean, standard deviation and ANOVA test have been used. This paper concludes Profitability is the primary motivating force for any economic activity.

Ramya S, Narmadha NKB, Lekha S, Nandhitha Bagyam VR and Keerthana A (2017), describe Analysis of financial performance of state bank of India using camels approach. This present paper is to analyse the financial performance of SBI (State Bank of India) over a period of five years (2012-2016). On the basis, performance evaluation of SBI ltd was Based on various parameters of CAMELS rating system is useful for banks as well as for those who deal with the bank in order to identify the weakness and take corrective measures.

PATEL BHAVESHKUMAR K (2020), study the Financial performance of SBI bank, this study is based on secondary data that has been collected from annual reports of the SBI bank, books, newspapers, magazines, journals, documents, research papers, websites and other published information. . It is major part of total banking system in India. SBI is the India's largest commercial bank in terms of assets, deposits and employees. This study main objective is to find out the profitability, liquidity ratios and solvency ratios to measure the financial health of SBI bank.

7. FINDINGS

- ✦ The current ratio shows highest level of growth in 2015-2016 at 1.095:1 and lowest level of growth in 2018-2019 at 0.994:1.
- ✦ The liquid ratio has highest growth in 2017-2018 at 0.485:1 and lowest level of growth in 2018-2019 at 0.375:1.
- ✦ The absolute liquid ratio shows highest growth in 2015-2016 at 0.059:1 and lowest growth in 2019-2020 at 0.043:1.
- ✦ The Debt Equity Ratio shows highest growth in 2018-2019 at 463.603 and lowest growth in 2014-2015 at 327.680.
- ✦ The Fixed Asset Ratio shows highest growth in 2016-2017 at 0.151 and lowest growth in 2014-2015 at 0.050.
- ✦ The Proprietary Ratio shows highest growth in 2014-2015 at 0.060 and lowest growth in 2016-2017 at 0.015.
- ✦ The Current Asset to Proprietors Fund Ratio shows highest growth in 2019-2020 at 4658.375 and lowest growth in 2014-2015 at 3600.105.
- ✦ The Fixed Asset to Proprietor Fund Ratio shows highest growth in 2016-2017 at 63.88 and lowest growth in 2014-2015 is 16.58.
- ✦ The Reserve to Capital Ratio shows highest growth in 2019-2020 at 28031.2 and lowest growth in both 2014-2015 at 21517.2.
- ✦ The Deposit to Total Asset Ratio shows highest growth in 2019-2020 at 0.78 and lowest growth in 2017-2018 at 0.75.

8. SUGGESTIONS

- The SBI Bank must to take necessary measures to improve their current assets and reduce their advances and current liabilities.
- The SBI bank must concentrate to improve their fixed asset value
- The SBI bank must take necessary steps to decrease their long term funds.
- The SBI bank should improve their value of reserves.
- The SBI bank must concentrate to improve their net profit value.

9. CONCLUSION

The banking sector is very important for the economic development of a country. The SBI is one of the leading banks of Public sector Bank in India.



The market position of SBI is better. Financial analysis is used to find the banks position in maintaining the day to day operations. This study is focused to evaluating the performance of SBI bank. The various ratios under the above category were collected and it is found that there is a significant growth in the year 2020. SBI have more profitability because it enters into the industry as well as commercial market also and regularly it improving the service quality level. In this highly competitive global environment it is imperative for the SBI bank to show outstanding performance in various parameters.

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A STUDY ON FINANCIAL PERFORMANCE OF APOLLO TYRES

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ABSTRACT

Financial Performance is the tries to decide a security's fee via way of means of that specialize in underlying elements that have an effect on a enterprise's real enterprise and its destiny prospectus on a border scope, its miles viable to carry out economic overall performance at the industries. The goal of the have a look at is to discover powerful economic evaluation of profitability of Apollo tyres and to forecast the once a year increase charge of the enterprise with the assist of evaluation. They have a look at hired the usage of secondary information that is from a 5 years. It indicates the control strategies of their corporations to recover from their situation. They have a look at concludes that may be widespread distinction in overall performance assessment of Apollo tyres.

KEYWORDS: Financial Performance, Profitability and economic evaluation

1. INTRODUCTION

Financial overall performance is the tries to decide a security's feethroughthat specialize in underlying elements that have an effect on a business enterprise's realenterprise and its destiny prospectus on a border scope, it's farviable to carry outeconomicoverall performance on industries or financial as a whole. The time periodtrulyrefers back to theevaluation of the financialhealth of a economic entity in preference tohandiest its fee movements. Balance sheet suggests the economicrole of the corporationon the accounting. It suggests how the corporationcompleted financially over the accounting duration. Sources and makes use of of the fund declaration it suggests how the corporationcompleted financially over the accounting duration.etc. The corporation's capacity to earn mostearningsthrough the nice utilisation of the assets is known as profitability within side the relative degree of the incomespotential profitability relies upon on quantum of incomeprice of manufacturing and use of economicassets.

2. STATEMENT OF PROBLEM

To decide the economic problem, the economicoverall performance and evaluation to earn enough profitability to manipulate the right functioning of Apollo Tyres. Every attempt has been

made to finish relevantly and advise for the overall performance of Apollo Tyres.

3. OBJECIVES OF THE STUDY

- To discover the powerfuleconomicicevaluation of profitability of Apollo tyres.
- To discover the powerfuleconomicicevaluation of profitability of Apollo tyres.
- To examine the profitability of the corporation.

4. RESEARCH METHODOLOGY

A Research Methodology or involves specific techniques that are adopted in research process to collect assemble and evaluate data.

SOURCES OF DATA

The study is based on secondary data and the data is called from database of the company.

PERIOD OFTHE STUDY

The present study covers over a period of 5 years from 2015-2016 and 2019-2020.

5. STATISTICAL TOOLS

The following statistical tools were applied to analyse the statistical data collected for calculation of financial performance analysis:



Ratio Analysis

- Profitability Ratios
- Liquidity Ratios
- Activity Ratios

6. REVIEW OF LITERATURE

Dr.K Suresh Babu & P.S Deepa (2018): From this study it conclude that the basic function of the liquidity ratio is to measure a company’s capability to settle all current available assets. The stability and financial health or lack thereof, of a company and its efficiency in playing off debt is individual by liquidity ratios and is of great importance to market analyst creditors and potential investors. The absolute liquid ratio represents enough funds in the form of cash in order to meet its short-term obligations in time.

R.Baskar (2018): From this study it says that profitability analysis study reveals the performance of a company in all aspects because efficient management of other aspects will result in profit. JK tyres industries limited are one of the market leaders Indian tyre market. It is one of the oldest automobile companies in India. The results of the profitability analysis of the company were not good.

Dr.R.Jayanthi (2018): from the analysis it was found that the overall financial performance of the company was moderate. This was due to steep rise in the raw material costs and largely driven by demand and supply conditions as also directly proportional to automobile sales to some extent.

7. TABLE

Year	Current Ratio	Liquid Ratio	Absolute Liquid Ratio	Net Profit Ratio	Operating Ratio	Expense Ratio
2015-16	1.33	0.77	0.17	8.76	23.35	76.69
2016-17	1.12	0.53	0.05	7.76	20.03	81.63
2017-18	1.39	0.8	0.12	4.79	12.63	88.35
2018-19	1.35	0.55	0.13	3.87	11.16	91.51
2019-20	0.96	0.4	0.13	2.92	11.73	87.09

- The Current ratio shows highest growth rate in the year 2019 as 1.39 and the lowest rate in the year 2017 as 0.12.
- The Liquid ratio shows highest growth rate in the year 2016 as 0.77 and the lowest growth rate in the year 2020 as 0.4
- In Absolute liquid ratio the highest growth rate was in the year 2016 as 0.17 and the lowest growth rate as 0.05 in the year 2017.
- In Net profit ratio the highest growth rate was 8.76 in the year 2016 and the lowest growth rate was 2.92 in the year 2020.
- In the Operating profit ratio, the highest growth rate was 23.35 in the year 2016 and the lowest growth rate was 11.16 in the year 2019.
- In the Expenses ratio, the highest growth rate was 91.51 in the year 2019 and the lowest growth rate was 76.69 in the year 2016.

planning the business enterprise can be maintained within side the modern belongings nicely for you to cause a higher role of operating capital. The business enterprise can also additionally lessen the creditor’s role through repaying the loans in short-duration for in higher positions for destiny and manipulate strategies with the intention to modify and optimize using coins balance. The business enterprise can be maintained within side the modern belongings nicely for you to cause a higher role of operating capital. The business enterprise can also additionally lessen the creditor’s role through repaying the loans in short-duration for in higher positions for destiny.

9. CONCLUSION

The observe concludes that there may be sizeable distinction within side the overall performance assessment of Apollo Tyres in phrases of liquidity, profitability and hobby ratios managerial performance role. Financial overall performance is fundamental instrument, which affords all records approximately the economic role and operational performance of the business enterprise. It finish that The business enterprise has to take suitable

8. SUGGESTION

The control ought to attempt to undertake price discount strategies of their agencies to recover from this situation. The business enterprise can also additionally constantly hold its right



steps to manipulate the price, boom the extent of income, earnings within side the destiny years.

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A STUDY ON FINANCIAL PERFORMANCE OF BATA INDIA LIMITED

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ABSTRACT

Financial performance helps to measure the overall performance of the company. The financial statement of BATA India Limited has been selected and analyzed with ratio analysis from 2015 to 2020. This study is based on secondary data. The data were collected from official website of the company and related articles and books. The tools used for analysis is ratio analysis of the balance sheet. Suitable ratios were framed and calculated to know the financial performance of the company such as liquidity, profitability, solvency and activity ratios. The main result of this study shows that the financial and business performance of BATA is positive but it must consider factors of risk in terms of growth and local competitors demand. Finally recommendations and suggestions have been made to ensure the revenue of the company and reduce the liabilities while improving the stability of the company.

KEYWORDS: BATA India Limited, Financial performance, Ratio analysis.

1. INTRODUCTION

Financial performance ensures the result of a firm's policies and operations in monetary terms. It is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Financial statements are presented as on a particular date for a particular period. It indicates balance sheet which analyze the financial position as at end of an accounting period. Financial management helps the organization determine what to spend, where to spend, when to spend. It is the ways of managing money.

2. STATEMENT OF THE PROBLEM

Analysis and interpretation of financial statement is a regular exercise to review the

performance of the company. It was proposed to conduct a review to study the short term prospects as well as the long term trends and to arrive at the conclusion on the performance of the company. Performance review resulting in taking correction action optimizes the performance in the subsequent period.

3. OBJECTIVES OF THE STUDY

- To study and analyze the financial performance of BATA India Ltd.
- To know the history of the company.
- To judge the financial strength and weakness of the company.

4. RESEARCH METHODOLOGY

Source of data	Secondary data
Period of study	2015-2020
Tools used	Ratio analysis



5. STATISTICAL TOOLS

- Current Ratio
- Liquid Ratio
- Gross Profit Ratio
- Net Profit Ratio Before Taxation
- Net Profit Ratio After Taxation
- Operation Profit Ratio
- Proprietary Ratio
- Working capital Turnover Ratio
- Inventory Turnover Ratio
- Asset Turnover Ratio

6. REVIEW OF LITERATURE

Nisha R. Ghode (2019) this study is based on ratio analysis of Yamaha motors at Taj Shree motors private limited. It consists from 2013-2014 to 2016-2017. Data are collected from secondary sources. Analysis concludes that the performance of the company is liquidity in all years. The firm maintaining a low cash balance and marketable securities which means they done cash payment.

S. Ramya, N. Pooja priya dharshini, R. Pavithra Chandran (2018) the main purpose of this study was to determine liquidity, solvency and financial position of the Indian Oil Corporation Limited by using the tools like ratio analysis and common size balance sheet. This study indicates that the company has doing satisfactory job. But the company should focus on the area of meeting its current liabilities.

Dr. B. Saranya and Dr. K.M. Chinnadorai (2016) this study is based on financial analysis of electronic goods industries. The author made this study to examine the growth of white goods industry. The study covers the period of 5 years from 2011 to 2015.

The Suggestion that the company should concentrate on the dividend and also should concentrate on their operating profit and their by increasing the sales.

7. FINDINGS

- Current ratio of the company was highest 2.92 in the year (2018-2019) and lowest 2.48 in the year (2015-2016).
- Liquid ratio of the company was highest 1.59 in the year (2018-2019) and lowest 1.00 in the year (2015-2016).
- Gross profit ratio of the company was highest 25.57% in the year (2019-2020) and lowest 11.96% in the year (2016-2017).

- Net profit before taxation of the company was highest 16.33% in the year (2018-2019) and lowest 9.35% in the year (2016-2017).
- Net profit after taxation of the company was highest 11.26% in the year (2018-2019) and lowest 6.36% in the year (2016-2017).
- Operating profit ratio of the company was highest 29.79% in the year (2019-2020) and lowest 12.56% in the year (2016-2017).
- Proprietary ratio of the company was highest 5.79 in the year (2019-2020) and lowest 3.92 in the year (2015-2016).
- Capital turnover ratio of the company was highest 2.04 in the year (2015-2016) and lowest 1.61 in the year (2019-2020).
- Inventory turnover ratio of the company was highest 1.26 in the years of (2017-2018 and 2018-2019) and lowest 1.21 in the year (2019-2020).
- Asset turnover ratio of the company was highest 1.38 in the year (2015-2016) and lowest 0.82 in the year (2019-2020)

8. SUGGESTIONS

The performance of BATA India Limited during the period of the study was found good some minor weakness

- The net profit of the company was fluctuates every year. While compare to 2018- 2019 the net profit ratio was decreased last year 2019-2020. So company should focus on expenditures to improve the net profit.
- Capital turnover ratio decreased every year. It shows the company was not increased its sales with minimum amount of capital. Company should focus on improve the sales to increase the revenue.
- Inventory turnover decreased in the last year. It shows the company sale was decreased. It should focus on excessive inventories to strong the sales.
- Asset turnover ratio decreased every year. It indicates that a company was not efficiently used its asset to improve the profit

9. CONCLUSION

It is clear from the study that the financial performance of the company shows satisfactory level. It reveals that the company faces certain



weakness in managing their financial performance. To maintain good financial performance the company should increase the sales volume. And it should use its assets efficiently to improve the production capacity and to avoid excessive inventories. Hence if a given suggestions are implemented, the company can increase its profitability and improve their overall financial performance.

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A STUDY ON CUSTOMER SATISFACTION TOWARDS MARUTI SUZUKI CARS TO COIMBATORE CITY

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ABSTRACT

An trusted automobile industry in India Ranked 37th place at 2013 which showed growth rate at 2019 upholding 9th rank . Maruti Suzuki has highest customer satisfaction The study used primary and secondary data of consumer to find out the know about consumer preferences To bring the suggestions about the brand find the customer's satisfaction . The various tools like simple percentage analysis and Likert Scale analysis were used in the study. The suggestion Maruti Suzuki the automobile industry has prompted the companies to take up new and innovative market strategies towards the competition. The automobile industry designs, develops, manufactures, markets, and sells motor vehicles .

KEYWORDS: loyalty, innovative, faith,

1. INTRODUCTION

Maruti Suzuki is the world largest manufacturer of Four Wheelers , Recognized the world over as the symbol of Maruti Suzuki Four wheelers , the „Wings“ arrived in India as Suzuki Cars, Motorcycle and Scooter India Pvt. Higher the satisfaction level, higher is the sentimental attachment of customers with the specific brand of product and also with the supplier. This helps in making a strong and healthy customer – supplier bonding. This bonding forces the customer to be tied up with that particular supplier and chances of defection very less. The competitive nature of the automobile industry has prompted the companies to take up new and innovative market strategies towards the competition.

2. STATEMENT OF THE PROBLEM

Four wheelers play a vital role in human life. The best mode of transport for family is a Four wheeler and is a need for everyone in the family. As people want increase their standard of living, the production and usage of Four wheelers have also substantially increased. The customer's preference for Four wheeler is based on his taste and priorities. In a

market oriented economy the consumer expect the right type and the right quality of goods at the right time and at the right price. As a result of the new licensing policy and allowing foreign collaboration, number of high technology and fuel efficient four wheelers are manufactured .

The study is about the special features and qualities of Maruti Suzuki , the different model available in the market which attract the customer, the reason for the usage of Suzuki the services provided by the Maruti dealers and customers satisfaction .

3. OBJECTIVES OF THE STUDY

- To find the customer's satisfaction of Maruti Suzuki Four Wheeler.
- To find the problems faced by the consumers with the Maruti Suzuki Four Wheeler
- To bring the suggestions about Maruti Suzuki Four Wheeler
- To know about consumer preferences towards Maruti Suzuki Four Wheeler



4. RESEARCH METHODOLOGY

Source of Data	Primary Data and secondary data.
Area of Study	Coimbatore city
Sample Size	100

5. STATISTICAL TOOLS

- Simple percentage analysis.
- Likert Scale analysis.

6. REVIEW OF LITERATURE

Praveenkumar (2020) stated that this study would evaluate and examine the factors that influence the choice of a particular car brand by the owners of Madurai City. Research shows that shoppers were pleased with the price, size, level of exercise, distances, indoor living rooms, and brand status. The study shows that the recent factors affecting the decision of car owners in the entire research field are prices, fuel quality, pick-up, and comfort are most significant.

PhuleMohan,(2012) in his Ph.D thesis, —Exploring Marketingstrategies and customer satisfaction in automobileindustry: a comparative study of Aurangabad andPune city| found that telephone,

internet are the most preferred sources of collecting feedback. He also suggested that the company should use advanced technology and try to increase the efficiency of car. He also suggested that with an object to minimize the complain of car regarding after sales service, the automobile companies should have direct linkage with the customers through email, and the company should focus that whether the customers are really satisfied with after sales service or not.

Suganya R, (Jan 2012) in her research paper highlights the effect of brand equity on consumer purchasing behavior on car. The paper speaks that brand plays vital role in car sales, not only to attract but also to retain customers. The author concluded that brand awareness and perceived quality proved to influence the brand loyalty. Also brand loyalty and brand association affect customers' attitudes towards brand.

7. TABLE

• SIMPLE PERCENTAGE ANALYSIS

Table Showing Reason of Maruthi of the Respondent

S.no	Catergoires	No of resonpendent	Percentage
1.	Price	18	14
2.	Mileage	92	74
3.	Feature	15	12
	Total	125	100

INTERPRETATION

The table show 14% of the respondent are price 74% of the respondent are mileage 12% of the respondent are feature

INFERENCE

The majority 74% of the respondent are mileage

• LIKERT SCALE ANALYSIS

Factors	NO.OF.RESPONDENCE	Likert scale Value	Total score
Highly Dissatisfied	5	5	25
Dissatisfied	22	4	88
Neutral	83	3	249
Satisfied	8	2	16
Highly satisfied	7	1	7
	125	3.0	385



factors	no of respondents	likert scale value	total score
Highly dissatisfied	3	5	15
Dissatisfied	25	4	100
Neutral	83	3	249
Satisfied	9	2	18
Higly Satisfied	5	1	5
Total	125	3.0	387

INTERPRETATION

The Table Show 100% of the respondent are disatisfied 15% of the respondentare satfied

INFERENCE

Majority of 100% of the respondent are agree

8. SUGGESTIONS

- In this study, majority of the respondents are dominated by Male group and very few female having own car. To attract female consumer, the car mechanism has to change and driving system to be automated.
- Majority of the customers felt that the after sale service provided by the company is not up to the mark. Hence, the service offered to the customer should be improved by way of providing adequate information and offers regular repairs and maintenance service without any delay.
- With regard to interior decoration of car, majority of the customers opined that they are dissatisfied and ranked the last position by the customers. Some of them are neutralized with their opinion towards these services. In order to increase interior decoration of car may be added accessories, protecting steering wheel, dashboard, protecting seat covers, increase the storage space etc.,
- Majority of the customers dissatisfied with the facility of Air cooler of car and ranked as the last position. Hence, the company should increase the efficiency of the Air cooler facility by quick absorbing heat. Use window shades, sun visors, vent the interiors, A/c curtain are few ways to improve efficiency of air cooler.

9. CONCLUSION

Maruti is one of the most preferred brands by majority of the customers. The present study also has fulfilled all the objectives. The study has helps to find out important factors which influence buying behaviour Maruti car. In order to improve the production and sales operation the Maruti car manufactures has to

follow the above said suggestions. Most of customers are very much satisfied with regard to style/colour, safety, engine performance and driving comfort.

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EDUCATORS' KNOWLEDGE, SKILLS, COMPETENCIES AND PERFORMANCE IN THE FOURTH INDUSTRIAL REVOLUTION, PROVINCE OF LAGUNA

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ABSTRACT

This study aimed to determine the basic education educators' knowledge, skills, competencies, and performance for the Fourth Industrial Revolution in the Department of Education, Laguna. Data were gathered from one hundred and ninety-three (193) basic education educators from the Department of Education (DepEd), Division of Laguna. Survey questionnaire with five-scale checklist was adopted and used to gather data. The gathered data was statistically computed and analyzed using the mean, standard deviation, and Pearson r formulas in describing the direction of relationship between the given and among the foregoing variables respectively. They serve as basis for the empirical testing of the null hypotheses at a specified percentage level of significance in order to come up into valid analyses and interpretation of the findings as basis for reliable conclusions and feasible recommendations. Majority of the basic education educators are classified as belonging to Gen X and Gen Y. Only few are said to be Gen Z or popularly termed 'Millennials' As regard to sex, majority of the educators are female which proved that education is a female world. As to the highest educational attainment, basic education educators have varied educational attainment but the dominant attainment is completion of the Bachelor's degree with Masteral Units. On the length of service, Gen X and Gen Y, have quite spent a number of years from 6 years and above in the service educating learners. It was revealed that majority (76%) of the respondents admitted that they have not experience any form of training, seminar or similar activities which pertains to the Fourth Industrial Revolution. Only 50 or 24% of the respondents were in admission that they have attended some seminars, training, workshops and similar activities related to the Fourth Industrial Revolution. Basic education educators reported that they are knowledgeable (3.69) about the forces that shape education. Likewise, basic education educators admitted that they are knowledgeable. The skills and competencies of basic education educators on general qualities were reported as skilled (4.06) and competent (4.14) respectively; on the use of digital technology- educators said they are skilled (3.92) and competent (4.03) respectively; on developing digital learning resources, they admitted they are skilled (3.96) and competent (4.05) respectively; on re-mix of learning, educators said they are skilled (3.95) and competent (4.02) respectively; in the area of communication, educators said they are skilled (4.16) and highly competent (4.28) respectively; under facilitating learning, educators said they are highly skilled (4.24) and highly competent (4.23) respectively; on pedagogical strategies they admitted they are skilled (4.13) and competent (4.17) respectively; on assessment of learning, educators said they are skilled (4.15) and highly competent (4.22) respectively; and on personal characteristics, educators admitted they are highly skilled (4.29) and highly competent (4.29) respectively. According to the data gathered majority (92.23%) of basic education educators' performance are very satisfactory. Only few (7.77% were reported outstanding. The relationship between basic education educators' knowledge on the factors affecting education is reported to be weak but significant; on basic education educators' knowledge on the trends in education is moderately but significantly related to their performance. As regard the relationship between the basic education educators' skills and competence on their performance, it is reported that in the area of facilitating learning the relationship is very strong and significant. All other areas for the Fourth industrial revolution were reported to have strong and significant relationship with the basic education educators' performance.

INDEX TERMS— Competencies, Educator's knowledge, Educator's skills, Industrial Revolution, Performance

1. INTRODUCTION

The world today is at the threshold of a new era collectively termed 'Fourth Industrial Revolution' or simply written as "4IR". This phenomenal transformation renders the world to experience a wide array of information and communication technology, thereby creating a digital society.

This new pace of virtual world brings along sea of changes in the life of everyone irrespective of distance, time and space (Puncreobutr, 2016). With the current set up, school education and teachers' roles are currently challenged. Since teachers play crucial roles as communicators of knowledge and skills to students, they are responsible for increasing students' interest and developing talents and abilities. Teachers are also relied upon to build analytical, critical and creative thinking skills

in line with the educational thrusts of the society. Likewise, teachers are expected to form individuals who can adapt to the changes that occur around them.

The preceding idea further affirmed that 4IR is an era of accelerating change. It created varied social conditions which necessitate unique skill sets from the individual. In this highly innovative era, the students need to adjust in accordance to the changing behavior with the special characteristics of parallelism, connectivism (Goldie, 2016), and visualization. This learning management must help to develop the learner's ability to apply the new technology, and teachers have to assist the learners develop according to the changes in society. Sinlarat (2016) further argued that the learning management of this era is a new



learning system, allowing the learner to grow with knowledge and skills throughout their lives. That is, not just to know how to read and write, but also to be able to live in a society and to be equipped with the best of his/her ability according to the call of the time.

Given the expectations above, it is important to be knowledgeable about the nature of the 4IR so that proper adjustments can be made to render educational practices according to the demands of the era.

As argued by Ally (2019) though education progresses in the digital era it is not according to the paces of the Fourth Industrial Revolution. In that sense, it is of prime significance to know where are our educators at this point in time so that leaders can quantify and identify what actions can be taken to equip the educators with appropriate skills and competencies to make learning more adaptive and properly adjusted to meet the needs of individual learners. The emerging technology, artificial intelligence, and the internet of things are all important forces that are shaping education and are so potent that the only way to survive is to clinch to the raging change by making modifications to the current practices and processes. This can only be made possible when educators are equally prepared and equipped with the right skills and competence needed in such a milieu.

Against the preceding backdrop the researcher formulated the primary goal of this study which is to determine the educators' knowledge, skills, and competencies for the Fourth Industrial Revolution that can clarify where our basic education educators are right now in relation to the demands of the 4IR. This data may guide the education leaders to plan the possible in-service training programs to further equip the basic education educators in anticipation for a more challenging education environment. Further, these data may enable the researchers to identify issues and gaps, as well as the inadequacies of these education frontliners in the process of curriculum implementation. These factors may provide insights and serve as compass through which the Department of Education can calendar activities according to the sequencing of topics based on standardized approach.

The output of their research can empower every educator to conduct reflection of themselves to determine their status in the continuum of education for the Fourth Industrial Revolution and whether their preparations are still relevant and attuned to the demands of the new era. Also, the information generated from this study can be a motivation to plan and strategize approaches in improving the delivery of teaching – learning processes in the future.

2 OBJECTIVES

The primary aim of the study was to determine the basic education educators' knowledge, skills, and competencies for the Fourth Industrial Revolution in the Department of Education, in Laguna. Specifically, the study will attempt to answer the following problems:

1. The demographic profile of the basic education educators in the Province of Laguna in terms of the Age,

Sex, Highest educational Attainment and Length of Service.

2. The training, seminar/workshop and related activities attended by basic education educators which are related to 4IR.
3. The the educators' knowledge, skills and competencies of basic education educators in the Fourth Industrial Revolution.
4. The educators'/teachers' performance based on the variables included in the IPCRF.
5. The significant relationship between knowledge, skills and competencies with the educators'/teacher's performance in the Department of /education (DepEd) Laguna.
6. The recommendations can be forwarded to enhance the educators'/teachers' knowledge, skills, and competencies in the fourth industrial revolution.

3. METHODOLOGY

This study used descriptive – quantitative research method being the most commonly used method in educational research. This is the preferred method because it is objective in data collection, quantifies variables and describes phenomena using numbers to characterize them. Saunders et al (2008) assert that concepts, variables and hypotheses are chosen before the study begins and remain fixed throughout the study in a static design. McMillan and Schumacher (201) explain that quantitative methodology uses a deductive form of logic where theories and hypotheses are tested for cause and effect.

The respondents of this study were the basic education educators in public elementary schools in the Division of Laguna. To determine the population, the researcher browsed the master list of schools from the Department of Education (DepEd) Division of Laguna. Due to the bulk of numbers of educators in the basic education in the Fourth Congressional District of Laguna, the researcher consults the opinion of the university statistician whether it was appropriate to apply the Sloven's approach to determining the total respondents for this particular study. So, the researcher will first determine the number of elementary schools in the fourth district and the number of teachers in a particular school. From the total number of teachers, Sloven applied to determine the number of sample population in the study. From the sample population it was divided into the number of schools to determine the number of respondents per school without prejudice whether the school is small or big.

4, LITERATURE REVIEW

Going through existing literature, the reader was informed that the industrial revolution started in England in the 18th century. The term "Industrial Revolution" as coined by Auguste Blanqui and made popular by Arnold Toynbee in the eighteenth century simply denotes the economic and social changes arising out of the transition of industrialism. This revolution affects every sphere of human living including manufacturing, production, distribution, the economy, and socialization. The industrial revolutions transformed the world

with the first wave which is the age of mechanical production and water power, the second being the age of science and mass production, and the third being the rise of digital technology. As declared in 2016 by Klaus Schwab, the founder and executive chairman of the World Economic Forum (WEF), the fourth industrial revolution is here already (Marr, 2018).

According to Schwab's visionary work (2016), the Fourth Industrial Revolution is developing at an exponential, not a linear pace that not only changes "what" and "how" to do things, but also "who" we are. Accordingly, the introduction of Industry 4.0 has brought and will continue to bring profound changes in the global economy covering investment, consumption, growth, employment, trade, and so on. Growth and employment are certainly the areas most affected by the introduction of Industry 4.0 innovation.

The notes of Xing and Marwala (2019) both convey related ideas saying that the first industrial revolution was developed in the eighteenth century due to mechanical production obtained by water and steam, with the development of machine tools and an improvement of their efficiency. The second industrial revolution developed with the arrival of electricity and mass production, theorized by Smith and Taylor and implemented by Henry Ford in his Detroit factory for the production of the Model T. The third revolution was characterized by machine automation through the use of electronics and IT applied in the production processes (Xing and Marwala, 2019). The fourth industrial revolution integrates IT systems with physical systems to get a cyber-physical system that brings the real world into virtual reality.

But according to the Elonza (2019), it stated that the fourth industrial revolution is only an evolution of the third industrial revolution. In a straightforward perspective, the 4th industrial revolution, usually called Industry 4.0 or 4IR can simply be referred to as the current and developmental transformation in the ways human's function, which is a result of disruptive technologies and trends such as robotics, Internet of Things (IOT), virtual reality and Artificial Intelligence (AI) (Rouse, 2017). These disruptive technologies and trends have blurred the line between the physical, digital and biological spheres and as opined by (Marr 2018) will impact all disciplines, industries, and economies. According to Fisk (2017), these disruptive technologies are reshaping the world, and as such education in the world at large should focus on training students on these technologies. These include mobile internet, automation of knowledge and work, internet of things, cloud, advanced robotics, autonomous vehicles, genomics, energy storage, 3D printing, advanced materials, advanced oil and gas exploration, and renewable energy.

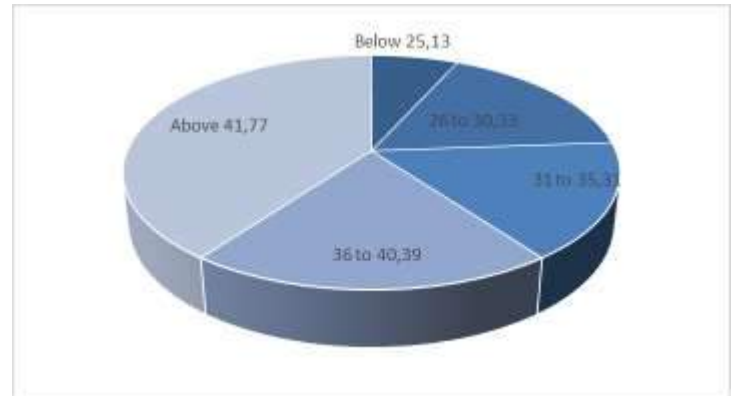
In affirming the preceding ideas, Lase (2019) claimed that at present, the world has entered the era of the fourth - generation industrial, which was characterized by increasing connectivity, interaction, and development of digital systems, artificial intelligence, and virtual. With the increasingly convergent boundaries between humans, machines, and other resources, information, and communication technology certainly have an impact on various sectors.

As a consequence of the preceding occurrences, it is

evident that no one can avoid these changes, so it is necessary to prepare adequate human resources to be ready to adapt and be able to compete on a global scale. Improving the quality of human resources through education is a way to balance the development of IR 4.0 (Lase, 2019).

5. DISCUSSION

Figure 1. Educators' Demographic Profile as to Age.



The educators' demographic profile was described in terms of age, sex, highest educational attainment, and length of service is shown in figure 1.

It can be noted that 77 of the educators are above 41 years of age (40%) while 39 of them have age that range from 36 to 40 years (20%). Only a small percentage of the educators are below 25 years old (7%). This means that the educators belong to the middle adulthood stage, the stage when they have accumulated knowledge and experience. Majority of the educators belong to Generation X (those who were born between 1965- 1980); Others belong to Gen Y (those who were born between 1981- 1996); the rest of the educators and only few of them are called Gen Z , the newest generation (those who were born between 1997 – 2021/15). They are currently between 6 – 25 years old (Kasasa, 2021).

Based on the categorization above, majority of the educators belonged to Gen X and Gen Y and are considered migrants to the world of Gen Z which is technologically dominated.

Figure 2. Educators' Demographic Profile as to Sex.

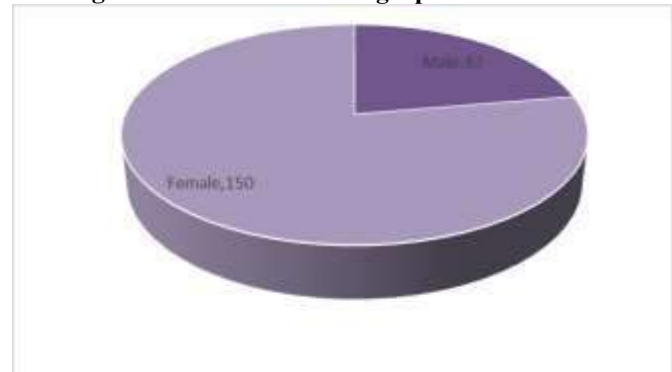


Figure 2 showcases the educators' demographic profile in terms of sex.

Obviously, there are 150 female respondents representing 78% and only 43 (22%) respondents are males. Information technology is driving everything and has reduced the whole world into a global village. Amid the campaign for gender equity promoting equal opportunity and fair treatment for males and females, it still can be observed that there is a low participation of females in information technology compared to males due to their gender and roles.

Figure 3. Educators' Educational Attainment Profile.

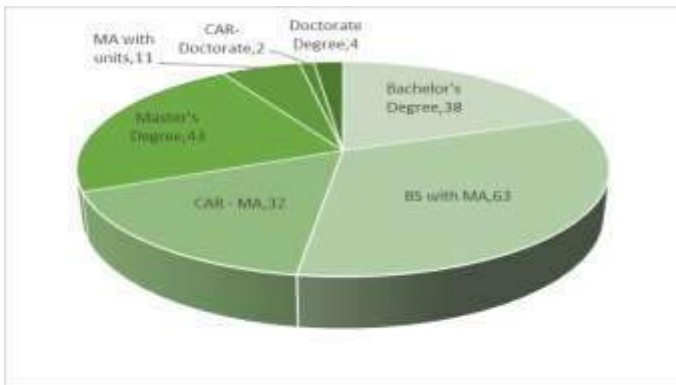


Figure 3 highlights the educational attainment of the respondents.

Based on the data illustrated in Figure 4, majority of the educator – respondents (63 or 33%) have earned MA units on top of their BS degree; while 43 or 20% of the educators are Master's degree holder; 38 or 20% are still with Bachelor's Degree.

The rest admitted they have either completed the academic requirements in their MA; some with MA units. Only few educators have Doctorate degree and others have completed their academic requirement in the said program. Nowhere in the literature review has suggested that educational attainment impacted the use of digital technology. But what is evident in literature is the role of digital technology in enhancing learning.

Figure 4. Educators' Length of Service' in Teaching.

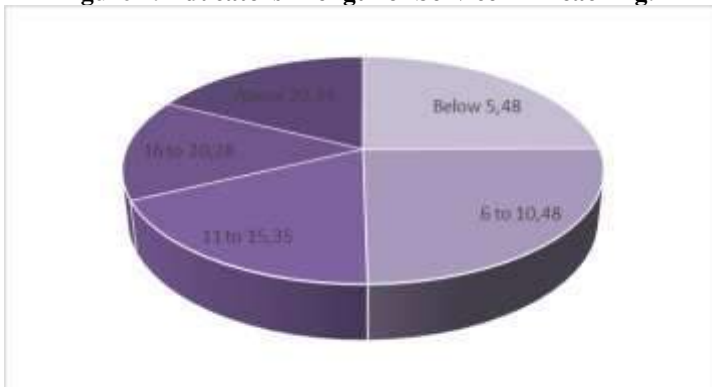
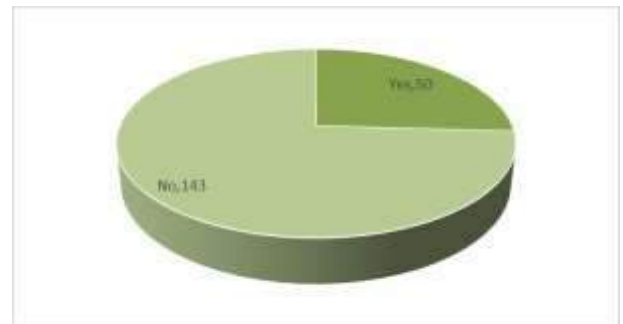


Figure 4 summarizes the teacher- respondents' number of years in service.

Initial appreciation of the data summarized in Table 5 suggests that majority of the teacher – respondents (48 Or 25%)

have served as teacher between 6 – 10 years; another quarter of them served (48 or 25%) for 5 years and below ; still some respondents reported to be in service (34 or 18%) for more than 20 years and the same number of teachers served between 11 to 15 years in serves; and only 28 teachers or 14% admitted they were in service for at least 16 – 20 years. It can be noted that majority of the educator – respondents have been serving as teacher for quite a number of years. This means that these teachers/educators have a long experience in the field of teaching.

Figure 5. Educators' Educational Attainment Profile.



The educators were asked if they had attended trainings related to the Fourth Industrial Revolution. Their responses are presented in Figure 5.

Obviously, almost three-fourths of the respondents admitted that they have not attended any form of professional development training, seminar or other forms of academic updating related to the 4th Industrial Revolution. Only 50 educators or 26% admitted that they have underwent some seminar, training, conferences, workshops and other related activities for the 4th Industrial Revolution.

This means that the majority of the educator – respondents have no exposure to the demands of the rapidly changing education environment and therefore, they could not bring to the students' the expected services that will empower the students to live in the challenging world of the 4th Industrial Revolution.

Table 1. Educators' Knowledge of the Forces that Shape Education.

Forces that Shape Education	Mean	Standard Deviation	Verbal Interpretation
Globalization	3.83	0.574	Knowledgeable
Fourth Industrial Revolution	3.47	0.771	Knowledgeable
New Generation of Learners	3.94	0.639	Knowledgeable
Open Education Resources	3.86	0.642	Knowledgeable
Artificial Intelligence	3.48	0.771	Knowledgeable
Information Explosion	3.44	0.827	Knowledgeable
Big Data	3.38	0.815	Knowledgeable



Internet of Things	3.85	0.709	Knowledgeable	trends from given sets of data			
Learning Analytics	3.46	0.721	Knowledgeable	7. Students will be assessed differently and the conventional platforms to assess students may become irrelevant or insufficient.	3.94	0.666	Knowledgeable
Education for All	4.18	0.669	Knowledgeable	8. The student's opinion will be considered in designing and updating the curriculum.	3.92	0.692	Knowledgeable
Overall Mean	3.69		Knowledgeable	9. Students will become more independent in their learning, thus forcing teachers to assume new roles as facilitators who will guide the students through their learning process.	4.02	0.641	Knowledgeable
				Overall Mean	3.98		Knowledgeable

These trends and forces drastically change the role of the teachers. Some of the trends and forces mentioned are events that pose challenges such as: the 4th Industrial Revolution, the output of the World Education Forum, innovative pedagogy proposed by some scholars, information explosion due to the increasing use of the internet, life-long learning, artificial intelligence and a move to open education resources.

The educators are knowledgeable of the forces and trends that shape education particularly the concepts about Education for All (M=4.18, SD=0.669), New Generation of Learners (M=3.94, SD=0.639), Open Education Resources (M=3.86, SD=0.642), and Internet of Things (M=3.85, SD=0.709). They also disclosed that they are knowledgeable of concepts like globalization, learning analytics, artificial intelligence, information explosion, fourth industrial revolution, and big data. The overall mean of 3.69 signifies that the educators are knowledgeable of the concepts about the 4th Industrial Revolution. This means that the educators are familiar with technological advancements that shape education. They are aware of the changes that are happening across the globe.

Table 2. Educators' Knowledge of the Trends in Education.

Trends in Education	Mean	SD	Verbal Interpretation
1. Learning can take place anytime, anywhere learning tools offer great opportunities for remote self – paced learning.	4.12	0.633	Knowledgeable
2. Learning will be personalized to individual students	4.01	0.645	Knowledgeable
3. Students have a choice in determining how they want to learn.	4.04	0.664	Knowledgeable
4. Students will be exposed to more project – based learning.	3.91	0.635	Knowledgeable
5. Students will be exposed to more kinds of learning through internship, mentoring projects, and collaborative projects.	3.98	0.653	Knowledgeable
6. Students will be exposed to data interpretation in which they are required to apply their theoretical knowledge to numbers, and use their reasoning skills to make inferences based on logic and	3.88	0.647	Knowledgeable

Preliminary observation of the data suggests that teachers/educators are knowledgeable about the nine trends in education. The educators' responses on their knowledge about the trends in education are reported as knowledgeable particularly trend number 1 which says that 'learning can take place anytime, anywhere learning tools offer great opportunities for remote self – paced learning' (M=4.12, SD=0.633), trend number 3 'students have choice in determining how they want to learn' (M=4.04, SD=0.664) and trend number 9 'students will become more independent in their learning, thus forcing teachers to assume new roles as facilitator who will guide the students through their learning process' (M=4.01, SD=0.645).

The educator – respondents also reported that students will be exposed to more kinds of learning through intern ships, mentoring, project and collaborative projects; more project based- learning; students will be assessed differently, students' opinion will be considered in designing and updating the curriculum and students will be exposed to data interpretation in which they are required to apply their theoretical knowledge to numbers and use their reasoning skills to make inferences based on logic and trends from given sets of data.

The overall mean of 3.98 signifies that the educators are knowledgeable of the educational trends brought about by the 4th Industrial Revolution. This means that the educators are sensitive to the challenges they will soon encounter due to technological advancements that set educational trends. They are aware of the impending changes that are happening across the globe in general and the Philippine education in particular.



Table 3. Shows the Educators' General Qualities

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. I am comfortable working in a virtual environment.	3.80	0.648	S	4.04	0.598	C
2. Provide support of learners regardless of location and time.	4.03	0.628	S	4.16	0.565	C
3. Work from anywhere and at any time.	4.05	0.667	S	4.16	0.577	C
4. Teach students life skills.	4.13	0.552	S	4.15	0.540	C
5. Keep up with emerging learning technologies to use in education.	4.01	0.604	S	4.10	0.568	C
6. Keep current in the content area to facilitate learning	4.06	0.588	S	4.13	0.519	C
7. Encourage students to be good citizens.	4.39	0.578	HS	4.26	0.600	HC
8. Basic knowledge of artificial intelligence.	3.74	0.681	S	3.98	0.625	C
9. State of the art (current) knowledge in the subject area.	3.96	0.649	S	4.11	0.572	C
10. Collaborate virtually with other teachers to share information on learners' progress.	4.12	0.591	S	4.20	0.571	HC
11. Share effective learning practices with other teachers.	4.18	0.568	S	4.19	0.574	C
12. Prepare learners to live in harmony with the environment.	4.18	0.562	S	4.20	0.571	HC
Overall Mean	4.06		Skilled	4.14		Competent

over-all mean of skills is 4.06 verbally interpreted as skilled; Competencies earned an over-all mean of 4.14 also with verbal interpretation of competent.

This means that these educators - respondents are generally consistent in integrating citizenship education in their daily class routine since they have already developed competence and therefore are skillful in handling the activities that promote citizenship training among their students.

Table 3 shows the general qualities based on skills and competencies for the fourth industrial revolution. However, indicators 10 and 12 'collaborate virtually with other teachers to share information on students' progress' and 'prepare learners to live in harmony with the environment' respectively were reported to register means of 4.20 and verbally interpreted as highly competent. It seems that the respondents are getting confused. One could not be reported as highly competent but only skillful.

The unparalleled report between skills and competencies simply confirmed the idea that our educator- respondents have no adequate preparation yet for the 4th Industrial Revolution. Though they admitted to

have knowledge on the factors and trends affecting education brought by the 4th Industrial Revolution the educator – respondents are not yet totally prepared to embrace the changes.

Table 4. Educators' Skills and Competencies as to Use of Digital Technology.

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. Be digitally literate.	4.02	0.625	S	4.08	0.577	C
2. Integrate technology in the curriculum seamlessly.	3.95	0.619	S	4.07	0.560	C
3. Be comfortable when using technology.	4.02	0.653	S	4.08	0.586	C
4. Use learning analytics to monitor individual learner progress.	3.88	0.617	S	3.99	0.573	C
5. Use assistive technology to provide support to learners with special needs.	3.86	0.682	S	3.99	0.595	C
6. Integrate augmented reality, virtual reality and mix reality to learners a real-life experience.	3.84	0.719	S	3.99	0.591	C
7. Trouble shoot basic technology problems.	3.72	0.741	S	3.93	0.649	C

Tables 3 to 11 summarize the skills and competencies of educator-respondents of the current study. Table 3 next page showcases the general qualities of teacher/educator-respondents for the 4th Industrial Revolution. Initial appreciation of the data suggests that the respondents' general qualities shown in the



8. Adapt to emergency technology.	3.84	0.715	S	4.00	0.568	C
9. Use multimedia technologies to deliver learning materials in a variety of formats.	4.01	0.653	S	4.03	0.590	C
10. Ability to independently learn how to use new technology and software.	3.85	0.653	S	4.01	0.577	C
11. Use technology to provide efficient support to learners.	3.97	0.628	S	4.11	0.547	C
12. Have knowledge of the culture and local practice to select the most appropriate technology.	3.90	0.658	S	4.03	0.563	C
13. Explore emerging technologies for learning.	3.94	0.631	S	4.05	0.593	C
14. Use features of the technology to enrich the learning process.	3.94	0.605	S	4.06	0.583	C
15. Adapt the technology to the needs of the learners.	4.03	0.616	S	4.09	0.551	C
Overall Mean	3.92	Skilled		4.03	Competent	

Table 5. Educators' Skills and Competencies on Developing Digital Learning Resources.

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. Have knowledge of the content.	4.01	0.595	S	4.10	0.564	C
2. Select the appropriate digital technology to match the content and the learning outcome.	3.95	0.571	S	4.07	0.578	C
3. Create high quality digital learning materials.	3.82	0.664	S	3.95	0.584	C
4. Develop learning materials to meet specific learning needs.	3.98	0.573	S	4.05	0.566	C
5. Develop learning materials with limited knowledge of the learner's language, culture, and situation.	3.90	0.645	S	4.04	0.557	C
6. Identify quality and valid learning materials for learners to access.	3.96	0.572	S	4.07	0.578	C
7. Use different strategies for different learning situations.	4.02	0.595	S	4.06	0.556	C
8. Use problem-based learning to develop learners' high-level knowledge and skills.	3.96	0.557	S	4.06	0.614	C
9. Share learning resources with other teachers.	4.03	0.577	S	4.08	0.524	C
Overall Mean	3.96	Skilled		4.05	Competent	

Table 4 highlights the skills and competencies of educators on the use of digital technology.

Indicator No. 3- 'Be comfortable when using technology (M-4.08, SD- 0.586). Likewise, educators claimed they are competent in all other indicators under the use of digital technology.

Over-all, the educators claimed they are skilled and competent in the use of digital technology as shown by the means of 3.92 and 4.03 respectively. These findings are congruently aligned with the pronouncement of Ally (2019) who said that in the digital era, especially in the Fourth Industrial Revolution, the teachers should be digitally literate to use technology to deliver and support education.

Table 5 summarizes educators' skills and competencies on developing digital learning resources.

Under this category, there are 9 indicators through which educators rate their skills and competencies. Preliminary appreciation of the data reports that educators claimed they are skilled in Indicator no. 9- 'Share learning resources with other teachers' (M-4.03, SD- 0.577) Indicator no. 7-

'Use different strategies for different learning situations' (M-4.02, SD- 0.595); Indicator No 1- 'Have knowledge of the content' (M- 4.01, SD- 0.595). Educators also admitted that they are skilled in all other indicators under this category.



As to the educators' competencies, they claimed that they have competencies in Indicator no. 1- 'Have knowledge of the content' (M- 4.10,SD- 0.564); Indicator No 9- 'Share learning resources with other teachers' (M-4.08, SD- 0.524); Indicator no 2- 'Select the appropriate digital technology to match the content and learning outcome'(M- 4.07, SD- 0.57); Indicator no. 6- 'Identify quality and valid learning materials for learners to access' (M-4.07, SD- 0.578). All other indicators were reported by educators that they have competencies.

Table 6. Educators' Skills and Competencies on the Re-mix

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. Select appropriate digital learning resources to maximize learning.	3.94	0.588	S	4.01	0.550	C
2. Access appropriate open education resources to integrate into the curriculum.	3.93	0.569	S	4.00	0.540	C
3. Modify the learning resources to align with the learning outcome.	4.00	0.577	S	4.04	0.514	C
4. Re- mix open education resources to meet the needs of individual learners.	3.92	0.589	S	3.99	0.500	C
5. Assess the quality of open education resources.	3.94	0.605	S	4.05	0.533	C
<i>Overall Mean</i>	<i>3.95 Skilled</i>			<i>4.02 Competent</i>		

Table 6 showcase the educators' skills and competencies on the re-mix of learning resources.

There are many kinds of AT that help kids with learning and attention issues. These tools can help them work around their challenges while playing to their strengths. This helps them become more successful, productive students. At the same time, their confidence and independence can grow.

Table 7. Educators' Skills and Competencies on Communication.

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. Communicate at the level of the learners.	4.21	0.558	HS	4.26	0.547	HC
2. Use appropriate non – verbal communication when interacting with the learners using two – way video and text.	4.08	0.577	S	4.18	0.562	C
3. Model good digital citizenship when using social media to communicate with learners and peers.	4.17	0.607	S	4.21	0.579	HC
4. Communicate in the language of the learners.	4.17	0.635	S	4.23	0.552	HC
<i>Overall Mean</i>	<i>4.16 Skilled</i>			<i>4.22 Highly Competent</i>		

Table 7 showcases the educators' skills and competencies on communication. As observed, there are only 4 indicators in communication.

Of the four indicators, only Indicator 1- 'Communicate at the level of the learners' earned (M- 4.21, Sd-0.558) the highest mean which has an interpretation of 'highly skilled'. All other three means though registered varied means are interpreted as skilled. This finding means that educators are doing their responsibility as educators since they are really expected to communicate at the level of the learners to maximize and achieve positive learning outcomes.

On the area of competencies, three of the four indicators earned means with verbal interpretation of highly competent, namely: Indicator 1 – 'Communicate at the level of the learners' (M-4.26, SD- 0.547); Indicator no 4 – 'Communicate in the language of the learners' (M- 4.23, SD- 0.552); Indicator No. 3- 'Model good digital citizenship when using social media to communicate with learners and peers' (M- 4.21, SD- 0.579). The other indicator was considered by educators that they are competent.

Based on the over-all mean of skills (M- 4.16) and competencies (M- 4.22) interpreted as skilled and highly competent respectively, it can be deduced that educators are skilled in communication and highly competent communicators.

Therefore, education should be turned to a life-long activity and should be restructured by taking into account the technological developments and adjustment to the globalizing world (Buyukbaykal, 2018).

The preceding idea is emphasized by Ally (2019) who reiterated that an important area of teachers' responsibilities is communicating with learners using digital technology.



Table 8. Educators' Skills and Competencies on Facilitating Learning.

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. Personalize the learning for individual learners.	4.08	0.549	S	4.12	0.551	C
2. Respond to learners' questions in a timely manner.	4.21	0.570	HS	4.24	0.566	HC
3. Ability to change strategies when supporting the learner to meet the learner needs	4.11	0.572	S	4.18	0.571	C
4. Respect different learner types and adapt to the learner.	4.24	0.573	HS	4.31	0.591	HC
5. Encourage creativity.	4.25	0.578	HS	4.25	0.562	HC
6. Encourage innovation.	4.26	0.600	HS	4.26	0.557	HC
7. Be a good listener.	4.33	0.606	HS	4.34	0.582	HC
8. Promote appropriate feedbacks.	4.25	0.598	HS	4.26	0.547	HC
9. Show enthusiasm about the learning materials.	4.29	0.558	HS	4.26	0.557	HC
10. Model working in the digital age.	4.11	0.581	S	4.16	0.568	C
11. Motivate learners to learn.	4.36	0.588	HS	4.33	0.597	HC
12. Encourage social interaction between learners.	4.30	0.562	HS	4.26	0.557	HC
13. I have the ability to formulate good questions when interacting with learners.	4.20	0.561	HS	4.21	0.541	HC
14. I model good virtual behavior.	4.30	0.580	HS	4.25	0.578	HC
15. I am approachable.	4.37	0.616	HS	4.38	0.575	HC
16. I promote and model virtual citizenship and responsibility.	4.32	0.578	HS	4.25	0.571	HC
17. I encourage authentic learning.	4.29	0.567	HS	4.22	0.547	HC
18. I inspire learners.	4.35	0.576	HS	4.30	0.578	HC
19. I create a comfortable learning atmosphere.	4.33	0.572	HS	4.27	0.577	HC
20. I provide feedback to individual learners to meet their individual needs.	4.30	0.569	HS	4.23	0.559	HC
21. I interpret learners' dashboard to monitor each learner's performance.	4.13	0.611	S	4.15	0.607	C
22. I interpret learners' question.	4.22	0.556	HS	4.19	0.540	C
23. I solve learners' problems.	4.11	0.575	S	4.13	0.552	C
24. I provide support to learners who are on the go.	4.23	0.595	HS	4.18	0.568	C
25. I act as coach for learners.	4.30	0.569	HS	4.24	0.573	HC
26. I act as a mentor for learners.	4.30	0.569	HS	4.25	0.598	HC
27. I support learners using digital technology.	4.15	0.568	S	4.13	0.571	C
28. I am an expert in the content to help learners who will be at different points in the learning process.	4.06	0.565	S	4.13	0.561	C

Initial observation of the data in Table 8, suggest that of the 29 indicators, the respondents registered 22 indicators reported were highly skilled and only 7 indicators where the respondents claimed they were skilled. The top 5 indicators respondents claimed they are highly skilled were: Indicator no. 15 – 'I am approachable' (M- 4.37, Sd-0.616).; Indicator no. 11- 'Motivate learners to learn' (M-4.36, SD- 0.588); Indicator no.18-'I inspire learners' (M-4.35, SD- 0.576); Indicator no. 7- 'Be a good listener'(M-4.33, SD- 0.606); Indicator no 19 – 'I create a comfortable learning atmosphere'(M-4.33, SD- 0.372). The top 3 indicators that were reported by respondents that they are skilled are: Indicator no 27- 'I support learners using digital technology' (M-4.15, SD-m0.568); Indicator no. 21-'I interpret learner's dashboard to monitor each learner's performance' (M-4.13. SD- 0.611); Indicator No 23-'I solve learners' problem' (M-4.11, SD- 0.575).

On competencies, it was reported that educators do have 19 indicators where they reported to be highly competent

and 10 indicators where they are competent. The top five indicators where the respondent claimed to be very competent are: Indicator no. 15 –'I am approachable'' (M-4..38, SD- 0.575). It can be observed that this is also the indicator in the skills where the respondents got highest mean. This consistency of admission is a manifestation that teachers should really be approachable so that students will not feel threatened every time they want to seek assistance from their teachers. Perhaps, this is the most important character that every teacher should possess.

The next indicator which gained second highest mean is Indicator no. 7- 'Be a good listener' (M-4.34, SD-0.582); Indicator No 11- Indicator no. 11- 'Motivate learners to learn' (M-4.33, SD- 0.597); Indicator no. 4- 'Respect different learner types and adapt to the learner' (M-4.31, SD- 0.591); Indicator no 18- 'I inspire learners' (M-4.30, SD- 0.578).

The top 5 competencies indicators which were reported by respondents that they are competent are: Indicator no 22- 'I interpret learners' questions' (M-4.19, SD-0.540); Indicator no. 3- 'Ability to change strategies when supporting the learners to meet the learning needs' (M-4.18, SD- 0.671); Indicator No 10- 'Model working in the digital age' (M-4.16, SD-0.568); Indicator no 21- ' I interpret learners' dashboard to monitor each learners performance' (M-4.15, SD-0.607); Indicator no. 23- 'I solve learners problems' (M- 4.13, SD- 0.552).

With the preceding data, the overall mean under the area of skills is 4.24 verbally interpreted as highly skilled and the over-all mean under competencies is 4.23 verbally interpreted as highly competent. Collectively, it can be concluded that the educator – respondents are doing their most important responsibility to their students. This finding is supported a vivid idea that teacher's main role is as a facilitator – there to offer support and advice when needed, and to provide the necessary scaffolding and teaching of skills when necessary. It is vital that teachers remember to teach and instruct their students in any particular skill.

This is further supported by Ally (2019) who emphasized that the preceding results are an indication that a major role of the digital teacher is as a facilitator of learning. In the digital era, learners will be learning virtually when there is physical separation of the digital teacher and the learners.

Preliminary observation of the data in Table 9, suggest that the 12 indicators were rated variedly by the respondents. But despite its varied means, its verbal interpretation showed similarity except on 2 indicators, namely Indicator no 9 – 'I encourage learners during the learning process'(M-4.20, SD- 0.523); Indicator no. 12-'I encourage learners to learn independently' (M- 4.20, SD-0.526).

In the case of competencies, the respondents also showed varied ways of perceiving their competencies. But despite varied means, it also shares similar interpretation except on two indicators which was initially identified under the column of skills.



Table 9. Educators’ Skills and Competencies on Pedagogical Strategies.

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. I use appropriate pedagogical approach.	4.04	0.529	S	4.18	0.524	C
2. I use appropriate learning theories to develop learning strategies to maximize learning.	4.06	0.561	S	4.15	0.524	C
3. I offer choices and multiple options for presenting concepts through resources and support options.	4.11	0.547	S	4.17	0.524	C
4. I prescribe learning activities for individual learners.	4.13	0.539	S	4.13	0.509	C
5. I use appropriate collaborative on-line learning framework to encourage interaction between learners and between the teacher and the learners.	4.08	0.612	S	4.11	0.553	C
6. I suggest remedial activities to help learners who need them.	4.16	0.540	S	4.18	0.540	C
7. I use a variety of learning strategies to develop high level knowledge and skills.	4.15	0.559	S	4.16	0.540	C
8. I use interactive strategies such as serious games and simulations to motivate learners.	4.09	0.561	S	4.16	0.568	C
9. I encourage learners during the learning process.	4.20	0.523	HS	4.23	0.552	HC
10. I suggest additional learning activities for learners who need them.	4.16	0.530	S	4.19	0.527	C
11. I use problem- based learning to encourage high level learning.	4.14	0.546	S	4.17	0.527	C
12. I encourage learners to learn independently	4.20	0.526	HS	4.23	0.543	HC
Overall Mean	4.13	Skilled		4.17	Competent	

Table 9 summarizes the educators’ skills and competencies on pedagogical strategies.

This finding is supported by Ally (2019) who stressed that teachers have to use appropriate pedagogical strategies to allow students to achieve the learning outcomes.

In the case of competencies, the respondents also showed varied ways of perceiving their competencies. But despite varied means, it also shares similar interpretation except on two indicators which was initially identified under the column of skills. These are: Indicator no 9 – ‘I encourage learners during the learning process’(M-4.23, SD-0.552); Indicator no. 12-‘I encourage learners to learn independently’ (M- 4.23, SD-0.543).

The over-all mean under skills is 4.13 and under competencies is 4.17 both have interpretation of highly skilled and highly competent respectively. This simply confirms the previous findings that majority of the educator- respondent have been in service for 10 years or more. This proved that they are experienced and knowledgeable on their craft. Thus, they are highly skilled and highly competent in their used of pedagogic strategies.

Table 10 summarizes the educators’ skills and competencies on assessment of learning.

As illustrated in Table 10 next page the 4 indicators characterizing the assessment of learning practiced by educators in the classroom manifest variety of perceiving the educators assessing practices. Only 1 of the four indicators of assessment skills was reported that educators were highly skilled.

Indicator no 2 –‘I use assessment strategies to measure the learners’ performance’ (M-4.20, SD- 0.545). All other indicators were reported with means whose verbal interpretation is skilled.

On competencies, there are three indicators which

earned means with verbal interpretation of highly competent, namely: Indicator no 4 –‘I provide feedback to learners’(M-4.26, SD-0.545); Indicator No 1- ‘I select assessment strategies to meet the learning outcomes (M- 4.25, SD- 0.559); Indicator no 2- ‘I use assessment strategies to measure the learners performance’ (M- 4.24, SD- 0.555).

The other indicator was reported by the respondents that they are also competent in doing it. Over-all mean of skills earned a mean of 4.15 and competencies registered a mean of 4.22 which are verbally interpreted as skilled and highly competent respectively. This finding means that educators are skilled in using assessment tools in assessing students’ learning and are highly competent in its implementation.

Table 10. Level of Educators’ Skills and Competencies on Assessment of Learning.

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. I select assessment strategies to meet the learning outcome.	4.17	0.537	S	4.25	0.559	HC
2. I use assessment strategies to measure the learner’s performance.	4.20	0.545	HS	4.24	0.555	HC
3. I use virtual assessment strategies to assess performance.	4.03	0.608	S	4.12	0.608	C
4. I provide feedback to learners.	4.19	0.530	S	4.26	0.545	HC
Overall Mean	4.15	Skilled		4.22	Highly Competent	

This is emphasized by Ally (2019) who subscribe to the idea that teachers must provide feedback to learners and assess learner’s performance using appropriate assessment strategies. The assessment must be authentic to improve learner’s performance and it allows learners to receive academic credit on the lesson or courses they would complete.

The same belief was reiterated by Conrad and Openo (2018) who encourage the teachers to adopt authentic assessment so that the students are properly guided on what area to improve, which one skill needs to be sustained in order to direct the student’s effort and maximize its resources to achieve the target outcome.

Table 11 highlights the educators’ skills and competencies on personal characteristics.

There are 15 indicators on personal characteristics. As manifested in Table 11, the respondents have varied perceptions about their personal characteristics as shown by the mean in each indicator. Educators reported that they are highly skilled in 14 indicators. Only in Indicator 9 - ‘I think digitally’ (M-4.13, SD-0.533) where the educator- respondents claimed they are skilled. As regard their competencies, the same numbers of indicators were reported by the educators that they are highly competence except in Indicator 9 – I think digitally (M- 4.18, SD 0.534) which they reported that they are competent. This finding is in consonance with the thoughts forwarded by Ally (2019) who said that a digital teacher should have personal characteristics to be a



good role model, provide quality education and support to learners' inability to think digitally which maybe brought about limited resources either at home or in the workplace.

Indicators	Skills			Competencies		
	Mean	S. D.	V. I.	Mean	S. D.	V. I.
1. I am socially responsible for the use of resources and also environmental friendly.	4.27	0.540	HS	4.33	0.561	HC
2. I am a good role model for learners.	4.29	0.585	HS	4.31	0.554	HC
3. I work in virtual teams to share information with other teachers.	4.20	0.545	HS	4.21	0.579	HC
4. I accept innovation in the learning system.	4.32	0.569	HS	4.25	0.552	HC
5. I show enthusiasm virtually.	4.26	0.555	HS	4.27	0.552	HC
6. I am a lifelong learner.	4.38	0.556	HS	4.33	0.553	HC
7. I keep learners' information confidential.	4.37	0.609	HS	4.36	0.570	HC
8. I consider privacy issues and keep learners' information.	4.37	0.563	HS	4.34	0.566	HC
9. I think digitally.	4.13	0.533	S	4.18	0.534	C
10. I am open – minded.	4.35	0.559	HS	4.33	0.561	HC
11. I am sensitive to learners' individual differences.	4.36	0.553	HS	4.33	0.570	HC
12. I use good social skills when working virtually.	4.23	0.540	HS	4.27	0.568	HC
13. I am flexible and adaptable in the modern digital age.	4.22	0.575	HS	4.21	0.585	HC
14. I show	4.28	0.535	HS	4.28	0.554	HC

empathy by maintaining humanity virtually.						
15. I model good virtual behavior.	4.31	0.537	HS	4.30	0.587	HC
Overall Mean	4.29 Highly Skilled			4.29 Highly Competent		

The basis of the performance of the basic education educators is the IPCRF results. It comprises ratings for content knowledge and pedagogy learning environment, curriculum and planning, assessment and reporting, and plus factor.

Table 12 summarizes the educators' performance based on the IPCRF.

Majority of the educators got very satisfactory ratings for content knowledge and pedagogy (89.64%), learning environment (91.71%), curriculum and planning (91.19%), assessment and reporting (91.19%), and plus-factor (92.23%). Only few of the educators got outstanding ratings for these areas. Looking at their over-all performance rating, 178 of the educators got very satisfactory rating (92.23%) and 15 of them got outstanding rating (7.77%).

Table 12. Basic Education Educators' Performance based on IPCRF

Performance	Outstanding		Very Satisfactory	
	f	%	F	%
Content knowledge and pedagogy	20	10.36%	173	89.64%
Learning environment	16	8.29%	177	91.71%
Curriculum and planning	17	8.81%	176	91.19%
Assessment and reporting	17	8.81%	176	91.19%
Plus-factor	15	7.77%	178	92.23%
Overall Rating	15	7.77%	178	92.23%

This means that the educators were able to perform their major task as facilitator of learning and other related roles and responsibilities assigned to them as educators. Thus, they got very satisfactory rating. On the other hand, those with outstanding rating excel in all aspects of the educative process and other auxiliary functions assigned to them which only few can assume the roles brought about by some factors that can limit or spur one's capability.

The present study determined the correlation between the educators' performance and their perceived knowledge, skill, and competencies in the technological advancement in education. It was found that there is a very strong correlation between the educators' performance and their skill in facilitating learning ($r=0.916$). The correlation is significant at a p-value of 0.000.



This means that as the educators' skill in facilitating leaning increases their performance rating also increases.

Table 13 summarizes the relationship between educators' performance and their perceived knowledge, skills and competencies for the fourth Industrial Revolution.

Table 13. Relationship between Educators' Performance and their Knowledge, Skills and Competencies.

Knowledge, Skills and Competencies	r-value	p-value	Degree of correlation	Analysis
Forces that shape education	0.371	0.000	Weak	<i>Significant</i>
Trends in education	0.501	0.000	Moderate	<i>Significant</i>
General Qualities	0.699	0.000	Strong	<i>Significant</i>
Use of digital learning resources	0.603	0.000	Strong	<i>Significant</i>
Development of digital learning resources	0.601	0.000	Strong	<i>Significant</i>
Re-mix of learning resources	0.623	0.000	Strong	<i>Significant</i>
Communication	0.718	0.000	Strong	<i>Significant</i>
Facilitating learning	0.916	0.000	Very strong	<i>Significant</i>
Pedagogical strategies	0.737	0.000	Strong	<i>Significant</i>
Assessment of learning	0.663	0.000	Strong	<i>Significant</i>
Personal characteristics	0.719	0.000	Strong	<i>Significant</i>

- There is a need to conduct further studies on the challenges brought by the Fourth Industrial Revolution to gain clearer and in – depth knowledge on how to prepare educational systems especially in the developing world like the Philippines.
- The Fourth Industrial Revolution should be reviewed thoroughly especially the issues and challenges accompanying it so that the education sector could also plan relevant programs to equip its educators in carrying out changes necessary for the changing time.
- Teachers, without bias and prejudice may be given enhancement seminars and workshops by inviting resource speakers who are well informed about the Fourth Industrial Revolution to clarify its impact on the educational system and may provide ways and means of educating teachers to fit the demand of the era.
- Administrators and teachers are encouraged to work together through proper consultation with one another and agree on priorities, and emphasis should be on the pedagogy by means of the latest technological stretching-the-mold approach in order to enhance further the learning of the complicated applications in making instructional delivery mechanisms effective.
- Administrators' and teachers' excellent and very satisfactory performance ratings may be further reviewed and move to authentic assessment of teachers to generate real state of Philippine educational system so that when time comes that artificial intelligence will be implemented there is less problem than anticipated.
- The future researcher may include a wider scope of study particularly the number of respondents and maybe in another level of education to ascertain how prepared are our schools in embracing the tasks embedded in the Fourth Industrial Revolution (Education 4.0),
- Trainers of teachers must stay abreast of emerging technologies particularly the future of Artificial Intelligence (AI), robotics and internet of things. Future researchers should consider and determine the role of the human teacher in relation to the robotic teacher.

6. CONCLUSION

Based on the summary of findings presented above, the conclusion is hereby drawn: There is significant relationship established between basic education educators' knowledge, skills, and competencies for the fourth Industrial Revolution and their performance based on the IPCRF. Therefore, the null hypothesis is rejected.

7. RECOMMENDATION

Based on the foregoing findings and conclusions, the following recommendations are respectfully endorsed:

- The competency profile of basic education educators may guide and assist educational leaders on what areas of will be organized to equip the educators further to render them fit to the demands of the Fourth Industrial Revolution.

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PHYSICAL QUALITY AND PRODUCTIVITY OF COCOA BEAN (*Theobroma cacao* L.) BASED ON CANOPY POSITION AND PLANT AGE

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ABSTRACT

The research aimed to study the cocoa bean quality and productivity based on their position on canopy and different plant ages. This has been conducted at cocoa farming area at Wonggeduku Subdistrict, Konawe Regency, Southeast Sulawesi Province. These treatments were arranged based on the nested design in which the pod position on the canopy i.e. on main stem, primary and secondary branches, and nested to the plant ages i.e. 8,10, 12, and 14 years old were used. The observed variable were pod length, pod diameter, seed weight, seed number, and dry production per pod. The data gathered were analysed by analysis of variance and the difference between treatments were justified by Duncan's Multiple Range Test at 95% significant level. To study the relationship between plant ages and pod position on canopy, the regression analysis was applied. Research result showed that there were interaction effect on pod position and ages on all variable observed. The best treatment on the main stem and primary branch at eight year age of the plant was on the length, diameter and weight of pods, seed number, and dry seed production per pod.

KEY WORDS: Cocoa pod, plant age, pod position, production, quality

INTRODUCTION

Cocoa (*Theobroma cacao* L.) was the biggest commodity export of Indonesia government from year to year with 326,815 tons in 2015 which increasing 7.4% from 2014. Indonesian government via Ministry of Trade have always been increasingly the production of national cocoa in 2020 on 1.2 million tons. Indonesian cocoa bean was the biggest exportir after palm oil and rubber [1].

International commission of cocoa organization (ICCO) have reported that in 2016 the cocoa production was achieved 3.971 million tons, while the world needed will be in 4.1 million tons, so that there were 197,000 tons have to be produced, and the world prediction in 2020 have reached in 4.7 million tons [2]. By this obstacle, the Indonesian government have opportunity to rise cocoa production for international market [3].



The production quantity and quality of cocoa bean have to be increased in both Indonesian government and farmers. It is depend upon the genetical, environmental and management of factors. The environmental factors that affected the cocoa production were altitude, contour, physical properties of the soil, viz. sand and loam fractions, pH, carbon organic, nitrogen total, phosphorus availability, Al-exchanged, and cation exchange capacity (CEC) [4]. The climatic factors like rain, humidity, and sunray intensity, also win speed were those factors that affected the plant metabolism processes, for example the plant growth, quality and quantity production including the physical and chemical composition of cocoa bean [5].

The quality of cocoa bean obtained was strongly related to the managerial plantation and production mainly to the post harvest practiced [6]. Besides, the physical, chemical, and microbiologis of the cocoa bean were the most important factors that determined the quality of the cocoa bean. Physical characteristics of cocoa bean was used to bean grouping based on their physical performances. The pod position in the main, primary, and secondary stem, were expected to have the physical and chemical quality of differentiation. It is based on the Kusumastuti [7], statement that the cocoa bean that lied on the main stem, primary and secondary branches have the different quality of the seeds resulted. From explanation above, the important research must be done to study the effect of cocoa been position on the canopy and plant age on the physical quality of cocoa bean.

MATERIALS AND METHODS

Research Location and Time

This research was done in Wonggeduku Subdistrict Konawe Regency Southeast Sulawesi on 2018. The experimetal tolls were used like basket, cocoa pods, scissors, container, and scale.

Sample Determination

The nested design was used and the treatments were arranged in pod position in the canopy (main, primary, and secondary stems) that nested to the plant ages (8, 10, 12, and 14 years) were applied. The plants sample were randomly determined by 3 plants per experimental block, and of each position was harvest 3 pods of cocoa.

Observation Variable

Observation variable including the quality of pods i.e. pod length (cm), pod diameter (cm), and pod weight (g), meanwhile the bean productivity, seed number per pod and dry seed production (g).

Data Analysis

The variance analysis was used to the data management and the Duncan's Multiple Range Test at 95% significant level was applied. To judge the relationships between treatments observed was determined by regression analysis.

RESULTS

Physical Quality of Cocoa Pod

Variance analysis of pod position on canopy and plant ages of all variable observed were significantly difference. The mean values of pod quality based on their position on canopy and different plant ages was shown in Table 1.

Table 1. Physical quality of cocoa pod based on their different position in canopy and plant ages

Plant Age (Years)	Pod Position		
	Main Stem	Primary Branch	Secondary Branch
----Pod Length (cm)----			
8	20.62 a	19.83 b	18.99 c
10	16.86 d	16.22 e	15.28 f
12	14.52 g	13.97 h	13.23 ij
14	13.50 i	12.78 j	11.87 k
----Pod Diameter (cm)----			
8	33.30 a	29.44 b	27.86 c
10	29.46 b	27.08 c	25.92 d
12	27.01 c	25.67 d	25.35 d
14	25.93 d	25.64 d	25.31 d
----Pod Weight (g)----			
8	487.72 a	438.72 abc	380.39 bcd



10	495.50 a	421.17 ad	360.78 bcd
12	456.17 ab	405.33 ad	344.67 cd
14	422.78 ad	365.11 bcd	326.83 d

Notes: Mean values followed by the same letters in the same column based on the variable observed were not significantly difference based on Duncan's Multiple Range Test at 95%.

Cocoa Pod Length. Table 1 showed that the cocoa pod length was obtained on the main stem with 20.62 cm length and significantly different with other treatments. Contrasted to the lower value of cocoa pod length i.e.

11.87 cm was observed in the 14 years old that lied on the secondary branch and are differences with the other treatments.

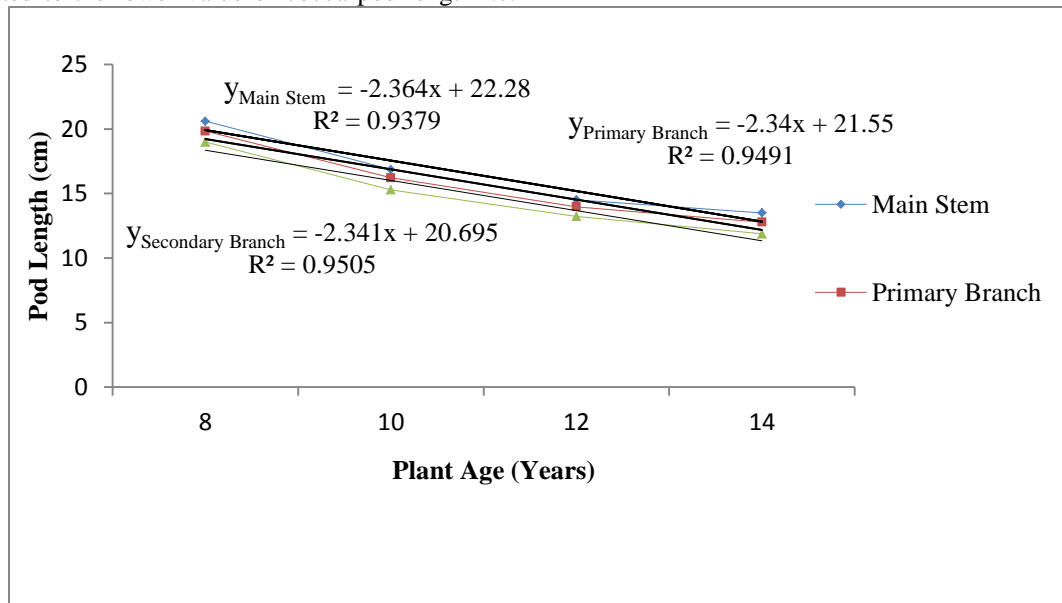


Figure 1. The relationships between different cocoa pod length position on canopy and the plant ages

The highest value of cocoa pod length was obtained in the main stem, primary and secondary branches, respectively. The eight years old of the plant age resulted the more lengthy bean pod than the another treatments i.e. the 10, 12, and 14 years old. This has been clearly that the older the cocoa plant ages, the lower the value of its pod length (Figure 1).

Cocoa pod diameter. The highest value (33.30 cm) of pod diameter was obtained in the eight years old of the plant ages and in the main stem of pod

position (Table 1) with significantly different with another treatments. Whereas the lower value of cocoa pod diameter (25.31 cm) was obtained in the 14 years old of the plant and significantly different with another treatments, i.e. the 8, 10, and 12 years old of the plant ages. This condition was not significantly difference with the eight and 12 years old of the plant ages, and the primary branch of cocoa pod position, also the eight years old of the plant ages and the cocoa pod position at the secondary branch position.

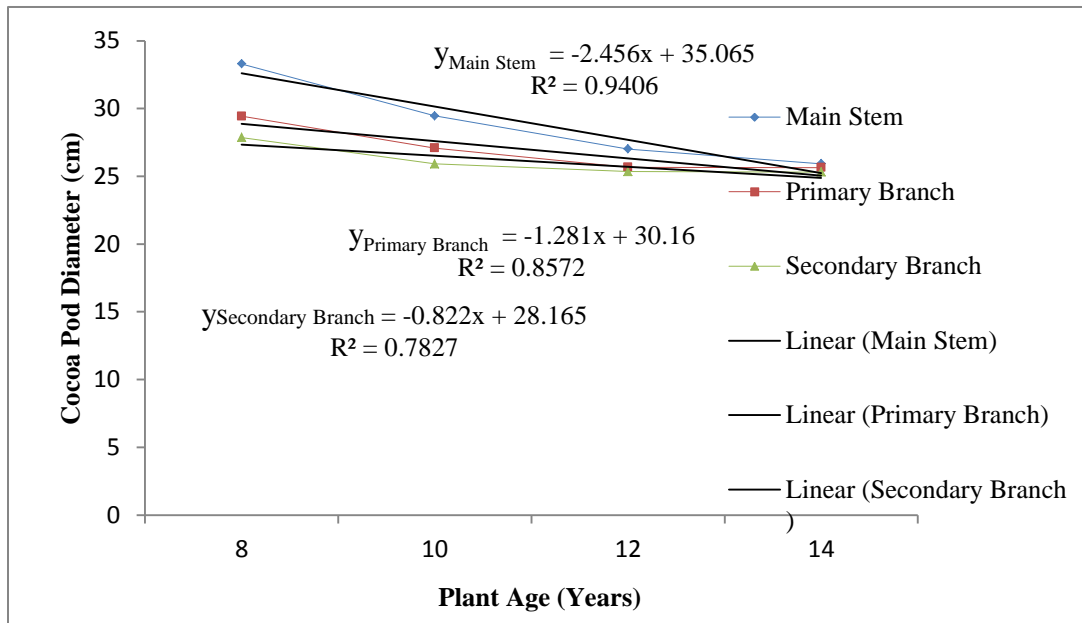


Figure 2. The relationships between different cocoa pod diameter position on canopy and the plant ages

Cocoa pod weight. Table 1 have shown that the cocoa pod weight was higher (487.72 g) on the main stem of cocoa pod position at eight years old of the plant ages, and significantly different with the cocoa pod harvested at primary branch of 14 years old of the plant ages, also significantly different with cocoa pod position on secondary branch at 8, 10, 12, and 14

years old of the plant ages. Contrastly, the lower cocoa pod weight (326.83 g) was achieved in secondary branch position at 14 years old of the plant, and significantly difference with another treatments, except the cocoa pod were obtained from the main stem at 8, 10, 12 years old, also the cocoa pod obtained from the main stem at eight years old.

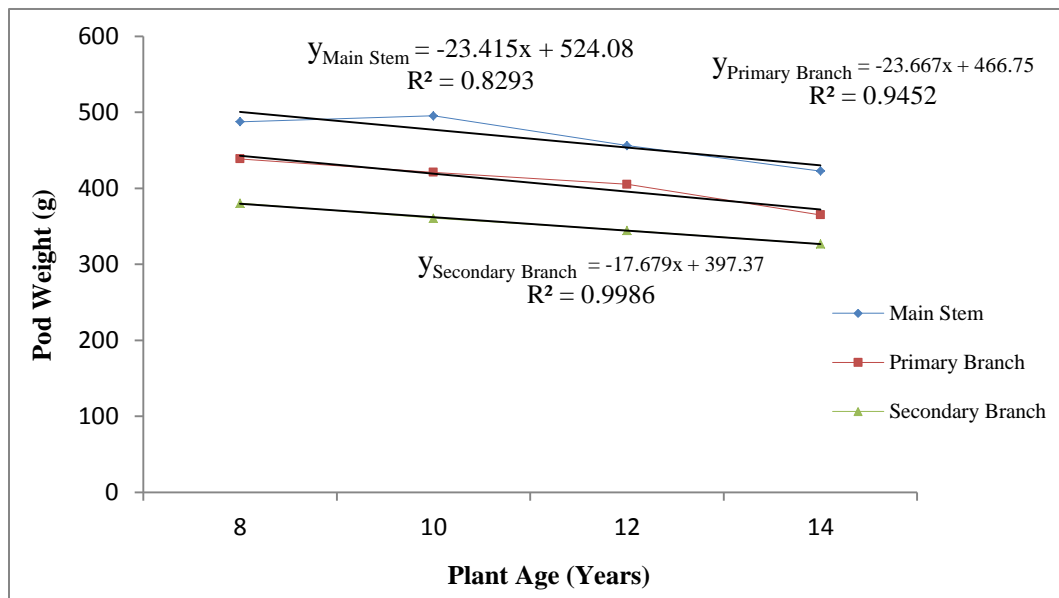


Figure 3. The relationships between different cocoa pod weight position on canopy and the plant ages

Cocoa Bean Productivity

Variance analysis of pod position on canopy and plant ages of all variable observed on cocoa bean

productivity were significantly difference. Mean values of cocoa bean productivity basen on its canopy position at different plant ages was indicated in Table 2.


Table 2. Cocoa bean productivity based on its position on canopy and different plant ages

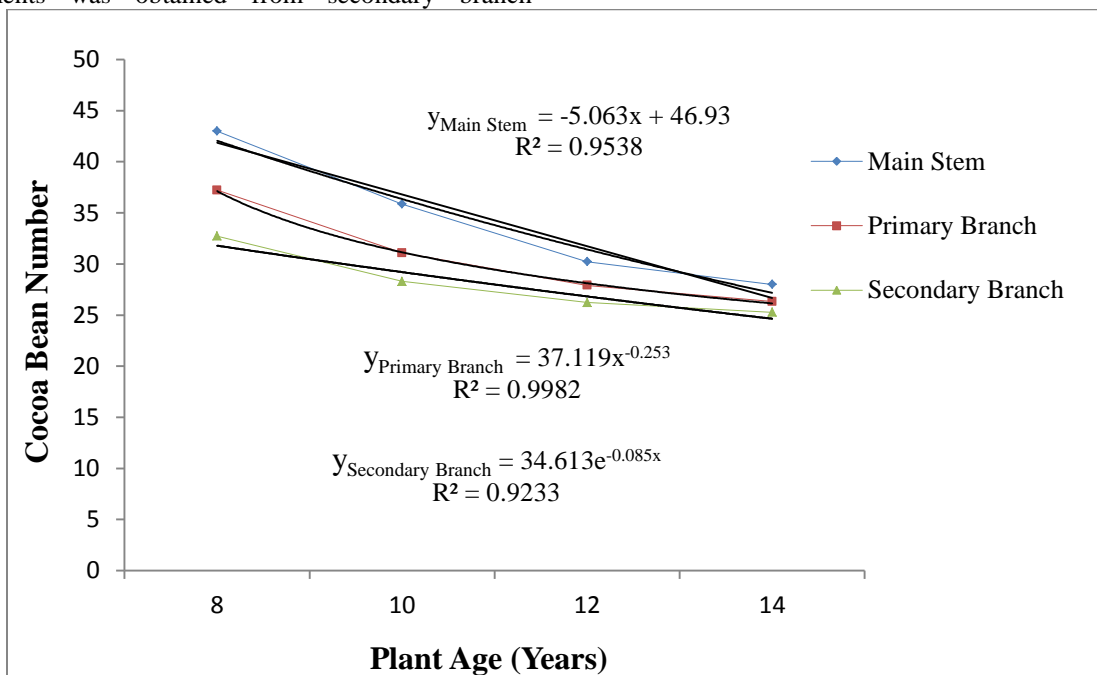
Plant Age (Years)	Pod Position		
	Main Stem	Primary Branch	Secondary Branch
	-----Seed Number per Pod-----		
8	43.00 a	37.22 b	32.72 d
10	35.86 c	31.08 e	28.19 f
12	30.23 e	27.90 f	26.23 g
14	28.00 f	26.33 g	25.28 g
	-----Seed Weight per Pod (g)-----		
8	91.03 a	89.07 b	86.34 d
10	88.11 c	86.59 d	85.50 e
12	85.55 e	85.04 f	83.83 g
14	82.91 h	81.43 i	79.60 j

Notes: Mean values followed by the same letters in the same column based on the variable observed were not significantly difference based on Duncan's Multiple Range Test at 95%

Seed Number per Pod. Table 2 indicated that the number of cocoa seeds from main stem was the higher values than that of from both primary and secondary branches. The seeds number per pod was different from different position, either in main stem, primary branch, or in secondary branch. The higher values of seeds number (43.0 seeds) was indicated in main stem at eight years old of the plant, and significantly different with another treatments. In contrast, the lower number and significantly different of seeds number of different treatments was obtained from secondary branch

position in the canopy, except from the primary branch position at 14 years old, and 12 years old of the plant ages at secondary branch position.

This indicated that the extending ages of the plant, the lower values of the seeds number obtained that decreasing the number of seeds number per cocoa pod. The seeds number per pod at eight years old of the plant will vary according to their total number, but this variation will decreasing significantly when the plant ages was increasing so that the 14 years old of the plant ages will yielding the decreasing seeds number per pod (Figure 4).


Figure 4. The relationships between different bean cocoa number position on canopy and the plant ages



Cocoa Seed Weight per Pod at 10% Water Content. In Table 5, showed that the higher values of seeds weight (91.03 g) was obtained in the eight years old of the plant ages and significantly different with

another treatments. In contrast, the lower weight of the seeds (79.60 g) was indicated in secondary branch position in the canopy at 14 years old of the plant age.

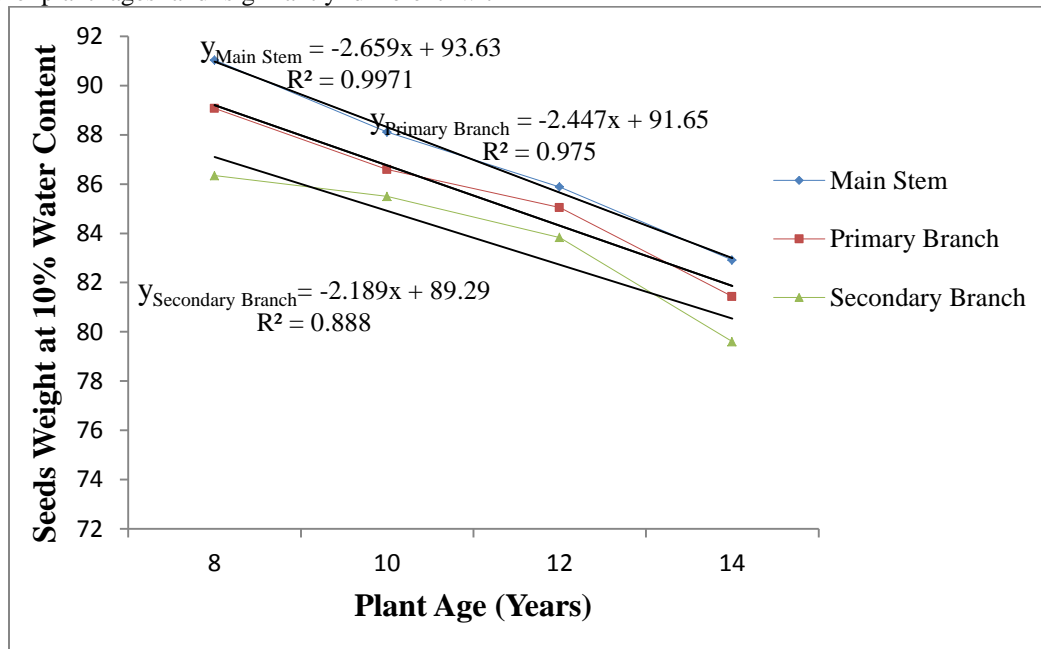


Figure 5. The relationships between different cocoa seeds weight per pod position on canopy and the plant ages

DISCUSSION

Cocoa pod in one side was as a result of so called sink, a source of assimilate which strongly related to the plant characteristics, growth environment, and plantation management. But, in another one side, the seeds were the resultant of the cocoa pod as the main seed skeleton. Growth and development of the seed was depend mainly on pod condition either in physical or physiological condition.

Based on observed variable (Table 1) have shown that the effect of pod position in canopy and plant ages on the length, diameter, and weight of the pods, seeds number, and seeds production per pod were significantly different. The positive effect of pod position in main stem, primary and secondary branches were due to the variably photosynthate distribution between main stem, primary and secondary branches. The difference photosynthate distribution in the whole plant was as a consequence of the departure range of source production and their useness, floem cross sectional obstacle, and the existency of floem bottleneck [8].

Photosynthate transportation supply was departly loading more on the main stem compared to the primary and secondary branches. It is due to the photosynthate flow from source to pod on main stem resulted the pod development was more intensively in it

compared to the primary and secondary branches. Photosynthate distribution to another part of the plant was mainly determined by the pod position on the whole plant or canopy, and the competitiveness level between pods, and genetical and environmental factors [8]. Besides, the large allocation of photosynthate to cocoa pod that lies on to the main stem was possibly because this part have more floem tissue compared to the primary and secondary branches. Also, pod (sink) position in canopy have the higher strength compared to the primary and secondary branches. This was in similar with Gardner and Mitchel [9], that photosynthate partition in whole plant was affected by fitohormone, sink activity, and the amount of sink strength. The growth and development of pod cocoa bean was different with pod position in the main stem, primary and secondary branches. This suspected that the photosynthate was translocated from the source or plant leaf. Relevant result of this research showed in Jurniati [10], observation in which the weight of cocoa pod tissue in main stem was 407.311 g per pod and more higher than in the primary and secondary branches in average i.e. 383.873 g per pod. The placenta weight of cocoa pod in main stem was 15.662 g per pod and more higher than the cocoa pod that lies on the primary and secondary branches i.e. 13.902 g per pod. Cocoa bean weight including their pulp in



main stem was 93.893 g in average and lower than in the branch in average i.e. 87.377 per pod. But, pod weight without pulp in main stem was 66.377 g per pod in average and lower than the branches i.e. 62.187 g per pod in average. The cocoa bean number per pod in main stem was 42.0 seeds which higher than in the primary and secondary branches i.e., 40.5 seeds per pod, both in averages. Water content of cocoa bean in main stem was 6.42% in average that higher than that of the primary and secondary branches around 6.39%.

Hasbawati [11], reported that the measurement of pod and cocoa bean features was based on the pod position in the canopy. In general, the measurement of pod in main stem was weightest and heaviest compared to the primary and secondary branches. This has been due to the cocoa pod in main stem have capability to get some growth factor including the light and CO₂ with higher values compared to the primary and secondary branches. The young cocoa pod have capability to do photosynthetic activity as a result of the existency of chlorophyll compartment so that the light and CO₂ were needed.

Research results showed that the plant ages was significantly different on pod length, pod diameter, pod weight, bean number, and dry bean cocoa production. The eight years old of the cocoa plant have higher pod length, pod diameter, pod weight and dry bean production and higher than the other, decreasingly those variable when the plant increasingly the plant ages. This was in similar with the Rubio and Siswanto [12], observations that maximum production was achieved after six to seven years, and the production was declined after this years. The 10 years age of plant or more tend to be decreasing their canopy performances and unoptimal production achievement. In the field experiment indicating that the old plant tend to be vegetatively growth decreasing with the number and wide of leaf formation were decreased.

In general, the eight years old of the plant was the higher production and the good physical quality of cocoa pod. It was assessed that the plant ability in absorbing the nutrition in the soil was more maximal which affected the production, and pod and bean quality. Also, the eight years age of the plant resulting their higher production and physical quality. This was similar with Alam *et al.* [13], that the age of plant was affected the quality of cacao pod and its dry seed. This was also similar to Sarawa *et al.* [8], that the eight years old of the plant indicating the pod from the primary branch which higher content of protein, fat, and dry seed were higher.

Research results indicated that except plant ages and pod position in canopy were also affecting cocoa production and its physical quality. Cocoa pod, in general, was situated in main stem so that the physical

quality become more good compared to the pod which lies on primary and secondary branches. It is because the pod position was in the main stem that openly from direct sunrise exposure and also most nearly from surface of soil so that the temperature was lower than that of another part of the plant. The temperature was the factor that influences on vegetative growth, flowering of the plant, and pod development [14].

Based on regression analysis on Figure 1, 2, 3, and 4 have shown that the correlation (R) values between pod position in canopy and plant ages were significantly different with value of 92.88%. This value means that the relationship between the plant ages and pod position in canopy were strongly related to pod length, pod diameter, pod weight, bean numbers, and bean production.

CONCLUSION

Based on this experimental observation, the authors have concluded that: Pod position on canopy and plant ages on productivity and physical quality of cocoa bean production have interaction effects. The eight years old of the plant age tend to be resulted the significant pod production and physical properties. The pod position on canopy in main stem resulting the best seeds physical characters and productivity compared to the primary and secondary branches.

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A STUDY ON FINANCIAL PERFORMANCE OF TATA STEEL LIMITED

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ABSTRACT

Financial performance analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing the relationship between the items of balance sheet and profit and loss account. The study used 5 years performance analysis of TATA steel Limited's secondary data and main objective is to find out the financial changes of the company by using the financial statements and such financial tools like return on investment ratio, expenses ratio and other performance and turnover ratios. The suggestions reveal that the company should probably consider the use of the fund to invest other opportunities to get a profit. Therefore, the company's performance is satisfactory and they tend to be more attractive to investors.

KEYWORDS: *Financial statement, Performance ratios, operating efficiency*

INTRODUCTION

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Financial performance analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing the relationship between the items of balance sheet and profit and loss account. It also helps in short term and long term forecasting and growth can be identified with the help of financial performance analysis. The achievement of the company's financial performance for a certain period covering the collection and allocation of finance measured by capital adequacy, liquidity, solvency, efficiency, leverage and profitability.

STATEMENT OF THE PROBLEM

The efficiency of the business is measured by the amount of profit earned. The greater the profit, the more efficient is the business. The profit of the business is measured by studying the profitability of investment in it. Profitability is referred to as earning power or

operating performance of the investment concerned. Profitability is a relative term and it's relation with the other factor by which the profit is affected. The financial statement analysis gives more important to financial ratios for assessing the firm's financial performance and conditions. The analyst is always found which ratios are to use to determine the profitability of the firm. An attempt is made to find out the inter-relationship between and among the financial ratios of last five year's of a company.

OBJECTIVES OF THE STUDY

- To measure the profitability and liquidity position of the Tata Steel Limited.
- To measure the financial position of the Tata Steel Limited.
- To analyze the financial changes over a period of five years using the financial statement of the company and by using financial tools.



RESEARCH METHODOLOGY

Source of Data	Secondary Data
Period of Study	2015-2016 to 2019-2020
Framework of Analysis	Financial Statement
Tools and Techniques	Ratio Analysis

STATISTICAL TOOLS

The following statistical tools were applied to analyze the statistical data collected for calculation of Financial Performance analysis:

- Ratio Analysis
 - Current Ratio
 - Quick Ratio
 - Gross Profit Ratio
 - Operating Profit Ratio

REVIEW OF LITERATURE

K.R. SIVABAGYAM & HARSHITA.B (2019), analyzed the study on “financial performance analysis of selected Iron and steel companies in India” with the object to find out the variance among the mean values of ratios with the help of its profitability, short term solvency and efficiency ratios to analyze the financial performance of the steel companies namely VISA, TATA,JSW,SAIL, ESSAR, JINDAL, UTTAM GALVA, SUNFLAG, FACOR and NARAYANI Steels during the financial year 2014-15 to 2018-19, the study found that TATA steel performed better other than the selected steel companies and suggested JINDAL steel company has to improve its sales with every rupee invested in fixed assets and

VISA and SAIL limited has to take some strategy to enhance their short term solvency.

ARITRA RANJAN DAS (2018), analyzed the study on “Financial performance of steel industry in India”, through ANNOVA test of profitability, liquidity, solvency and efficiency ratios, they selected four companies wisely TATA steel ltd, JINDAL steel and power ltd, JSW steel ltd and Steel Authority of India ltd, it has found that the financial performance of selected companies during the year 2012-13 to 2017-18 and found that the total consumption of finished steel increased by 5.2% year-on-year at 64.87 MT during April-December, 2017.

DR. DEEPA CHAVAN (2017), have made a study on “Comparative analysis of financial ratios with special reference to TATA Steel” with the view to know the profitability performance of the company during the year 2014 &2015 by using the liquidity and profitability ratios, they found that the company’s operating ratio has fallen from 23.95% in 2014 to 18.87% in 2015 and shows positive sign on ROI, that keeps their stakeholders feeling secure and confident. During the year, it exports 67%of their revenue and work on the untapped domestic market by being more competitive.

TABLES

Year	Current Ratio (%)	Quick Ratio (%)	Gross Profit Ratio (%)	Operating Profit Ratio (%)
2015-16	0.95	0.54	99.38	77.85
2016-17	1.01	0.52	103.90	83.48
2017-18	1.22	0.71	99.68	81.85
2018-19	0.97	0.45	98.11	81.55
2019-20	0.95	0.45	97.96	78.68

FINDINGS

- The current ratio has the highest growth rate in the year 2017-18 as 1.22 and the lowest growth rate in the year 2015-16 and 2019-2020 as 0.95.
- The Quick Ratio has the highest growth rate of 0.71in the year 2017-18 and 0.45 of lowest growth rate in the year 2018-19 & 2019-2020.
- The Gross Profit Ratio has the highest growth rate of 103.90 in the year 2016-17 and lowest growth rate of 97.96 in the year 2019-2020.
- The Operating profit ratio has the highest growth of 83.48 in the year 2016-17 and the lowest growth rate of 77.85 in the year 2019-20.



SUGGESTIONS

- The liquidity position of the company suggests that it doesn't have enough liquid assets to cover its short term liabilities.
- A high ratio of debt- equity indicates a risky business where there are more creditors of the firm than there are investors.
- Gross profit margin ratio reflects a higher efficiency of core operations, i.e., it cover the operating expenses, fixed costs, dividends, depreciation and also providing net earnings to the business.
- The company should probably consider the use of the fund to invest other opportunities to get a profit.

CONCLUSION

The analysis of the company was undertaken with the help of ratios, which are important tools of financial analysis. The firm's solvency ratio is best to keep as low as possible and with higher profit margin, it is able to sell at a higher price or lower expenses. The study gives a clear idea of the financial performance of the company over the last five years. Therefore, the company's performance is satisfactory and they tend to be more attractive to investors.

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A STUDY ON FINANCIAL PERFORMANCE ANALYSIS OF HCL TECHNOLOGIES LTD

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ABSTRACT

The Term Financial Analysis refers to process of determining the firm’s strength and weakness. The study is done by establishing the relationship between the items of the company profit and loss account and balance sheet. The study is done by analyzing Six years financial statement of HCL technologies. The data is Secondary data and main objective of the study is to find the financial analysis of the company and also to help in finding the growth of the company. There are various tools used in the study is current ratio, Liquid ratio, net profit ratio, gross profit ratio, return on asset ratio, proprietary ratio, Total asset turn over ratio, Inventory turnover ratio.

KEYWORD: *Analysis, Growth, Income*

1. INTRODUCTION

Information technology (IT) industry in India has played a key role in putting India on the global map. The industry has helped India transform from a rural and agriculture-based economy to a Knowledge based economy. Information Technology has made possible information access at gigabit speeds. Finance may be defined as the art and science of managing money. It includes financial services and financial instruments. The concepts of finance include capital, funds, money and amount, but each word is having unique meaning. Studying and understanding the concept of finance become an important part of the business concern.

2. STATEMENT OF THE PROBLEM

A financial analysis reveals strength and weakness of the company by properly establishing the relationship between the items of balance sheet and profit and loss account. The efficient performance of the firm depends on the well planning

of the capital structure, investment and distribution. Any firm that fails to apply the sound principles of cost control and fails to adopt the scientific tool of investment and distribution in managing funds will not be lasting in the long run. Since finance is the life-line and essential driving force of an enterprise, the importance of the timely appraisal of the performance of the firm cannot be ignored. This study is conducted to evaluate the financial performance of HCL technologies and to know the company’s position and performance.

3. OBJECTIVES OF STUDY

- To study the financial position of HCL Technologies Ltd over a period of six years.
- To analyze the profile of HCL Technologies Ltd.
- To analyze the profitability position of the company by evaluating the financial statement.

4. RESEARCH METHODOLOGY

Period of study	2014-2020
Source of data	Secondary data
Tools and techniques	Ratio analysis
Framework of analysis	Financial statement



5. STATISTICAL TOOL

- Liquidity ratio
- Solvency ratio
- Profitability ratio
- Activity ratio

6. REVIEW OF LITERATURE

Anil Kumar Goyal (2020): 'A Study on financial performance analysis of Bharat petroleum corporation India' The author uses profitability, liquidity and solvency ratio for analysis of the company's financial performance. The study covers the period of study from 2004-2005 to 2011-2012. and concluded that the company was unable to even touch the ideal quick ratio during the period of study which may create problem to the short-term liquidity.

Haitham Nobanee (2020): 'A Study on financial performance on dell technologies. The author had made the study to analysis company financial position with data collected from yahoo finance for the period of 2015-2016 to 2018-2019. The Analysis consists of four different ratios and made up a suggestion to increase company's financial stability and to reduce the impact of stating the occurrence of unfavorable incidences to minimize the negative impact on investors.

Anil Kumar Goyal (2020): 'A Study on financial analysis of Indian oil corporation' Financial analysis is the art and science of examine and drawing interference from the financial statement. The study is based on secondary date collected from company annual report for the period of five years from 2005-2006 to 2011-2012. The analysis was been made on gross profit ratio, net profit ratio, EPS, debt-equity ratio to and concluded the profitability position of the company cannot be said satisfactory because the gross profit ratio varies from the average.

7. FINDINGS

1. Current ratio of the company was highest 4.25 in the year (2015-2016) and lowest 1.69 in the year (2019-2020).
2. Liquid ratio of the company was highest 3.78 in the year (2015-2016) and lowest 1.69 in the year (2019-2020).
3. Gross profit ratio of the company was highest 46.63% in the year (2014-2015) and lowest 40.27% in the year (2019-2020).
4. Net profit of the company was highest 36.99% in the year (2014-2015) and lowest 27.50% in the year (2019-2020).
5. Return on asset of the company was highest 25.47% in the year (2014-2015) and lowest 16.75% in the year (2019-2020)
6. Proprietary ratio of the company was highest 0.84 in the year (2017-2018) and lowest 0.70 in the year (2019-2020).

7. Inventory turnover ratio of the company was highest 2329 in the years of (2019-2020) and lowest 104.5 in the year (2015-2016).
8. Asset turnover ratio of the company was highest 69.44 in the year (2018-2019) and lowest 50.52 in the year (2019-2020).

8. SUGGESTIONS

The performance of HCL Technologies during the study was found some good and weakness.

- The firm have low current ratio so it should increase its current ratio where it meet its short-term obligation smoothly.
- To increase its liquidity, company should keep some more cash in its hand instead of giving more advances. This will improve the liquidity position
- The company need to focus on decreasing the liabilities and long -term debt as to avoid the continuous losses.
- They should improve the efficiency at converting sales into actual profit
- The net profit of the company was decreased last year when compare to other years so they need to focus expenditure to increase the profit.
- They should focus on the shareholders fund as to increase the company proprietary ratio and to increase the company goodwill.

9. CONCLUSION

The analysis of the company was undertaken with the help of ratio, which are important tools of financial analysis. The company's performance is satisfactory, and the study gives clear idea of financial performance of the company over last six years. As the maintain good sales but was not effective on profit and to avoid debts so that they can increase company profit and also to Look forward on shareholders fund which will increase the company goodwill. Hence if a given suggestions are implemented, the company can increase its profitability and improve their overall performance

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STRESS MANAGEMENT AMONG EMPLOYEES IN BANNARI AMMAN SUGARS LTD AT SATHYAMANGALAM

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ABSTRACT

The present world is fast changing and there are lots of pressures and demands at work. These pressures at work lead to physical disorders. Stress refers to individual's reaction to a disturbing factor in the environment. It is an adaptive response to certain external factor or situation or what can be called environmental stimuli as reflected in an opportunity, constraint, or demand the outcome of which is uncertain but important. The main purpose of stress management is to manage and reduce the stress through suitable coping up techniques. This study would management as well as the employees to identify the factors causing stress and coping strategies to be followed.

Stress management refers to the usage of various techniques and psychotherapies aimed at controlling Stress management refers to the usage of various techniques to control a person's stress level, especially chronic stress, to enhance smooth functioning of the person. Stress causes numerous physical and mental symptoms based on each individual's situation in life. These include physical health decline, depression etc., Stress management is one of the keys to a happy and successful life in modern society.

KEY WORD : Studying stress among employees.

INTRODUCTION

Bannari Amman Group is an industrial conglomerate based in Tamil Nadu in India with wide spectrum of manufacturing, trading and service activities. Manufacturing and trading include sugar, alcohol, liquor, granite etc... The service sector has wind power energy, education etc.

The present world is fast changing and there are lots of pressures and demands at work. These pressures at work lead to physical disorders. Stress refers to individual's reaction to a disturbing factor in the environment. It is an adaptive response to certain external factor or situation or what can be called environmental stimuli as reflected in an opportunity, constraint, or demand the outcome of which is uncertain but important. The main purpose of stress management is to manage and reduce the stress through suitable coping up techniques. This study would management as well as the employees to identify the factors causing stress and coping strategies to be followed.

Stress management refers to the wide spectrum of technique sand psychotherapies aimed at controlling Stress management refers to the usage of various techniques to control a person's stress level, especially chronic stress, to enhance smooth

functioning of the person. Stress causes numerous physical and mental symptoms based on each individual's situation in life. These include physical health decline, depression etc., Stress management is one of the keys to a happy and successful life in modern society.

Stress has become a part of work life. Corporate have started to emphasize on a person's levels of stress, especially chronic stress, usually for the purpose of improving everyday functioning.

In this context, the term 'stress' refers only to a stress with significant negative consequences, or distress in the terminology advocated by Hans Selye, rather than what he calls eu-stress, a stress whose consequences are helpful or otherwise positive. Stress produces numerous symptoms which vary according to persons, situations and severity. These can include physical health decline as well as depression. The process of stress management is named as one of the keys to a happy and successful life in modern society.

Although life provides numerous demands that can prove difficult to handle, stress management provides a number of ways to manage anxiety and maintain overall well-being. In today's world, the degree of stress increased owing to



urbanization, globalization that results into cut-throat competition. Stress is inescapable part of modern life; work place is becoming a volatile stress factory for most employees and it is rightly called as the Age of anxiety. Stress has becoming significantly with the result of dynamic social factors and changing needs of life styles.

REVIEW OF LITERATURE

K. Keerthi,A.Arulraj (2011) - this study on Stress Management with reference to TATA CONSULTANCY SERVICES a study has been Conducted on the levels, causes and consequences of stress in relation to age, experience, perception, and Environment. Both internal and external factors causing stress is studied upon and their relationship with work are Established with the use of statistical tool such as Weighted Average Method besides Graphical and Percentage Analysis. It is found from the study that the employees are prone to low stress and this serve as eye opener for Management to make timely discussion to prevent its transformation to higher levels of stress.Further this study Was keen in gathering information expected by the employees to cope with stress, as this project will serve as a Source of information to management in taking decision related to stress.

Geeta Kumari and K.M. Pandey,(2011) - In this work the analysis has been done on stress Management of Avtar steel industries, Chennai.Asample size Of 100 is taken for the purpose of analysis made from primary And secondary data. Out of the total sample most of the Respondents are male and many are between 50 and above. Most of the respondents are under graduate and have Professional qualification. Most of the respondents have 10-15 Years of long association with the organization. Almost all the Respondents are satisfied with the physical and psychological Working condition of the organization, and only fewer Respondents are dissatisfied with the psychological working ,Condition of the organization. The opinion about the training Programs conducted by the

organization is almost better, According to majority of the respondents.

R Gomathi,R Deepika (2013) - Stress has become a major concern of the modern times as it can cause harm to employee’s health and performance. Work Related stress costs organization billions of dollars each year through sickness, turnover and absenteeism. So it becomes necessary for Every organization to know the factor causing stress among the employees as well as how they cope up with stress to make the employee More participative and productive. This research study was conducted to find out the factor causing stress among employees and to know How they cope up with stress. The Research design used was a descriptive research. The primary data has been collected through a Questionnaire method. The sample design used in the study was Convenience Sampling Technique with a sample size of 60. The Collected data has been analysed through various tools like Percentage Analysis, Chi- Square Test & ANOVAs, and Factor Analysis.

STATEMENT OF THE PROBLEM

When a person or a company’ s managers know the reasons of stress, they are no more blind and no more fight with only possible stress reasons, they see the stress source, and they are able to choose the best instruments or way to fight with it purposefully. If for instance the reason of stress situation is too long working day, additional small coffee pause can be possibly organized.

OBJECTIVES OF THE STUD

- To analyze the factors influencing stress among the employees.
- To study the relationship between job profile and level of stress among the employees.
- To study on job stress among employees of BANNARI AMMAN SUGARS Ltd
- To examine the relaxation techniques practiced in the organization.

RESEARCH METHODOLOGY

Area of study	Bannari Amman Sugars ltd, Sathyamangalam
Sample size	120 respondent
Sources of data	Primary data and secondary data
Sample technique	Convenience sampling
Proposed tools	Sampling percentage Analysis

LIMITATIONS OF STUDY

- Data is collected from the employees in Bannari Amman sugars Ltd.
- Due to personal inconvenience the

employees working in night shifts could not be met for data collection.

- Accuracy is also another problem for the sample may not reveal the fact.



FINDINGS

Simple Percentage Analysis

- Majority 77% of the respondents are male
- Majority 45% of the respondent's income level is below Rs. 10,000
- Majority 50% of the respondents are come to under the age group of below 30.
- 33% of the respondents belong to HSS educational qualification.
- Majority 64% of the respondents are not committed any mistake while working
- Majority 71% of the respondents feel extreme pressure
- 36% of the respondents perceive that their work is growth oriented
- Majority 58% of the respondents are working at extra time
- Majority 58% of the respondents are feel relaxed about their work
- 36% of the respondents are feels satisfied in their work environment
- 37% of the respondents are satisfied in the working hours
- Majority of the respondents ranked as first for self-development as a factor to reduce their stress.
- Majority 44% of the respondents feel good in recognition from superiors
- Majority 48% of the respondents express that agree the freedom for suggestion
- Majority 52% of the respondents state that basis for promotion is performance
- Majority 55% of the respondents agree that the present job helps for knowledge
- 25% of the respondents state that the way of expressing their stress is discussing with colleagues
- Majority 45% of the respondents state that they never pressured to work for long hours
- Majority 55% of the respondents state that they never have full freedom to express their suggestions for improvement
- Majority 44% of the respondents state that they never have support of colleagues when depression.
- Majority 74% of the respondents are satisfied with current employees.
- Majority 36% of the respondents felt poor towards the feeling about grievance handling system in your organization.
- Majority 51 % of the respondents are strongly agreed about they feel tired or depressed because hectic work schedule.
- 31% of the respondents said meditation that they are managing stress from work.
- Majority 51% of the respondents said moody meditation is the symptoms of stress.

- Majority 48% of the respondents said poor salary are causes to get stress.

SUGGESTIONS

- Before formulating policies, it is advisable to an organization, to have discussion with its employees otherwise it will produce negative results.
- People should not be forced to finish the target, should be given extra time to the slow-performing workers.
- Most of the respondents felt that there does not exit mutual understanding within the employees groups. In this regard management shall take necessary steps for building a team sprit among their employees groups.
- The organization may arrange for cultural and festival celebration for the employees which relives the employees stress and provide a free hand working environment within the industrial region.
- If the management creating positive images and counseling, it reduce the stress and also increase confidence in working environment.
- Set realistic academic and personal priorities. Periodically don't overload the employees with unimportant tasks.
- Salary has to be increased and the safety measure should be implemented on time required.
- Temporary employees should be assigned in the place of the employees who are absent.
- Medical check up should be given frequently.

CONCLUSION

Stress is an unavoidable feel which cannot be eliminated from a living beings day to day life, but the level of stress gets varied from one individual to other based on the environment. Stressors in any form level are capable of creating an ill effect to any living beings. Hence any species in this mother earth for cannot be excluded from this nature's theory. By managing both external and internally posed stress, over the employees using good psychological some techniques, the intended results can be elicited. In jobs where concentration is a rare commodity, there are various solutions to creating the periods of flow that sustain good performance. Solutions include working from home, or setting aside parts of the day as quiet periods. Another solution might be to delegate the activities that require the greatest levels of concentration, allowing the manager to concentrate on problems as they arise, serving to create a flow of its own.



In the company, employees are satisfied with the working hours, workload, working environment and grievance handling mechanism etc..Employees are working relaxed and stress level is not high. Most of the employees are using meditation to overcome from their stress.

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FROM THE HISTORY OF UZBEK-KOREAN CULTURAL RELATIONS

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ABSTRACT

This article provides a detailed analysis of the history of Uzbek-Korean cultural relations in the Commonwealth and its further development with the help of Internet data and sources. Research also gives latest information about the head of state also met with the Speaker of the National Assembly and the Prime Minister of the Republic of Korea and took part in the Uzbek-South Korean business forum with the participation of leaders of leading economic and financial structures of the two countries.

KEY WORDS: *Cooperation, Uzbekistan, Korea, contracts and agreements, strategic partnership, Korean cultural centers, innovation.*

INTRODUCTION

It should be noted that the peoples of Uzbekistan and the Republic of Korea are bound by centuries-old friendship and ties that continue to this day. This goes back a long way. It should be noted that on the walls of the ancient city of Afrosiab, located in the territory of modern Samarkand, there are paintings depicting the visit of ambassadors of the Korean Goguryeo dynasty in the VII century.

METHODS

During the years of independence, Uzbekistan has paid special attention to ways to carry out structural changes in the economy to stabilize the macro economy, to build enterprises capable of producing competitive goods and to allocate the necessary investments. At the same time, one of the main directions of the foreign policy of the republic is the establishment of international relations with countries around the world. Following this goal, he said we will continue the large-scale work we have begun to intensify Uzbekistan's foreign policy, an open, pragmatic and well-thought-out foreign policy that meets our national interests. We will further strengthen cooperation, long-term and multifaceted partnership with all countries, far and near. I would like to draw your attention to the following priorities in this regard. The second priority is to further develop political, trade, economic, investment,

transport and communication, cultural and humanitarian ties with South Korea, Turkey, the United Arab Emirates, the European Union and Asia President Mirziyoyev's address to the Oliy Majlis on January 24, 2020 [1].

RESULTS AND DISCUSSIONS

On November 22-25, 2017, President Shavkat Mirziyoyev paid a state visit to the Republic of Korea at the invitation of President Moon Jae-in. The high-level talks focused on a wide range of issues of cooperation, prospects for further development of interstate relations in political, trade, economic, financial, investment, scientific, technical, cultural, humanitarian and other spheres, as well as regional and international issues. The head of our state also met with the Speaker of the National Assembly and the Prime Minister of the Republic of Korea and took part in the Uzbek-South Korean business forum with the participation of leaders of leading economic and financial structures of the two countries. This historic visit has laid a solid foundation for the development of multifaceted ties. In his speech, the President noted that trade and economic relations between Uzbekistan and South Korea have been steadily developing, and modern conditions and opportunities for doing business have been created in our country. He noted that Uzbekistan is interested in further expanding



cooperation with the business community of the Republic of Korea. The Republic of Korea proposed to establish a business center in Uzbekistan. Representatives of the South Korean financial and business circles praised the opportunities created for active business in Uzbekistan and expressed readiness to further develop cooperation. During the visit, more than 20 interstate, intergovernmental and interagency agreements were signed. A comprehensive study of these processes from a historical point of view is of scientific and practical importance today [2].

Although Uzbekistan and Korea are far from each other, they are bound by long-standing ties of friendship and mutually beneficial cooperation. There are similarities in the art, culture, national mentality and hard work of the two peoples. The Koreans who came to Uzbekistan and settled here have become friends with our people, and many of them have become prominent, prestigious and respected members of our society it is especially gratifying that they have made great strides in various fields and set an example for others. Our Korean compatriots are selflessly working in the Legislative Chamber and Senate of the Oliy Majlis, local councils, government agencies, science, culture and art, economic and social spheres. Many of them are well-known coaches who have won the highest awards of our country.

Nowadays, the relations between Uzbekistan and South Korea are developing on the basis of more than 170 agreements and treaties in various fields. Important documents such as the Joint Declaration on Strategic Partnership (2006), the Joint Declaration on Further Development and Deepening of Strategic Partnership (2014) in the political, trade, economic, investment, cultural and humanitarian spheres allowed to take bilateral relations to a qualitatively new level [3]. Economic relations between our countries are developing rapidly, and constructive and mutually beneficial political dialogue is becoming more active. The Republic of Korea is a leading technological partner in the implementation of priority programs for diversification and modernization of industry and infrastructure in our country.

First, the political relations between Uzbekistan and the Republic of Korea continue in the spirit of mutual support in the international arena. It is noteworthy that the approaches of the parties on issues of global and regional significance are similar or close. In particular, the UN General Assembly is successfully implementing initiatives and resolutions, supporting candidates for various UN bodies, and cooperating within regional structures in Asia.

At the invitation of President of the Republic of Uzbekistan Shavkat Mirziyoyev, President of the Republic of Korea Moon Jae-in arrived in our

country on April 18, 2019 with a state visit. This historic visit has laid a solid foundation for the development of multifaceted ties. During the visit, more than 20 intergovernmental, intergovernmental and interdepartmental agreements were signed, as well as 64 documents worth more than \$10 billion [4]. It is no exaggeration to say that the state visit of the President of the Republic of Korea to Uzbekistan has served as an important event in the history of Uzbek-South Korean relations, bringing our countries and peoples closer.

Cooperation between the Republic of Uzbekistan and the Republic of Korea covers almost all areas. The most convenient mode of trade and also the Intergovernmental Commission on Trade and Economic Cooperation plays an important role in the development and implementation of mutually beneficial projects. In 2018, the format of the Deputy Prime Minister's Meeting on Economic Affairs was also introduced.

Uzbekistan and South Korea have been cooperating effectively in the fields of information technology, digital medicine, education and culture. The experience of South Korea is being widely introduced into the preschool education system of our country. The head of our state has developed exchange educational programs on the basis of agreements between Uzbekistan and Korea, opened branches of Korean higher education institutions in Uzbekistan, and created all conditions for the education of young people.

The Uzbek and Korean peoples have similar worldviews and traditions. Our countries have used each other in the most difficult times. Today, more than 180,000 Koreans living in Uzbekistan have become an integral part of our multi-ethnic society. The Association of Korean Cultural Centers has regional branches. The association is actively working to preserve and develop the Korean language, culture, customs and traditions in our country and abroad.

Our universities have established cooperation with more than 45 research institutions in South Korea. Branches of four universities of the Republic of Korea have been opened in our capital. Cooperation in the field of education is also expanding. Higher education institutions of our country have established cooperation with more than 30 research institutions of the Republic of Korea. Korean language and culture centers have been opened in a number of educational institutions. Speaking about cooperation in this area, it should be noted that in 2014, Inha University was opened in Tashkent. This higher education institution is the first foreign educational institution that makes a worthy contribution to the training of highly qualified IT specialists at the level of international standards.



Today, the university has 1,078 students majoring in information technology, engineering and logistics.

Relationships are about innovation and of course progress. The history of Uzbekistan is the strongest basis for this. We believe that Korean-Uzbek relations will rise to the level of innovation in the 21st century and contribute to the common development of the two countries. The trade turnover between the two countries reached a record high of \$2.1 billion. The fact that more than 600 Korean companies operate in Uzbekistan testifies to the continuous expansion of ties and investments.

On January 28, 2021, President of the Republic of Uzbekistan Shavkat Mirziyoyev held a video conference with President of the Republic of Korea Moon Jae-in. It was noted that the multifaceted Uzbek-Korean relations, despite the pandemic, continue to develop steadily. Last year, the two leaders spoke by telephone twice and jointly attended the Second International Forum on Northern Economic Cooperation.

Agreements were reached on the continuation of regular political consultations and intensification of inter-parliamentary exchanges, the preparation of a program of bilateral events dedicated to the 30th anniversary of the establishment of diplomatic relations between our countries. The Presidents noted with satisfaction the growing number of branches of leading South Korean universities and joint training centers in the regions of Uzbekistan. Particular attention was paid to expanding the teaching of Uzbek and Korean languages in the leading higher education institutions of our countries, as well as to providing full support to the Korean diaspora.

CONCLUSION

The Presidents reaffirmed their determination to strengthen the ties of friendship and wide-ranging partnership, raise to a qualitatively new level of mutually beneficial cooperation for the benefit of our fraternal countries and peoples. The development of Uzbekistan is the development of Korea. Korea will definitely share its experience of economic development with Uzbekistan. Relations between the two countries are based on innovation and development. We draw the history of a new partnership on each other's walls. The fraternal relations between the two countries will forever be inherited by our generations.

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VITAMINS-A ROAD OF WELL-BEING: A BRIEF NOTE

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ABSTRACT

Vitamins help your body grow and function as it should. There are 13 essential vitamins – vitamins A, C, D, E, K, and the B vitamins (thiamin, riboflavin, niacin, pantothenic acid, biotin, B6, B12, and folate). Vitamins have different functions to help the body function properly. Some vitamins help you resist infections and keep your veins healthy, while others can help your body get energy from food or help your blood clot properly. Like vitamins, minerals also help your body function. Minerals are elements that our bodies need to function that can be found on Earth and in foods. Some minerals, such as iodine and fluoride, are needed only in very small amounts. Others like calcium, magnesium and potassium are needed in higher amounts.

KEYWORDS: *vitamins, minerals, Dietary nutrients.*

INTRODUCTION

Vitamins and minerals are essential nutrients because they play hundreds of roles in the body. There is a fine line between getting enough of these nutrients (which is healthy) and too much (which can harm you). Eating a healthy diet is the best way to get enough of the vitamins and minerals you need. Dietary nutrients are important for brain structure and function, so they have a potentially profound effect on mental health. A strong body of research points to the harmful effects of unhealthy diets and nutrient deficiencies and the protective value of a healthy diet, along with essential nutritional supplements, on maintaining and promoting mental health.

The research literature suggests that dietary improvements and nutritional interventions may help reduce the risk of certain mental disorders or even prevent the progression. Clinical studies support the use of certain nutrients, which exert a range of beneficial neurochemical activities, as medicinal supplements for the treatment of mental disorders. Clinical research evidence supports the use of several nutritional medications for certain mental disorders: omega-3 fatty acids; N-acetyl cysteine (NAC); S-adenosyl methionine (SAME); zinc; magnesium; vitamin D; and B vitamins (including folic acid). Other natural compounds such as amino acids, plant-based antioxidants and probiotics (obtained from fermented food or laboratory synthesis) are also known to affect brain health. But while some

evidence supports these natural compounds have brain chemical-modulating effects, or play a role in treating certain mental disorders, we cannot currently name particular foods to be effective for treating mental illness. Huh. can do. The best nutritional advice at this point is to cultivate an unprocessed whole food diet with judicious use of nutrients (if necessary) based on the advice of a qualified health professional.

ESSENTIAL NUTRIENTS FOR YOUR BODY

Every day, your body builds skin, muscles, and bones. It pumps out rich red blood that carries nutrients and oxygen to distant outposts, and it sends nerve signals that travel thousands of miles to the brain and body. It also makes chemical messengers that travel from one organ to another, issuing instructions that help sustain your life. But your body needs some raw materials to do all this. These include at least 30 vitamins, minerals and dietary components that your body needs but cannot manufacture on its own. Vitamins and minerals are considered essential nutrients – because acting in music, they play hundreds of roles in the body. They help to shore up bones, heal wounds, and strengthen your immune system. They also convert food into energy, and repair cellular damage.



VITAMINS	SOURCES
A	<ul style="list-style-type: none"> • Organ meats, such as liver and giblets (3 ounces = 1490-9126 micrograms) • Vegetables: <ul style="list-style-type: none"> ○ sweet potatoes (1 medium potato = 1096 micrograms) ○ pumpkin (1/2 cup = 953 micrograms) ○ carrots (1/2 cup = 679 micrograms) ○ spinach (1/2 cup = 573 micrograms) ○ turnip greens (1/2 cup = 441 micrograms) • Cantaloupe (1/4 medium melon = 233 micrograms)
Calcium	<ul style="list-style-type: none"> • Nonfat or low-fat yogurt (8 ounces = 345-452 milligrams). • Nonfat or low-fat cheese (2 ounces = 400 milligrams). • Low-fat milk (1 cup = 290 milligrams) or skim milk (1 cup = 306 milligrams). • Fish and seafood such as sardines (3 ounces = 325 milligrams), pink salmon (3 ounces = 181 milligrams) and ocean perch (3 ounces = 116 milligrams). • Beans such as soybeans (1/2 cup = 130 milligrams) and white beans (1/2 cup = 96 milligrams). • Spinach (1/2 cup = 146 milligrams). • Oatmeal (1 packet = 99-110 milligrams).
Potassium	<ul style="list-style-type: none"> • Potatoes: <ul style="list-style-type: none"> ○ sweet potatoes (1 sweet potato = 694 milligrams) ○ white potatoes (1 potato = 610 milligrams) • Beans: <ul style="list-style-type: none"> ○ white beans (1/2 cup = 595 milligrams) ○ soybeans (1/2 cup = 485 milligrams) ○ lima beans (1/2 cup = 484 milligrams) ○ kidney beans (1/2 cup = 358 milligrams) • Yogurt: <ul style="list-style-type: none"> ○ nonfat yogurt (8 ounces = 579 milligrams) ○ low-fat yogurt (8 ounces = 531 milligrams) • Milk: <ul style="list-style-type: none"> ○ skim milk (1 cup = 382 milligrams) ○ low-fat milk (1 cup = 366 milligrams) • Fruit: <ul style="list-style-type: none"> ○ bananas (1 medium banana = 422 milligrams) ○ peaches (1/4 cup = 398 milligrams) ○ cantaloupe (1/4 medium melon = 368 milligrams) ○ honeydew melon (1/8 medium melon = 365 milligrams) • Fish: <ul style="list-style-type: none"> ○ halibut (3 ounces = 490 milligrams) ○ yellowfin tuna (3 ounces = 484 milligrams) ○ rockfish (3 ounces = 442 milligrams) ○ cod (3 ounces = 439 milligrams) • Tomato-based products: <ul style="list-style-type: none"> ○ paste (1/4 cup = 664 milligrams) ○ puree (1/2 cup = 549 milligrams) ○ juice (3/4 cup = 417 milligrams) ○ sauce (1/2 cup = 405 milligrams)
Magnesium	<ul style="list-style-type: none"> • Vegetables: <ul style="list-style-type: none"> ○ pumpkin (1 ounce = 151 milligrams) ○ spinach (1/2 cup = 81 milligrams) ○ artichokes (1/2 cup = 50 milligrams) • Bran cereal (1 ounce = 103 milligrams) • Beans: <ul style="list-style-type: none"> ○ soybeans (1/2 cup = 74 milligrams) ○ white beans (1/2 cup = 67 milligrams) ○ black beans (1/2 cup = 60 milligrams)



	<ul style="list-style-type: none"> ○ navy beans (1/2 cup = 48 milligrams) ○ great northern beans (1/2 cup = 44 milligrams) ● Tofu (1/2 cup = 47 milligrams) ● Brown rice (1/2 cup = 42 milligrams) ● Nuts: <ul style="list-style-type: none"> ○ brazil nuts (1 ounce = 107 milligrams) ○ almonds (1 ounce = 78 milligrams) ○ cashews (1 ounce = 74 milligrams) ○ peanuts (1 ounce = 50 milligrams)
Vitamin C	<ul style="list-style-type: none"> ● Fruits: <ul style="list-style-type: none"> ○ guava (1/2 cup = 188 milligrams) ○ oranges (1 medium orange = 70 milligrams) ○ kiwi (1 medium kiwi = 70 milligrams) ○ strawberries (1/2 cup = 49 milligrams) ○ cantaloupe (1/4 medium melon = 47 milligrams) ○ papaya (1/4 medium papaya = 47 milligrams) ○ pineapple (1/2 cup = 28 milligrams) ○ mango (1/2 cup = 23 milligrams) ● Vegetables: <ul style="list-style-type: none"> ○ raw red sweet pepper (1/2 cup = 142 milligrams) ○ raw green sweet pepper (1/2 cup = 60 milligrams) ○ Brussels sprouts (1/2 cup = 48 milligrams) ○ broccoli (1/2 cup 38 milligrams) ○ sweet potatoes (1/2 cup = 34 milligrams) ○ cauliflower (1/2 cup = 28 milligrams)
Vitamin D	<ul style="list-style-type: none"> ● fatty fish: <ul style="list-style-type: none"> ○ salmon (3 ounces = 450 IU) ○ swordfish (3 ounces = 550 IU) ○ canned tuna (3 ounces = 150 IU) ● fortified milk (8 ounces = 100 IU) ● fortified orange juice (8 ounces = 100 IU) ● fortified cereal (1 cup = 40 IU) ● fortified yogurt (6 ounces = 80 IU) ● cheese, Swiss (1 ounce = 6 IU)
Vitamin E	<ul style="list-style-type: none"> ● nuts and seeds: <ul style="list-style-type: none"> ○ sunflower seeds (1 ounce = 7.4 milligrams) ○ almonds (1 ounce = 7.3 milligrams) ○ hazelnuts (1 ounce = 4.3 milligrams) ○ pine nuts (1 ounce = 2.6 milligrams) ○ peanuts (1 ounce = 2.2 milligrams) ○ brazil nuts (1 ounce = 1.6 milligrams) ● turnip greens (1/2 cup = 2.9 milligrams) ● peanut butter (2 tablespoons = 2.5 milligrams) ● dpinach (1/2 cup = 1.9 milligrams) ● avocado (1/2 avocado = 2.1 milligrams) ● tomato-based products: <ul style="list-style-type: none"> ○ paste (1/4 cup = 2.8 milligrams) ○ sauce (1/2 cup = 2.5 milligrams) ○ puree (1/2 cup = 2.5 milligrams)

MEASUREMENTS FOR VITAMINS AND MINERALS

Vitamins and minerals are measured in a variety of ways. The most common are:

- ✓ milligram - milligram (a milligram is one-thousandth of a gram)

- ✓ mcg - micrograms (One microgram is one millionth of a gram. 1,000 micrograms is equal to one milligram)

- ✓ IU - International Unit (conversion of milligrams and micrograms to IU depending on the type of vitamin or drug).



MICRONUTRIENTS WITH A LARGE ROLE IN THE BODY

Vitamins and minerals are often called micronutrients because your body needs only small amounts of them. Yet failing to receive those small amounts virtually guarantees disease. Here are some examples of diseases that can result from vitamin deficiencies:

- Scurvy. Old-time sailors learned that living for months without fresh fruits or vegetables—the main source of vitamin C—caused bleeding gums and apathy of scurvy.
- Blindness In some developing countries, people still go blind from vitamin A deficiency.
- Rickets. Vitamin D deficiency can lead to rickets, a condition marked by soft, weak bones, which can lead to skeletal deformities such as bowed legs. To partially combat rickets, America has fortified milk with vitamin D since the 1930s.

CONCLUSION & DISCUSSION

Micronutrients are the vitamins and minerals found in food that nourish your body and help keep you healthy. They are essential for your overall health. Choosing foods rich in vitamins and minerals every day is the best way to get what your body needs to stay healthy. So there are seven key nutrients that can positively affect brain health and the foods in which they appear.

1. Omega-3

Polyunsaturated fats (especially omega-3 fatty acids) have an important role in maintaining proper neuronal structure and function, as well as modulating important aspects of inflammatory pathways in the body. Taking omega-3 supplements appears to be beneficial for relieving symptoms of depression, bipolar depression and post-traumatic stress disorder. And it could potentially help prevent psychosis.

Omega-3 fats can be found in nuts, seeds and oysters, although the highest amounts are present in oily fish such as sardines, salmon (especially king salmon), anchovies and mackerel. Because of the high levels of mercury, larger fish, such as mackerel, should be consumed in moderation.

2. B Vitamins and Folate

Need of B vitamins for a range of cellular and metabolic processes, and they play an important role in the production of a range of brain chemicals. Folate (B9) deficiency has been reported in depressed populations and in people who respond poorly to antidepressants.

Several studies have assessed the antidepressant effect of folic acid (a synthetic form of folate) with antidepressant medication. Some antidepressants show positive results in the response rate or onset of response to these drugs.

Folate is found in abundance in leafy green vegetables, legumes, whole grains, brewer's yeast and nuts. Unprocessed meats, eggs, cheese, dairy, whole grains and nuts, in general, are among the highest in B vitamins. If you are going to take a supplement, it is recommended to take B vitamins together as they have a synergistic effect.

3. Amino Acids

Amino acids are the building blocks for making proteins, which make up brain circuitry and brain chemicals. Some amino acids are precursors to mood-modulating chemicals; For example, tryptophan is needed to make serotonin. Another example is cysteine, a sulfur-based amino acid that can convert to glutathione—the body's most powerful antioxidant.

When given as a supplement, an amino acid form known as N-acetyl cysteine (NAC) is converted to glutathione in the body. We have evidence that it is helpful in bipolar depression, schizophrenia, trichotillomania, and other compulsive and addictive behaviors. Another amino acid-based nutrient known as S-adenosyl methionine (SAME), has antidepressant properties. Amino acids are found in any source of protein, especially meat, seafood, eggs, nuts and legumes.

4. Minerals

Minerals, especially zinc, magnesium and iron, play an important role in neurological function. Zinc is an abundant trace element, involved in many brain chemical reactions. It is also a key element supporting proper immune function. Deficiency has been linked to an increase in depressive symptoms and there is emerging evidence for zinc supplementation to improve depressed mood, primarily with antidepressants.

Magnesium is also involved in many brain chemical reactions and a deficiency has been linked to depressive and anxiety symptoms. Iron is involved in many neurological activities and deficiency is associated with anxiety and depressive symptoms as well as developmental problems. This is due, in part, to its role in the transport of oxygen to the brain.

Zinc is abundant in lean meats, oysters, whole grains, pumpkin seeds and nuts, while magnesium is highest in nuts, legumes, whole grains, leafy greens and soy. Unprocessed meats and organ meats, such as liver, and leafy greens such as cereals, nuts and spinach are high in iron in moderate amounts.

5. Vitamin D

Vitamin D is a fat-soluble compound that is as important for brain development as it is for bone development. Data suggest that low maternal levels of vitamin D are implicated in the risk of schizophrenia, and deficiency is associated with an increase in depressive symptoms. But there is little evidence to support the use of vitamin D supplements to prevent depression.



Vitamin D can be synthesized through sunlight: 15 minutes a day between 10 a.m. and 3 p.m. on the skin during the summer, though be sure to seek professional health advice regarding skin cancer concerns. In addition to sunlight, vitamin D can also be found in oily fish, UVB-exposed mushrooms and fortified milk.

6. Plant Based Antioxidants

Increased oxidative stress and damage to brain cells have been implicated in a number of mental disorders, including depression and dementia. Antioxidant compounds (such as "polyphenols," which are found in fruits and some herbs) can "mop up" free radicals that damage cells to provide a natural way to combat excessive oxidation. .

Consuming natural antioxidant compounds through your diet is better than taking high-dose supplements of synthetic vitamins A, C or E, because the oxidative system is finely tuned and excess can actually be harmful. These antioxidant compounds are relatively abundant in fruits and vegetables, especially blackberries, blueberries, raspberries and goji berries; Grape; Mango and Mangosteen; Onion; Garlic; Cauliflower; as well as green and black tea; various herbal teas; and coffee.

7. Microbiotics

Research shows a connection between the bacteria in our gut and brain health, which can affect mental health. When the composition of the gut microbiota is less than optimal, it can result in inflammatory responses that can negatively affect nervous system and brain function. A balanced microfloral environment is supported by a diet rich in foods that nourish beneficial bacteria and reduce harmful microbial species, such as *Helicobacter pylori*. Eating fermented foods such as tempeh, sauerkraut, kefir and yogurt, and pectin-rich foods such as the skin of fruits may also help.

The dietary requirement for a micronutrient is defined as an intake level which meets a specified criteria for adequacy, thereby minimizing risk of nutrient deficit or excess. These criteria cover a gradient of biological effects related to a range of nutrient intakes which, at the extremes, include the intake required to prevent death associated with nutrient deficit or excess. However, for nutrients where insufficient data on mortality are available, which is the case for most micronutrients discussed in this report, other biological responses must be defined. These include clinical disease as determined by signs and symptoms of nutrient deficiency, and subclinical conditions identified by specific biochemical and functional measures. Measures of nutrient stores or critical tissue pools may also be used to determine nutrient adequacy.

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DIETARY MANAGEMENT FOR DIABETES PATIENT: A BRIEF NOTE

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ABSTRACT

Diabetes is a chronic disease that requires a holistic approach to care to prevent serious and long-term complications. Type I diabetes is primarily an autoimmune disease and type II diabetes is primarily a metabolic condition. Dietary interventions for both type I and type II diabetes are essentially the same, achieving and maintaining blood glucose and blood pressure levels in the normal range, or as close to the normal range as possible, and containing a lipid and a lipoprotein. Obtaining and maintaining a profile. To reduce the risk of heart disease as well as achieve and maintain a healthy body weight. Prevent, or at least slow down, the development of diabetes complications by considering individual and cultural food preferences and seeking to replace them with appropriate maintenance of the pleasure of eating by limiting food choices only when indicated by scientific evidence .

KEYWORDS: *Dietary Management, Type I, Type II, Diabetes mellitus*

INTRODUCTION

Diabetes mellitus is a group of metabolic diseases in which a person has high blood sugar, either because the pancreas does not produce enough insulin or because the cells do not respond to the insulin produced. High blood sugar produces the classical symptoms of polyuria, polydipsia and polyphagia (Metcalf, 2011). Diabetes mellitus (also known simply as diabetes) is a metabolic disorder whereby the body cannot utilise blood sugar in the proper way owing to lack of insulin or the body's inability to use it effectively. This leads to an increase in the blood sugar level causing symptoms such as extreme thirst, passing large amounts of urine, tiredness and weight loss. In the long term, uncontrolled diabetes can lead to damage of various organs such as the eyes, kidneys and nervous system. It can also increase the risk of developing heart disease and stroke.

Diabetes cannot be cured but can be controlled. A diabetic patient must incorporate a complex regimen of self-management into their life, such as taking medication, following a diet, exercising, and identifying symptoms associated with glycosuria and hypoglycaemia. Management of all diabetes in the patient should include regular evaluation, careful monitoring. Educational training on glycaemia control and the presence and disease management of hypoglycaemia. Hypoglycaemic episodes, especially nocturnal events, occur frequently in the diabetic patient. Continuous

Glucose monitoring systems can provide important insight into 24-h glycemic control and achieve positive treatment outcomes in the diabetic patient (Weinheimer SA, 2012).

Type 1 diabetes accounts for 5-10% of all diagnosed cases of diabetes (CDC, 2005). Type 1 diabetes is an autoimmune disease that cannot be prevented, typically diagnosed in children and young adults. The disease results when the body's immune system destroys pancreatic beta cells responsible for producing insulin. Insulin serves as the signal for glucose uptake into cells, so defects in insulin action or production starves the body's cells of energy in the form of glucose (ADA, 2007a). Because the body is unable to produce insulin, the hormone must be provided through insulin injections or an insulin pump (CDC).

Type 2 diabetes is the most prevalent form of diabetes, accounting for 90-95% of all diagnosed cases (CDC, 2005). In the past, type 2 diabetes was identified as adult onset diabetes; however, this term is no longer accurate due to the increased incidence of type 2 diabetes among adolescents accompanying the national rise in adolescent obesity (Pinhas-Hamiel et al., 1996). The increasing prevalence of type 2 diabetes is also associated with the national rise in metabolic syndrome, a condition characterized by insulin resistance, which can progress to type 2 diabetes if left untreated (American Heart Association, 2007). Type 2 diabetes begins when



cells fail to properly use insulin produced by the pancreas and gradually the disease progresses to where the pancreas no longer has the ability to produce insulin (CDC). Type 2 diabetes is potentially controllable before permanent beta cell failure occurs (Wing, 1995). Elevated blood glucose concentrations, overweight, and a sedentary lifestyle are all reversible risk factors of type 2 diabetes (Knowler et al., 2002).

Diabetes is managed by insulin replacement, balancing of diet and exercise to maintain the glycemic control and prevent the occurrence of the complication. It is important that in order to effectively manage diabetes, education about the components of management such as blood glucose monitoring, insulin replacement, diet, exercise, and problem solving strategies must be delivered to the patient, education is necessary both at diagnosis, and also throughout the patient's lifetime to develop self management skills and prevention of complication (Edmonton, 2010).

RESULT WITH SOME SUGGESTIVE DIETARY MANAGEMENT TIPS

Diabetes self-management education is considered an integral component of care and is recommended at diagnosis and thereafter. Diabetes self-management. Education helps people with diabetes initiate

effective self care when first diagnosed and also help people maintain effective self management as diabetes. The aim of educational intervention is to manage hypoglycaemia and hyperglycaemia, maintain normal blood glucose level, reduce the complications, gain skill in self management or improve quality of life. Diabetes mellitus is a silent disease and now recognized as one of the fastest growing threats to public health in almost all countries of the world. Diabetes is an autoimmune disease in which the pancreas no longer produces the insulin. Insulin is a hormone that enables people to get energy from food. (Richard A, 2012).

A diabetes meal plan (diabetes diet) is a nutrition guide for people with diabetes to help them decide when to consume meals and snacks as well as what types of foods to eat. There is no one pre-set diabetes diet that works for all people with diabetes. The goal of any diabetes meal plan is to achieve and maintain good control over the disease, including control of blood sugar and blood lipid levels, as well as maintaining a healthy weight and good nutrition. Health care professionals and nutritionists can provide advice to help you create the best meal plan to manage your diabetes. Nutritionists can help you find recipes and cooking tips to help with meal planning and preparation.

DIETARY MANAGEMENT TIPS FOR DIABETIC PERSON IN DAILY ROUTINE	
1. Eat a Balanced Diet	Diabetic person should eat a variety of foods to meet your nutritional requirements and your reliable dietician will work with you to ensure you eat a suitable amount and types of food from each of the food groups.
2. Moderate Your Sugar Intake	<p>Sugar and sugar products contain carbohydrates, which can affect your blood sugar level. They are therefore among the foods to avoid with diabetes when possible, or take very occasionally and in small amounts only.</p> <ul style="list-style-type: none"> • Replace sweetened drinks (e.g. soft drinks, sweetened packaged drinks and fruit juice) with unsweetened drinks (e.g. water, plain tea and unsweetened soy milk) • Have fresh fruits instead of fruit juice and canned fruits soaked in syrup • Choose a piece of fresh fruit for dessert instead • Avoid eating snacks that are high in sugar content such as jellies, ice cream, chocolates and cake • Artificial sweeteners like aspartame or saccharin can be used as a substitute for regular sugar



3. Moderate Your Consumption of Rice and Other Starch	<p>Pasta, noodles and starchy vegetables (e.g. potatoes, carrots, corn and yam) contain carbohydrates, which will affect blood sugar levels.</p> <ul style="list-style-type: none"> • Spread these foods evenly throughout the day to manage your blood sugar level • Select foods rich in fibre, such as brown rice and wholemeal or wholegrain bread, to prevent the rapid rise of glucose in your blood
4. Fruits for Diabetics	<p>It is recommended to have two servings of fruits per day to provide you with adequate vitamins, minerals, antioxidants and fibre. As fruit also contains carbohydrate in the form of sugars, your blood sugar levels will be affected if you consume too much.</p> <ul style="list-style-type: none"> • Spread your fruits evenly throughout the day • Choose fresh fruits instead of fruit juice or canned fruits soaked in syrup • Limit the amount of dried fruits you eat, as they have a higher sugar content than fresh fruits
5. Limit Fat Intake	<p>Type 2 diabetics should not consume excessive amounts of fat or oils, as this decreases the effectiveness of insulin action.</p> <ul style="list-style-type: none"> • Use less oil when cooking and remove all visible fat before eating • Instead of deep-frying food, select healthier cooking methods such as steaming, boiling and grilling. Limit deep-fried foods to one or two times a week • Choose lean meat or poultry without skin • Choose fat-free or lower-fat food products such as low-fat milk and fat-free yoghurt • Go for healthier cooking oils with polyunsaturated fat (e.g. corn, soybean) or monounsaturated fat (e.g. olive, canola)
6. Moderate Your Alcohol Intake	<p>Alcohol is only allowed if blood sugar is well-controlled. Avoid alcohol if you have a high blood triglyceride level, kidney disease or heart disease. A standard alcoholic drink contains 10 grams of alcohol, which translates to 100 millilitres of wine or two-thirds of a can (220 millilitres) of regular beer.</p> <ul style="list-style-type: none"> • Drink alcohol in moderation, i.e. not more than one standard drink per day • Use sugar-free sodas or water to mix your drinks and cocktails

CONNECTION BETWEEN FOOD AND BLOOD SUGAR LEVEL

Food has a direct effect on blood sugar. Some foods raise blood sugar more than others. An important part of managing diabetes is knowing what and how much to eat, and following an eating plan that fits your lifestyle while helping to control blood sugar. The three main nutrients found in foods are carbohydrates, proteins, and fats.

- Carbohydrates in foods such as cereals, fruits, vegetables, milk products and sweets contain

starch, sugar and fiber. They raise blood sugar faster and more quickly than other nutrients in foods: protein and fat. Knowing which foods contain carbs and the amount of carbs in a food is helpful for blood sugar control. Choosing carbs from healthy sources like vegetables, fruits and whole grains (high fiber) is preferred over carbs from sources with added sugars, fat and salt.

- Proteins are an essential part of a balanced diet and can keep you from feeling hungry. They



don't directly raise your glucose like carbs. However, to prevent weight gain, use portion control along with protein. In people with type 2 diabetes, protein makes insulin act faster, so treating low blood sugar with a protein shake or mix may not be a good idea. To treat low blood sugar, consume 15 grams* of fast-acting carbs

- that contain glucose, such as juice, other sugar-sweetened drinks, glucose gels or tablets.
- Fats are an essential part of a balanced diet, especially healthy fats from fatty fish, nuts and seeds. They do not raise blood sugar but are high in calories and can lead to weight gain. Aim to include all three nutrients to balance your meals.

• GUIDELINES FOR HEALTHY EATING

- Enjoy having regular meals with proper portion sizes. Your healthcare professional can help you learn to make healthy food choices and proper portion sizes.
- Eat a variety of nutrient-rich foods in each meal, including healthy fats, lean meats or proteins, whole grains and low-fat dairy in appropriate portion sizes.
- Choose fiber-rich foods, such as fruits, vegetables and whole grains (bran cereals, whole wheat pasta, brown rice) as often as possible.
- Try alternatives to meat, such as lentils, beans or tofu.
- Choose calorie-free liquids, such as unsweetened tea, coffee or water.
- Choose sugar substitutes.
- Choose lower-salt options.

CONCLUSION

Self care is the key to the development of the patient is independence and self esteem. Patients with diabetes must perform a complex set of self-care activities, to keep the blood glucose level in a normal range ,including insulin administration, monitoring blood glucose and following a healthy diet ,however diabetes self management is demanding and requires much effort, skill and knowledge , the diabetes skill training helps to develop skill, and ability necessary for diabetes selfcare (Stephanie Austin, 2011).

The exercise should be a part of diabetic management it should be planned according to the patient interest and capabilities. Regular exercises aid the body to use the food and often reduces the insulin requirement, the exercise may lead to hypoglycaemia during or following the activities (Bernardini, et.al., 2013). The goal of diabetes education includes encouraging the patient to do exercises and also to acquire knowledge and skill to manage the hypoglycaemia and hyperglycemia. The main goal of the National Diabetes Prevention And Control Programme (NDPCP) is to reduce the burden of disease and to increase the awareness and knowledge on diabetes (Rivellese 2011).

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ORGANIC MENTAL DISORDERS IN ELDERLY

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INTRODUCTION

It is assumed that all psychological and behavioral processes, whether normal or abnormal, are a result of normal or deranged brain function. Only disorders with a known organic cause are called organic mental disorders. Thus, organic mental disorders are behavioral or psychological disorders associated with transient or permanent brain dysfunction and include only those mental and behavioral disorders that are due to demonstrable cerebral disease or disorder, either primary (primary brain pathology) or secondary (brain dysfunction due to systemic diseases). The use of term organic here does not imply that other psychiatric disorders are 'non-organic' in the sense of having no biological basis. It simply means that the organic mental disorders have a demonstrable and independently diagnosable cerebral disease or disorder, unlike other psychiatric disorders that do not at present. In the present context, the term "organic" means simply that the syndrome so classified can be attributed to an independently diagnosable cerebral or systemic disease or disorder. The term "symptomatic" is used for those organic mental disorders in which cerebral involvement is secondary to a systemic extra cerebral disease or disorder (ICD-10).

The presence of following features requires a high index of suspicion for an organic mental disorder (or what is loosely called as organicity):

1. First episode.
2. Sudden onset.
3. Older age of onset.
4. History of drug and/or alcohol use disorder.
5. Concurrent medical or neurological illness.
6. Neurological symptoms or signs, such as seizures, impairment of consciousness, head injury, sensory or motor disturbance.
7. Presence of confusion, disorientation, memory impairment or soft neurological signs.

8. Prominent visual or other non-auditory (e.g. olfactory, gustatory or tactile) hallucinations. These disorders can be broadly sub categorized into the following categories:

1. Delirium,
2. Dementia,
3. Organic amnesic syndrome
4. Other organic mental disorders.

DELIRIUM

Delirium is the commonest organic mental disorder seen in clinical practice. Five to fifteen percent of all patients in medical and surgical inpatient units are estimated to develop delirium at some time in their lives. This percentage is higher in postoperative patients. Delirium is the most appropriate substitute for a variety of names used in the past such as acute confusional states, acute brain syndrome, acute organic reaction, toxic psychosis, and metabolic (and other acute) encephalopathies.

Clinical Features

Delirium is characterized by the following features:

1. A relatively acute onset,
2. Clouding of consciousness, characterized by a decreased awareness of surroundings and a decreased ability to respond to environmental stimuli
3. Disorientation (most commonly in time, then in place and usually later in person), associated with a decreased attention span and distractibility.
4. Marked perceptual disturbances such as illusions, misinterpretations, and hallucinations also occur.
5. There is often a disturbance of sleep-wake cycle; most commonly, insomnia at night with daytime drowsiness.
6. There is also an impairment of registration and retention of new memories.



Aetiology

The list of possible causes of delirium is virtually endless. Any factor which disturbs the metabolism of brain sufficiently can cause delirium. The etiology of delirium demonstrates a threshold phenomenon, with a combination of factors adding up to cross a threshold for causing delirium, which appears to be different for each individual. One of the important causes is post-cardiac surgery delirium. Some other causes may include:

1. Cardiac arrest
2. Drugs(both ingestion and withdrawal can cause delirium)
3. Nutritional Deficiencies
4. Epilepsy, head injury, Intracranial infections and Stroke

Management

1. In cases where a cause is not obvious (or other contributory causes are suspected), a battery of investigations should be done which can include complete blood count, urinalysis etc.
2. Identification of the cause and its immediate correction.
3. Symptomatic measures: As many patients are agitated, emergency psychiatric treatment may be needed.
4. Supportive medical and nursing care.

DEMENTIA

Dementia is a syndrome due to disease of the brain, usually of a chronic or progressive nature, in which there is disturbance of multiple higher cortical functions, including memory, thinking, orientation, comprehension, calculation, learning capacity, language, and judgement. It is a chronic organic mental disorder, characterized by the following main clinical features:

1. Impairment of intellectual functions,
2. Impairment of memory (predominantly of recent memory, especially in early stages),
3. Deterioration of personality with lack of personal care.

Impairment of all these functions occurs globally, causing interference with day-to-day activities and interpersonal relationships. There is impairment of judgement and impulse control, and also impairment of abstract thinking. There is however usually no impairment of consciousness (unlike in delirium).

Aetiology

A large number of conditions can cause dementia. However, a majority of cases are due to a few common causes such as Alzheimer's disease and multi-infarct dementia.

1. Alzheimer's Dementia is the commonest cause of dementia, seen in about 70% of all cases of dementia in USA. It is more commonly seen in women.
2. Multi-infarct dementia is the second commonest cause of dementia, seen in 10-15% of all cases, though some studies indicate that multi-infarct dementia is probably far more common in India. It is also one of the important treatable causes of dementia.
3. Hypothyroid Dementia has been considered one of the most important treatable and reversible causes of dementia, second only to toxic dementias. Although it accounts for less than 1% of dementias, hypothyroidism should be suspected in every patient of dementia.
4. About 50-70% of patients suffering from AIDS exhibit a triad of cognitive, behavioural and motoric deficits of subcortical dementia type and this is known as the AIDS-dementia complex (ADC).
5. Lewy body dementia is now believed to be the second most common cause of the degenerative dementias, accounting for about 4% of all dementias.

Management

1. The diagnostic tests are of great importance in finding the cause, or to exclude all other causes before diagnosing Alzheimer's dementia.
2. Early treatment can prevent further deterioration of dementia.
3. Environmental manipulation and focus on coping skills to reduce stress in day-to-day activities. Treatment of medical complications, if any.
4. Care of food and hygiene. Supportive care for the patient and family/caregivers.

ORGANIC AMNESTIC SYNDROME

A syndrome of prominent impairment of recent and remote memory. While immediate recall is preserved, the ability to learn new material is markedly reduced and this results in anterograde amnesia and disorientation in time. Retrograde amnesia of varying intensity is also present but its extent may lessen over time if the underlying lesion or pathological process has a tendency to recover. Confabulation may be a marked feature but is not invariably present. Perception and other cognitive functions, including the intellect, are usually intact and provide a background against which the memory disturbance appears as particularly striking. The prognosis depends on the course of the



underlying lesion (which typically affects the hypothalamic-diencephalic system or the hippocampal region); almost complete recovery is, in principle, possible. Organic amnesic syndrome is characterized by the following clinical features:

1. Impairment of memory due to an underlying organic cause,
2. No severe disturbance of consciousness and attention (unlike delirium)
3. No global disturbance of intellectual function, abstract thinking and personality (unlike dementia).

The impairment of memory is characterized by a severe impairment of recent memory or short-term memory (inability to learn new material). This is associated with impaired remote memory or long-term memory (inability to recall previously learned material). There is however no impairment of immediate memory (i.e. immediate retention and recall). Although recent memory is severely disturbed, very remote events are better remembered, especially in the initial stages. Recent memory impairment also leads to disorientation in time and place.

Aetiology

1. Thiamine deficiency: The most common cause of organic amnesic syndrome is chronic alcohol dependence (alcoholism). It is also called as the Wernicke- Korsakoff syndrome.
2. Head trauma, Surgical procedure (e.g. bilateral temporal lobectomy), Hypoxia, Posterior cerebral artery stroke (bilateral).

Management

1. Treatment of the underlying cause, e.g. thiamine (high doses) in Wernicke-Korsakoff syndrome. However usually the treatment is of not much help, except in prevention of further deterioration and the prognosis is often poor.
2. Supportive care for general condition and treatment of the associated medical illness.

OTHER ORGANIC MENTAL DISORDERS

This group includes miscellaneous mental disorders which are causally related to brain dysfunction due to primary cerebral disease, systemic disease (secondary), or toxic substances. These conditions have in common clinical features that do not by themselves allow a presumptive diagnosis of an organic mental disorder, such as dementia or delirium. Rather, the clinical manifestations resemble, or are identical with, those of disorders not regarded as "organic" in the specific sense restricted to this block of the classification. Their inclusion here is based on the

hypothesis that they are directly caused by cerebral disease or dysfunction rather than resulting from either a fortuitous association with such disease or dysfunction, or a psychological reaction to its symptoms, such as schizophrenia-like disorders associated with longstanding epilepsy.

ORGANIC HALLUCINOSIS

According to ICD-10, presence of persistent or recurrent hallucinations due to an underlying organic cause is required for the diagnosis of organic hallucinosis, in addition to the general guide lines for the diagnosis of other organic mental disorders, described earlier. It is important to rule out any major disturbance of consciousness, intelligence, memory, mood or thought. These hallucinations can occur in any sensory modality but are usually visual (most common) or auditory in nature. In many cases, they depend on the underlying cause. These hallucinations can range from very simple and unformed, to very complex and well-organised. Usually the patients realize that the hallucinations are not real but sometimes there may be a delusional elaboration of hallucinations.

Aetiology

1. Drugs: Hallucinogens, cocaine, cannabis etc.
2. Alcohol: In alcoholic hallucinosis, auditory hallucinations are usually more common.
3. Sensory deprivation.
4. 'Release' hallucinations due to sensory pathway disease, e.g. bilateral cataracts, otosclerosis, optic neuritis.
5. Migraine, Epilepsy: Complex partial seizure, Intracranial space occupying lesions, Temporal arteritis, Brain stem lesions (peduncular hallucinosis).

Management

1. Treatment of the underlying cause, if treatable.
2. Symptomatic treatment with a low dose of an antipsychotic medication (such as Haloperidol, Risperidone and Olanzapine) may be needed.

ORGANIC CATATONIC DISORDER

It is a disorder of diminished (stupor) or increased (excitement) psychomotor activity associated with catatonic symptoms. The extremes of psychomotor disturbance may alternate. It is not known whether the full range of catatonic disturbances described in schizophrenia occurs in such organic states, nor has it been conclusively determined whether an organic catatonic state may occur in clear consciousness or whether it is always a manifestation of delirium, with subsequent partial or total amnesia.



Encephalitis and carbon monoxide poisoning are presumed to be associated with this syndrome more often than other organic causes.

Aetiology

1. Lack of neurotransmitters
2. Sudden reduction of Dopamine and GABA
3. Disorders like Neurodevelopmental, Psychotic, Bipolar and Depressive

ORGANIC DELUSIONAL [SCHIZOPHRENIA-LIKE] DISORDER

A disorder in which persistent or recurrent delusions dominate the clinical picture. The delusions may be accompanied by hallucinations but are not confined to their content. Features suggestive of schizophrenia, such as bizarre delusions, hallucinations, or thought disorder, may also be present.

CONCLUSION

These disorders generally affect the geriatric population of the society due to the impairment in the cognitive abilities. These disorders can be cured with the help of medications (antipsychotics), psychotherapy, and self-help groups that can enable a person to cope up with them. Professional help should be immediately taken at the onset of a disorder. A psychological technique that is very helpful in treating these organic mental disorders is Cognitive Behavioral Therapy (CBT) in which people learn to change their thoughts to change their resulting feelings. The person, for example, learns to focus more on the positive aspects of becoming older than the negative aspects. CBT is the most common form of treatment.

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A COMPARATIVE STUDY ON BRAND EQUITY OF MAHINDRA CARS AND TOYOTA CARS IN COIMBATORE CITY

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ABSTRACT

Building brand equity in a competitive market can play an efficient role in the modern marketing environment. It is now widely acknowledged by companies and business enterprises that strong brand equity will make a competitive advantage in the marketplace that will increase their overall knowledge with experiences and trustworthiness. Indeed, recent trends in modern marketing have changed tremendously, and study of brand equity is increasingly becoming essential to keep pace with this change. The project focusing on Mahindra and Toyota branch in Coimbatore city. This study will help us to get a better picture as to what customers perceive about Mahindra and Toyota car and their awareness about the same. This study also brings to light the customer expectations about the Mahindra and Toyota Vehicle.

KEYWORDS: Brand equity, Mahindra car, Toyota car

1. INTRODUCTION

A Brand is an intangible element, it has no objective existence. Branding is merely a perception on the minds of the end users. The marketing activities create a brand image in the minds of the consumers, which directly affects the buying behavior. People buy the products based on the brand image associated with it, they try to differentiate products based on the brand image. The study and analysis of the impact of human personality on brand personality of Toyota cars is a significant one in the area of business administration. Every business life cycle in this competitive environment illustrates the importance of information for making calculative decisions based on the issues.

2. STATEMENT OF THE PROBLEM

Brand equity is a vital marketing strategy used by firms to maintain and expand their market size. It generates values to the firm, society and customers in the competitive global marketing environment. In other words, customer-based brand equity involves customer reaction to an element of the marketing mix for the brand in comparison with their reaction to the same

marketing mix element attributed to a unnamed version of the product or service. The concept of consumer brand equity is considered to discuss how it can be dealt, measured and managed. An attempt is made to evaluate the consumer based brand equity of automobile products. The research issues are-What are the features of brand equity? What are the factors determining brand equity? What is the cause and effect relationship among the brand equity items? What is the level of brand equity among the select products? What is the relationship between personal, rational factors and brand equity items?

3. OBJECTIVE OF THE STUDY

- To know brand equity level of Mahindra cars and Toyota cars
- To know which series of Mahindra cars and Toyota cars attracts the customer.
- To know the factors which build the brand image.
- To know the customer's familiarity with the Mahindra cars and Toyota cars.



4. RESEARCH METHODOLOGY

Source of Data	Secondary data
Period of Study	2015-2016 to 2019-2020
Framework of analysis	Convenience Sampling Technique
Tools and techniques	Percentage analysis, liker scale analysis

5. STATISTICAL TOOLS

- Percentage analysis
- Likert scale analysis

6. REVIEW OF LITERATURE

¹Liu (2002) in his article examined factors affecting the brand decision in the automobile industry in Asia. It is concluded that brand attributes and product quality is essential element for choosing the brand for purchase.

²Ravichandran.K and Narayanarajan.S (2010) in his article “factors determining the brand preference of consumer durables” analyzed aspects relating brand preference is largely influenced by a number of factors such as advertisement, price, quality, performance, availability of spares, and after-sales service.

³Dr. P. Natarajan & Thiripurasundari U (2011), in their paper Brand Preference on ‘B’Segment Maruti Cars, emphasized that strong brands quality increase trust in intangible products enabling customers to better visualize and understand them

7. TABLE

S.NO S.NO	MODEL BANK	NUMBER OF RESPONDENTS NUMBER OF RESPONDENTS	PERCENTAGE (%) PERCENTAGE (%)
1	Thar	24	32
1	Altis	15	20
2	XUV300	19	25.3
2	Fortuner	24	32
3	KUV100NXT	15	20
3	Innova	18	24
4	Bolero	17	22.7
4	Etios	18	24
5	Others	0	0
5	Others	0	0
	Total	75	100
	Total	75	100

PERCENTAGE ANALYSIS MAHINDRA

- 77.3% of the respondents are male
- 38.7% of the respondents were 18 to 27 years
- 53.3% of the respondents are Singel
- 41.3% of the respondents are employee
- 52% of the respondents are Graduate
- 30.7% of the respondents are Rs 2,00,001 to 3,00,000
- 32% of the respondents like Thar
- 81.3% of the respondents will go for Mahindra car again

- 30.7% of the respondents like style
- 84% of the respondents will recommend Mahindra car to others

PERCENTAGE ANALYSISOF TOYOTA

- 73.3% of the respondents are male
- 36% of the respondents were falls between 28 to 38 years
- 56% of the respondents are Married.
- 34.7% of the respondents are agriculture
- 46.7% of the respondents are Graduate



- 38.7% of the respondents are above Rs 4,00,001
- 32% of the respondents like Fortunar
- 54.7% of the respondents will go for Toyota car again
- 34.7% of the respondents like style
- 50.7% of the respondents will recommend Toyota car to others

LIKERT SCALE ANALYSIS OF MAHINDRA

- Likert scale value 4 is greater than the mid value (3), thus respondents are feeling highly satisfied with safety and comfort of Mahindra car

LIKERT SCALE ANALYSIS OF TOYOTA

- Likert scale value 3.57 is greater than the mid value (3), thus respondents are feeling satisfied with safety and comfort of Toyota car

8. SUGGESTIONS

- More colours should be introduced in the market.
- Improvement in quality & mileage
- The technology of vehicle should be thoroughly tested on all type
- roads before it is being launched into the market
- Body strength should be improved.
- Style should be improved.
- Cost should be reduced

9. CONCLUSION

The stringent competition in the automobile industry cannot be ignored. More the number of players, greater is the competition. Companies need to be on their toes to devise means by which they can establish their brand equity in the market. The dimensions on which this distinction is possible are few and diminishing because of the augmented level competition amongst the companies. But still, India still a male dominated and it's the man who is the brand earner in the most of the house and hence requires automobile for the same purposes maybe. However, mostly youngsters whether married or unmarried are inclined towards driving the cars with latest technology.

In order to get ahead of their competitor, they would have to opt for the marketing strategy that is fresh and innovative enough to lure more customer from the market since the customers that are already using their respective services are well satisfied with each of their performances.

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FREQUENCY CHARACTERISTICS OF BENGALI AND TAMIL VOWELS IN VARYING SPEAKING RATE

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ABSTRACT

Speech has its unique importance as the primary means by which language is expressed in all human cultures. It is a fluid phenomenon, characterized by rapid changes in articulation and its acoustic product. Vowels can differ in acoustic analysis in various aspects because the speech code varies with language, dialect, age and sex and specific physiological constraints of the speaker. Keeping in view that rate brings changes in speech and vowels being more acoustically approachable, it is assumed that there would be changes in vowel acoustics with change in rate of speech. The present study is aimed at understanding the influence of rate of speech on formant frequency of vowel acoustics in two different languages - Bengali (Indo-Aryan) and Tamil (Dravidian). The subjects for the study were grouped based on languages - Group I consisted of 10 males with native language as Bengali, Group II consisted of 10 males with native language as Tamil in the age range of 18 to 28 years. The results shows that the formant frequency of three similar vowels of /a/, /i/ and /u/ in both languages and non-similar/different vowel of /ɔ/ in Bengali and /A/ in Tamil indicates significant difference in varying speaking rate. The differences in vowel acoustics in varying speaking rate in Tamil and Bengali showed higher duration to read the passage in normal than fast rate.

KEYWORDS: Formant frequency, vowel acoustics, Tamil and Bengali

INTRODUCTION

Speech has its unique importance as the primary means by which language is expressed in all human cultures. It is a fluid phenomenon, characterized by rapid changes in articulation and its acoustic product. The dynamics of speech poses a great challenge to its analysis, and one solution has been to make measurements at selected time points thought to represent targets, goals, or steady states. This approach has been taken with vowel formant measurements, which have a long history in the study of speech production, especially because formant descriptions are suited to articulatory interpretations of acoustic data and are therefore fundamental to discovery of features in articulatory-acoustic conversion. (Kent, 2018)

Speech is movement made audible and explained that the movements of the speech organs – structures such as the tongue, lips, jaw, velum and vocal folds result in sound patterns that are perceived by the listener. These movements are used to produce consonants and vowels. Vowels are the sounds produced with laryngeal vibration under relatively open vocal tract that is shaped to produce particular patterns of resonances so that the entire vocal tract functions as a filter or frequency selective transmission system. The vowels are also the simplest sounds to analyze and describe acoustically.

Vowel sound exhibits spectral energy maxima in frequency ranges that correspond to the resonances of the vocal tract during speech production. These spectral energy maxima are known as formants. A formant is a



local maximum in the vocal tract transfer function. Vowels often have been characterized with first three formant frequencies.

Tsao, Weismer and Iqbal (2006) studied the effect of intertalker speech rate variation on acoustic vowel space. They found that within talkers, faster speaking rates result in the compression of the vowel space relative to that measured for slower rates. As a result when the habitual speaking rate was differed significantly, there was no difference observed in the average size of the vowel space for slow vs fast talkers. No relationship across talkers between vowel duration and formant frequencies was found as well. The intertalker variability of the vowel spaces was found to be greater for slow talkers than the fast talkers for both males and females (Dietrich, 2019). Keeping in view that rate brings changes in speech and vowels being more acoustically approachable, it is assumed that there would be changes in vowel acoustics with change in rate of speech. The present study is aimed at understanding the influence of rate of speech on vowels acoustics in two different languages - Bengali (Indo-Aryan) and Tamil (Dravidian). The present study included only males because the high frequency voices especially more than 400 Hz (women and children) usually suffer estimation inaccuracy, the spectral lines become so wide that a reconstruction of the spectral envelop from the available harmonic amplitudes fails to show the second formant. This failure does not mean that the formant is not present, it is just not detected. So, to avoid this inaccuracy, male data has been used in this study.

SYMBOLIC NOTATIONS USED IN THE STUDY

- Formant frequency is symbolized as f_i , where f is the center frequency of the formant and i is the formant number.
- For example, ff_1 is the first formant frequency. The formant frequency for a particular vowel is expressed as $f_i / x /$ where f_i is the formant frequency for formant i and x is a phonetic symbol.
- For example, the first-formant frequency of vowel /i/ is expressed as $f_1/i/$.
- Bengali normal rate of speech is indicated with the acronym BNR and Bengali fast rate of speech is indicated with the acronym BFR.
- Tamil normal rate of speech is indicated with the acronym TNR and Bengali fast rate of speech is indicated with the acronym TFR

AIM OF THE STUDY

To understand the acoustical differences with respect to formant frequency in two different languages, Tamil and Bengali in varying speaking rates.

OBJECTIVES OF THE STUDY

- 1) To compare vowel formant frequency (mf_1 , mf_2) in normal and fast rate in Tamil
- 2) To compare vowel formant frequency (mf_1 , mf_2) in normal and fast rate in Bengali
- 3) To document differences in vowel acoustics in varying speaking rate in Tamil and Bengali
- 4) To document differences in non-similar vowel acoustics in varying speaking rate in Tamil and Bengali
- 5) To compare of mean rate of speech in varying speaking rate in Bengali and Tamil

METHODOLOGY

Subjects

The subjects for the study were grouped based on languages - Group I consisted of 10 males with native language as Bengali, Group II consisted of 10 males with native language as Tamil. Subjects of both groups satisfied the following criteria. 1) All subjects were in age range of 18-28years. 2) No history of any speech, language and hearing disorders. 3) All participants were graduate student volunteers from West Bengal and Tamil Nadu.

Materials

All-phoneme passages in Bengali and Tamil were developed with 225 syllables and 372 syllables in each respectively. These passages served as reading material for the study.

Instrumentation

Tape SONY R 30 Digital Recorder and PRAAT software version 4.3.



Procedure

The subjects of Group I had to read Bengali passage and subjects of Group II had to read Tamil passages. Three recordings of reading from each subject under two conditions were collected. In condition one (Normal rate), the subjects were instructed to read the passage at their normal rate of speech. In condition two (Fast rate), the subjects were instructed to read the passage at twice their normal rate of speech. All the recordings were done in a quiet room. The samples were recorded into Tape SONY R 30 Digital Recorder. The samples were transcribed by Bengali and Tamil speaking speech-language pathologists to get the rate of speech.

Acoustic Analysis

The audio-recordings were digitized into the PC using the recording facility of PRAAT program. The samples were digitized at 22050 Hz sampling frequency and stored as wave files. Using the edit and spectrograph module of PRAAT, the following parameters were extracted for the inter-consonantal vowels with similar context /a/, /i/, /u/ and /ɔ/ in Bengali and /a/, /i/, /u/ and /ʌ/ in Tamil. /a/, /i/ and /u/ were selected as a common vowel to both the languages. /ɔ/ in Bengali and /ʌ/ in Tamil were selected as unique vowels in the language. The parameters assessed in both the languages for all the above mentioned vowels were Mean F1, Mean F2, transition duration, extent of transition to the following consonants and speed of transition.

Rate of Speech Analysis

The audio-recordings were digitized and analyzed from EDIT program of PRAAT to calculate the total number of syllables and time taken for reading the passages for three trials of both normal rate and fast rate. Rate of speech difference is documented with time taken for reading 225 syllables in Bengali and 372 syllables in Tamil respectively.

RESULTS

The present study aimed at comparing the mean formant frequencies of vowels in two different languages in varying speaking rate.

Objective 1: To compare vowel formant frequency (*mf1*, *mf2*) in normal and fast rate in Tamil

Table 1.1. Comparison of vowel mean first formant frequency (mf1) of /a/ in normal and fast rate in Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /a/ Tamil normal rate	10	683.8620	84.97163	25.450	.000
Mean first formant frequency /a/ Tamil fast rate	10	1180.1870	1740.56682	2.144	.061

The above table indicates that there is a significant difference between first formant frequency of /a/ in Tamil normal and fast rate

Table 1.2 Comparison of vowel formant frequency (mf2) of /a/ in normal and fast rate in Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /a/ Tamil normal rate	10	1864.4320	246.16291	23.951	.000
Mean second formant frequency /a/ Tamil fast rate	10	1887.4250	250.41870	23.834	.000

The above table indicates that there is a significant difference between second formant frequency of /a/ in Tamil normal and fast rate



Table 1.3 Comparison of vowel formant frequency (mf1) of /i/ in normal and fast rate in Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /i/ Tamil normal rate	10	567.2090	91.70438	19.559	.000
Mean first formant frequency /i/ Tamil fast rate	10	546.5750	57.18234	30.226	.000

The above table indicates that there is a significant difference between first formant frequency of /i/ in Tamil normal and fast rate

Table 1.4 Comparison of vowel formant frequency (mf2) of /i/ in normal and fast rate in Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /i/ Tamil normal rate	10	2048.4250	105.80053	61.225	.000
Mean second formant frequency /i/ Tamil fast rate	10	2057.9500	131.98264	49.308	.000

The above table indicates that there is a significant difference between second formant frequency of /i/ in Tamil normal and fast rate

Table 1.5 Comparison of vowel formant frequency (mf1) of /u/ in normal and fast rate in Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /u/ Tamil normal rate	10	596.8590	107.17629	25.450	.000
Mean first formant frequency /u/ Tamil fast rate	10	614.6500	154.68065	2.144	.061

The above table indicates that there is a significant difference between first formant frequency of /u/ in Tamil normal and fast rate

Table 1.6 Comparison of vowel formant frequency (mf2) of /u/ in normal and fast rate in Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /u/ Tamil normal rate	10	2031.5110	74.35716	86.397	.000
Mean second formant frequency /u/ Tamil fast rate	10	2025.7090	114.64773	55.874	.000

The above table indicates that there is a significant difference between second formant frequency of /u/ in Tamil normal and fast rate

Objective 2:

To compare vowel formant frequency (mf1, mf2) in normal and fast rate in Bengali

Table 2.1 Comparison of vowel formant frequency (mf1) of /a/ in normal and fast rate in Bengali

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /a/ Bengali normal rate	10	626.6340	40.66656	48.728	.000
Mean first formant frequency /a/ Bengali fast rate	10	415.1300	22.42514	58.540	.000

The above table indicates that there is a significant difference between first formant frequency of /a/ in Bengali normal and fast rate



Table 2.2 Comparison of vowel formant frequency (mf2) of /a/ in normal and fast rate in Bengali

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /a/ Bengali normal rate	10	1575.2700	247.74999	20.107	.000
Mean second formant frequency /a/ Bengali fast rate	10	1571.1400	176.57736	28.137	.000

The above table indicates that there is a significant difference between second formant frequency of /a/ in Bengali normal and fast rate

Table 2.3 Comparison of vowel formant frequency (mf1) of /i/ in normal and fast rate in Bengali

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /i/ Bengali normal rate	10	406.0300	28.92362	44.392	.000
Mean first formant frequency /i/ Bengali fast rate	10	415.1300	22.42514	58.540	.000

The above table indicates that there is a significant difference between first formant frequency of /i/ in Bengali normal and fast rate

Table 2.4 Comparison of vowel formant frequency (mf2) of /i/ in normal and fast rate in Bengali

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /i/ Bengali normal rate	10	1651.0100	312.49287	16.707	.000
Mean second formant frequency /i/ Bengali fast rate	10	1563.2680	294.03000	16.813	.000

The above table indicates that there is a significant difference between second formant frequency of /i/ in Bengali normal and fast rate

Table 2.5 Comparison of vowel formant frequency (mf1) of /u/ in normal and fast rate in Bengali

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /u/ Bengali normal rate	10	454.2670	81.12285	17.708	.000
Mean first formant frequency /u/ Bengali fast rate	10	470.3230	90.26332	16.477	.000

The above table indicates that there is a significant difference between first formant frequency of /u/ in Bengali normal and fast rate

Table 2.6 Comparison of vowel formant frequency (mf2) of /u/ in normal and fast rate in Bengali

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /u/ Bengali fast rate	10	1240.9500	146.35507	23.424	.000
Mean second formant frequency /u/ Bengali normal rate	10	2025.7090	114.64773	86.397	.000

The above table indicates that there is a significant difference between second formant frequency of /u/ in Bengali normal and fast rate



Objective 3: To document differences in vowel acoustics in varying speaking rate in Tamil and Bengali
Table 3.1 Comparison of vowel formant frequency (mf1) of /a/ in normal rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /a/ Bengali normal rate	10	626.6340	40.66656	48.728	.000
Mean first formant frequency /a/ Tamil normal rate	10	683.8620	84.97163	25.450	.000

The above table indicates that there is a significant difference between first formant frequency of /a/ in Bengali and Tamil normal rate

Table 3.2 Comparison of vowel formant frequency (mf2) of /a/ in normal rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /a/ bengali normal rate	10	1575.2700	247.74999	20.107	.000
Mean second formant frequency /a/ tamil normal rate	10	1864.4320	246.16291	23.951	.000

The above table indicates that there is a significant difference between second formant frequency of /a/ in Bengali and Tamil normal rate

Table 3.3 Comparison of vowel formant frequency (mf1) of /i/ in normal rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /i/ bengali normal rate	10	406.0300	28.92362	44.392	.000
Mean first formant frequency /i/ tamil normal rate	10	567.2090	91.70438	19.559	.000

The above table indicates that there is a significant difference between first formant frequency of /i/ in Bengali and Tamil normal rate

Table 3.4 Comparison of vowel formant frequency (mf2) of /i/ in normal rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /i/ bengali normal rate	10	1651.0100	312.49287	16.707	.000
Mean second formant frequency /i/ tamil normal rate	10	2048.4250	105.80053	61.225	.000

The above table indicates that there is a significant difference between second formant frequency of /i/ in Bengali and Tamil normal rate

Table 3.5 Comparison of vowel formant frequency (mf1) of /u/ in normal rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /u/ bengali normal rate	10	454.2670	81.12285	17.708	.000
Mean first formant frequency /u/ tamil normal rate	10	596.8590	107.17629	17.611	.000

The above table indicates that there is a significant difference between first formant frequency of /u/ in Bengali and Tamil normal rate



Table 3.6 Comparison of vowel formant frequency (mf2) of /u/ in normal rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	T	Sig. (2-tailed)
Mean second formant frequency /u/ bengali normal rate	10	1328.7900	179.38839	23.424	.000
Mean second formant frequency /u/ tamil normal rate	10	2031.5110	74.35716	86.397	.000

The above table indicates that there is a significant difference between second formant frequency of /u/ in Bengali and Tamil normal rate

Table 3.7 Comparison of vowel formant frequency (mf1) of /a/ in fast rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /a/ bengali fast rate	10	584.3120	46.34369	39.871	.000
Mean first formant frequency /a/ tamil fast rate	10	1180.1870	1740.56682	2.144	.061

The above table indicates that there is a significant difference between first formant frequency of /a/ in Bengali and Tamil fast rate

Table 3.8 Comparison of vowel formant frequency (mf2) of /a/ in fast rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	T	Sig. (2-tailed)
Mean second formant frequency /a/ bengali fast rate	10	1571.1400	176.57736	28.137	.000
Mean second formant frequency /a/ tamil fast rate	10	1887.4250	250.41870	23.834	.000

The above table indicates that there is a significant difference between second formant frequency of /a/ in Bengali and Tamil fast rate

Table 3.9 Comparison of vowel formant frequency (mf1) of /i/ in fast rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /i/ bengali fast rate	10	415.1300	22.42514	58.540	.000
Mean first formant frequency /i/ tamil fast rate	10	546.5750	57.18234	30.226	.000

The above table indicates that there is a significant difference between first formant frequency of /i/ in Bengali and Tamil fast rate

Table 3.10 Comparison of vowel formant frequency (mf2) of /i/ in fast rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /i/ bengali fast rate	10	1563.2680	294.03000	16.813	.000
Mean second formant frequency /i/ tamil fast rate	10	2057.9500	131.98264	49.308	.000

The above table indicates that there is a significant difference between second formant frequency of /i/ in Bengali and Tamil normal rate



Table 3.11 Comparison of vowel formant frequency (mf1) of /u/ in fast rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean first formant frequency /u/ bengali fast rate	10	470.3230	90.26332	16.477	.000
Mean first formant frequency /u/ tamil fast rate	10	614.6500	154.68065	12.566	.000

The above table indicates that the there is a significant difference between first formant frequency of /u/ in Bengali and Tamil fast rate

Table 3.12 Comparison of vowel formant frequency (mf2) of /u/ in fast rate in Bengali and Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Mean second formant frequency /u/ bengali fast rate	10	1240.9500	146.35507	26.813	.000
Mean second formant frequency /u/ tamil fast rate	10	2025.7090	114.64773	55.874	.000

The above table indicates that the there is a significant difference between second formant frequency of /u/ in Bengali and Tamil fast rate

Objective 4

To document differences in non-similar vowel acoustics in varying speaking rate in Bengali and Tamil

Table 4.1 Comparison of different vowel formant frequency (mf1) of /ɔ/ in normal and fast rate in Bengali

One-Sample Statistics					
	N	Mean	Std. Deviation	T	Sig. (2-tailed)
Mean first formant frequency different bengali normal rate	10	581.9200	27.52041	66.866	.000
Mean first formant frequency different bengali fast rate	10	582.0330	41.37235	44.487	.000

The above table indicates that the there is a significant difference between first formant frequency of non-similar vowel /ɔ/ in Bengali normal and fast rate

Table 4.2 Comparison of different vowel formant frequency (mf2) of /ɔ/ in normal and fast rate in Bengali

One-Sample Statistics					
	N	Mean	Std. Deviation	T	Sig. (2-tailed)
Mean second formant frequency different bengali normal rate	10	1252.0400	145.27507	27.254	.000
Mean second formant frequency different bengali fast rate	10	1270.5700	100.44637	40.000	.000

The above table indicates that the there is a significant difference between second formant frequency of non-similar vowel /ɔ/ in Bengali normal and fast rate


Table 4.3 Comparison of different vowel formant frequency (mf1) of /Λ/ in normal and fast rate in Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	T	Sig. (2-tailed)
Mean first formant frequency different Tamil normal rate	10	612.2880	94.36566	20.518	.000
Mean first formant frequency different Tamil fast rate	10	619.6100	58.98875	33.216	.000

The above table indicates that there is a significant difference between first formant frequency of non-similar vowel /Λ/ in Tamil normal and fast rate.

Table 4.4 Comparison of different vowel formant frequency (mf2) of /Λ/ in normal and fast rate in Tamil

One-Sample Statistics					
	N	Mean	Std. Deviation	T	Sig. (2-tailed)
Mean second formant frequency different Tamil normal rate	10	2466.7940	1913.96663	4.076	.003
Mean second formant frequency different Tamil fast rate	10	1877.0730	276.23307	21.488	.000

The above table indicates that there is a significant difference between second formant frequency of non-similar vowel /Λ/ in Tamil normal and fast rate.

Objective 5

To compare of mean rate of speech in varying speaking rate in Bengali and Tamil

Table 5.1 Comparison of mean rate of speech in varying speaking rate in Bengali and Tamil

Participants	BNR	BFR	TNR	TFR
1	7.41	4.47	7.57	4.44
2	7.52	4.21	5.58	4.39
3	7.05	4.38	5.65	3.75
4	7.86	5.27	6.7	4.96
5	7.51	4.13	7.51	5.44
6	7.58	4.56	7.86	5.9
7	8.33	5.24	9.62	6.33
8	7.82	5.13	9.79	5.75
9	7.33	4.42	8.02	5.94
10	8.42	5.08	7.35	4.5
Mean Rate of Speech	7.683	4.689	7.565	5.14

*BNR-Bengali Normal Rate; BFR-Bengali Fast Rate; TNR- Tamil Normal Rate; TFR-Tamil Fast Rate

The rate of speech values of BNR/BFR and TNR/TFR are fed as follows: Participant 1 who is a native Bengali speaker had taken 7.41 minutes/225 syllables in Bengali normal rate of speech and 4.21 minutes/225 syllables in Bengali fast rate of speech. In the same way, Participant 1 who is native Tamil speaker had taken 7.57 minutes/372 syllables in Tamil normal rate of speech and 4.44 minutes/372 syllables in Tamil fast rate of speech. Thus, the above table indicates that the mean rate of speech in Bengali and Tamil showed higher duration to read the passage in normal than fast rate.



DISCUSSION

Vowels can differ in acoustic analysis in various aspects because the speech code varies with language, dialect, age, sex and specific physiological constraints of the speaker (Fant, 2004). In the current study, we attempted to understand the acoustical differences in two different languages, Tamil and Bengali which belongs to two different language family, Dravidian and Indo-Aryan respectively. We introduced reading passages in the mentioned languages for understanding the differences in first and second formant frequencies of vowels extracted from the reading samples.

The results showed that there is a significant difference between first and second formant frequency of similar vowels /a/, /i/, /u/ in Bengali and Tamil in varying speaking rate. We also compared non-similar vowels in these two languages finding that there is significant difference between first and second formant frequency of non-similar vowels /ɔ/ in Bengali and vowel /ʌ/ Tamil in varying speaking rate. By documenting the differences in formant frequencies in varying speaking rate we are able to understand that rate makes an important difference in formant frequencies which is again also the influenced by the language spoken.

Thus, in this study it is proved that there would be changes in vowel acoustics with changes in rate of speech and it is clinically important to investigate the language specific rate of speech in individuals when we are assessing conversational discourse or reading sample for acoustical analysis. Further research in larger population might be needed for extensive information on the same.

It is known that the intertalker variability of the vowel spaces was found to be greater for slow talkers than the fast talkers for both males and females (Dietrich, 2019). We sought to understand if this holds good with different languages and different speaking rate in this study and found that the mean rate of speech in Bengali and Tamil was higher in duration when the passage was in normal rate than fast rate.

CONCLUSION

Vowel formant frequencies are among the most frequently reported acoustic measures of speech and are used in a variety of applications including automatic speech recognition, studies of speech production and speech perception in various populations of speakers, and clinical assessments in a range of speech, voice, and language disorders. In the present study that aimed at representing the influence of rate of speech on vowels acoustics in two different languages - Bengali (Indo-Aryan) and Tamil (Dravidian) by comparing the mean formant frequencies (mf1 and mf2) of vowels of /a/, /i/ and /u/ in two different languages Tamil and Bengali in normal and fast speaking rate, we found that there is a significant difference in one sample t - test. Results also indicated that there is a significant difference between formant frequencies of non-similar vowel /ɔ/ in Bengali normal and fast rate and /ʌ/ in Tamil normal and fast rate. Results of differences in vowel acoustics in varying speaking rate in Tamil and Bengali that the mean rate of speech in Bengali and Tamil showed higher duration to read the passage in normal than fast rate.

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A SURVEY ON RURAL SCHOOL STUDENTS EDUCATION PERFORMANCE USING DATA MINING TECHNIQUES

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ABSTRACT

In India there exists a lot of Rural areas in which the educational performance of the rural school students are inferior when compared it to the performance of the urban areas due to the lack of facilities, environment, income, employment opportunities and exposure. Equality is one among the basic principle of our country, so it's a mere responsibility of any research study to perform a detailed analysis towards the performance of rural school students by focusing on to the factors to be monitored and improved so that the Rural areas also raise to the equilateral level of competition with the Urban areas. For this goal Data mining plays a vital role in order to handle the data in proper way for analysis and prediction of performances for the improvement of rural school student's education domain results. This paper presents a survey on Data Mining strategies used for prediction and performance analysis of rural school students education improvements.

KEYWORDS—Data Mining, Rural, Urban, Prediction, Performance

1. INTRODUCTION

Data mining is a process used by companies to turn raw data into useful information. By using software to look for patterns in large batches of data, businesses can learn more about their customers to develop more effective marketing strategies, increase sales and decrease costs. Data mining depends on effective data collection, warehousing, and computer processing [7].



Fig-1: Data Mining Architecture

2. INDIAN EDUCATION COMPARISON

The figure 2 shows the rural school students performance is nearly half of the mark when compared it to the urban student's education performance during Jan 2016 [6].

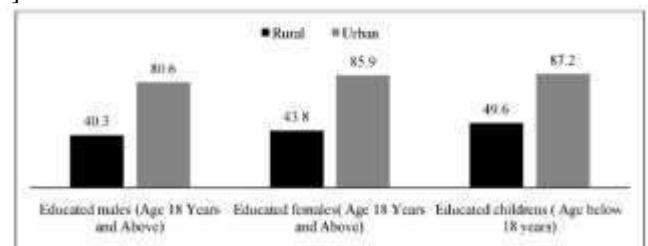


Fig-2: Sample Education comparison Jan 2016[6]

But after Jio mobile implementation nowadays the information technology details are reaching the rural people in a faster way and their impact will also so good in near future which may increase the motivation of learning and educational job opportunity awareness. Maybe the 2026 statistics will be an entirely appreciable one, if we perform a proper data mining approach towards their education improvements.

3. APPROACHES OF DATA MINING

- Data cleaning and preparation
Education data contains lot of irrelevant and unusable information's which must be cleaned.
- Tracking patterns



- The past and present performance can be traced by using the tracking patterns
- c) Classification
The process of classifying the data as Boy, Girl, Rural and Urban are used for efficient analysis.
 - d) Association
The association rule is formed for the condition based grouping of educational environment of rural and urban students.
 - e) Outlier detection
The extra ordinary information's if needed for the educational analysis are taken into consideration.
 - f) Clustering
The grouping of same performance level students is used for further sub analysis and report formations.
 - g) Regression
Regression analysis is used for the parameter wise sub structuring of huge amount of school data students.
 - h) Prediction
This is the main approach for the further actions to be taken for the betterment of the results of school students in both the rural and urban areas.
 - i) Sequential patterns
Students are categorized as gifted, average and under achievers (normally we don't use the term worst), are gathered from the sequential data information patterns.
 - j) Decision trees
The tree formation is the optimal visible report of student's performance in education towards rural and urban variations.
 - k) Statistical techniques
The statistical mean, median and mode along with the analytical approaches play the vital role in the study of school student's education system.
 - l) Visualization
A single visual representation dominates the collection of table data in order to reduce time and space consumption.
 - m) Neural networks
The improvement process of rural area student education is entirely developed through the proper utilization of neural network approach training.
 - n) Data warehousing
The art of storing and recording the data for further processing can be easily handled by data warehousing.
 - o) Long-term memory processing
Historical data plays the vital role in the improvement of rural education by maintain the proper record of data.
 - p) Machine learning and artificial intelligence
These two advanced technologies are used for the effective improvement based education development through proper algorithmic approaches with needed hypothesis [8].

4. LITERATURE SURVEY

In the field of education techniques "Data Mining" has also been used to analyze the curriculum and subject of the current research topics, as well as to analyze the student's performance [1]. There have been several investigations made under this proposed study object. For example, Bhardwaj used the Naïve Bayes algorithm to predict student performance based on 13 variables [2]. The results were used to build a model that is used to predefine the students who are at risk of failure and thus activate a guidance and counseling program. Varghese, Tommy and Jacob [3] in their research used the "K means" algorithm to cluster 8000 students based on five variables (input average in the University average scores of the tests / exams, average scores of papers, seminars notes and notes the work by frequency). The results showed a strong relationship between attendance and student performance. Gulati and Sharma [4] claim that knowledge through analysis by "Data Mining" can improve the education system in orientation, student performance and organizations management. Ayesha Mustafa [5] directed a study on evaluation, taking into account the evolution of learning and analysis of tests at the beginning and end of the courses.

5. ISSUES IN DATA MINING IN EDUCATION

- ✓ Unstructured data prediction
- ✓ Education Facility wise comparison searches
- ✓ Multiple alignment and reports construction
- ✓ Graduate sequence analysis and Illiterates findings.
- ✓ Rural urban overlay chart preparations.

6. IMPLEMENTATION IN RURAL URBAN AREAS

- ❖ Study and perform background analysis of locality and students family
- ❖ Investigate integral functional strategies for education environment
- ❖ Bridge the gap between computationally feasible and functionally relevant time scales
- ❖ Improve multiresolution state prediction.
- ❖ Combine classical and modern techniques in education environment.
- ❖ Sample larger sets of dynamical educational events and result matching's
- ❖ Realize interactive modeling
- ❖ Foster the development of data mining based education model.
- ❖ Train computational based practices in learning environments with physical concepts
- ❖ Bring experimental and computational groups in Rural and Urban closer together.

7. TOOLS PERFORMANCE

The following table illustrates Data Mining tools with its implementation scope for the betterment of education in Rural and Urban areas



Table-2: Tools for Data mining in education

Tool Name	Description
<u>Rapid Miner</u>	A data science software platform providing an integrated environment for various stages of data modeling
<u>Oracle Data Mining</u>	Oracle, the world leader in database software, combines its prowess in database technologies with Analytical tools
<u>IBM SPSS Modeler</u>	Modeler is a visual data science and machine learning solution, helping in shortening the time to value by speeding up operational tasks for data scientists.
<u>Knime</u>	Konstanz Information Miner is an open-source data analysis platform, helping you with build, deployment and scale in no time.
<u>Python</u>	Python is a freely available and open-source language that is known to have a quick learning curve.
<u>Orange</u>	Orange is a machine learning and data science suite, using python scripting and visual programming featuring interactive data analysis.
<u>Kaggle</u>	Kaggle although started as a platform for machine learning competitions, is now extending its footprint into the public cloud-based data science platform arena.
<u>Rattle</u>	The rattle is an R language based GUI tool for data mining requirements. The tool is free and open-source and can be used to get statistical and visual summaries of data.
<u>Weka</u>	Waikato Environment for Knowledge Analysis (Weka) is a suite of machine learning tools written in Java.
<u>Teradata</u>	A cloud data analytics platform marketing its no code required tools in a comprehensive package offering enterprise-scale solutions.

8. RECENT TRENDS

i. Multimedia Data Mining

This is one of the latest methods which are catching up because of the growing ability to capture useful data accurately. It involves the extraction of data from different kinds of multimedia sources such as audio, text, hypertext, video, images, etc. and the data is converted into a numerical representation in different formats. This method can be used in clustering and classifications, performing similarity checks, and also to identify associations.

ii. Ubiquitous Data Mining

This method involves the mining of data from mobile devices to get information about individuals. In spite of having several challenges in this type such as complexity, privacy, cost, etc.

this method has a lot of opportunities to be enormous in various industries especially in studying human-computer interactions.

iii. Distributed Data Mining

This type of data mining is gaining popularity as it involves the mining of huge amount of information stored in different company locations or at different organizations. Highly sophisticated algorithms are used to extract data from different locations and provide proper insights and reports based upon them [11].

iv. Spatial and Geographical Data Mining

This is new trending type of data mining which includes extracting information from environmental, astronomical, and geographical data which also includes images taken from outer space. This type of data mining can reveal various aspects such as distance and topology which is mainly used in geographic information systems and other navigation applications [9].

v. Time Series and Sequence Data Mining

The primary application of this type of data mining is study of cyclical and seasonal trends. This practice is also helpful in analyzing even random events which occur outside the normal series of events. This method is mainly being use by retail companies to access customer's buying patterns and their behaviors [10].

9. APPLICATIONS

- Future Healthcare
- Market Basket Analysis.
- Manufacturing Engineering.
- Customer Relationship management
- Fraud Detection.
- Intrusion Detection.
- Customer Segmentation.
- Financial Banking.
- Lie detection
- Corporate Surveillance
- Research Analysis
- Criminal investigation
- Bioinformatics

10. CONCLUSION

The detailed research survey in the field of data mining domain towards educational performance improvement in rural areas when compared to the urban education development shows that the higher level of impact in the field of data mining approaches with the cope up towards latest trends and systematic pathways for the improvement progress of several advanced strategies. The approaches for data mining dealt with the various levels of implications towards the selection strategies for the analysis and prediction of specific key areas in rural education focusing along with the factors in the development of educational environment for the proper teaching learning situation implementations. The tools performance and applications of data mining provides the several directions for the development of different



methodologies to implement the rural education domain in several real-time domains. In future this research will lead the direction of data mining application towards the educational upliftment of several rural areas in India.

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A STUDY ON CONSUMER'S SATISFACTION TOWARDS LG PRODUCTS IN COIMBATORE CITY

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ABSTRACT

LG is the global leader in home appliances industry also the fast growing industry also the fast growing industry in India. The company's success is depending on their steps taken towards customer needs and satisfaction. The paper primarily focuses on the consumer satisfaction towards LG home appliances. The project is entitled as "a study on the customer satisfaction towards LG PRODUCTS in Coimbatore city is carried out with the aim to determine the customer satisfaction. Customer satisfaction is considered to be the most important factor as it involves the retention of the customer and creates brand loyalty and also it forms a base for alternating prospective customers.

Typical elements that constitute customer satisfaction are value added service, difficulties in tariff customer care and timely response complaints. In this paper will deal with the problems faced by the LG company customer's issues. The data is collected as a survey and pin points the problems with proper solution and suggestions.

INTRODUCTION

The project is entitled as "a study on the customer satisfaction towards LG PRODUCTS in Coimbatore city is carried out with the objective to determine the customer satisfaction.

CONSUMER BEHAVIOR

The term consumer or buyer behaviour is often used rather loosely. In fact the consumer behaviour is a subject of human behaviour. This does not mean that all human behaviour is consumption oriented. Human behaviour refers to total process by which individuals, interact with their environment.

CONSUMER SATISFACTION

Firms aim to satisfaction to consumer through marketing concept. The firms try to help the buying in solving the problems better than competitors.

STATEMENT OF THE PROBLEM

It is a struggle that there is competition to the LG products in the market. There is less quality in its products comparing to others. Now in the present century new technologies introduces new brands of electronic items, every day the new arrival of electronic items has made the companies constantly engaged in gaining attention of the consumer like price, offer etc., so comparing to others LG has not

adopted the new technologies. The solution for improving the LG PRODUCTS is to be analysed.

SCOPE OF THE STUDY

This study focuses on how and why consumers make decisions to goods and services, consumer behaviours research goes beyond these facts of consumer behaviours and considers the use of consumer. Their subsequent evaluations. The dissatisfaction with a choice for an electronic product perhaps lead to many reason. The reason are continuous poor distribution problem poor influence of the existing consumer towards potential consumer and vintage products mix for prolong period, each of these possible consequence of convenience part purchase dissatisfaction. To give a solution for the above said problems of the study is under taken.

OBJECTIVES OF THE STUDY

Objectives of the study are as follows:

- To study the market potential towards LG Products
- To identify the brand performance of the respondents and to determine the important factors that influence the purchase of the LG Product.
- To know about the respondents satisfaction on various attribution of LG Product.
- To make suggestions and recommendation for improving organization.



RESEARCH METHODOLOGY

COLLECTION OF DATA

In the present study both primary and secondary data are made use of

• Primary Data

Primary data have been collected from the consumers through questionnaire. The Primary data was collected by interviewing the respondents. It was in the form of survey at different place.

• b) Secondary Data

Secondary data were collected from various books, website of his company

SAMPLING DESIGN

In order to undertake samples the researcher has classified the entire consumers are in socio-economic characteristics. Viz., age, sex, marital status, educational qualification, occupation and income.

Purposive random sampling method is adopted in this survey.

100 respondents were met in the problem of consumers of LG Product in Coimbatore city and issued questionnaire to them for data collection.

a) Sampling Units

The additional intonations' were collected from the user of LG Product For the study respondents those who are using LG Product

b) Sampling Size

The total respondents for the study were 100 the sample size is collected from different user model of a LG Product.

REVIEW OF LITERATURE

Samindra Nath (2017) - in his research paper explores the impact of country of origin image on brand equity of branded generic drugs. Brand equity of branded generics is examined from beginning to end analytical review. Nation of origin image is hypothesized to influence components of brand equity. A research was conducted among efficiently respondents, such as doctors of dissimilar categories in Kolkata, India. Outcome showed that country of origin representation had a optimistic and important effect on components of brand equity, resulting from factor analysis conducted on brand equity elements. The outcome also revealed that country of origin representation of branded generics considerably, but not directly, exaggerated brand equity through the mediating variables.

Keller (2017) - takes the consumer-based brand strength concept to brand equity, signifying that brand equity represent a circumstance in which the customer is well-known with the brand name and recalls some favorable, strong and exclusive brand relations. Therefore, Vol. 5 Iss. 2 Year. 2018 Int.

Jour. Sci. Tech. Huma , 53-58| 55 there is a discrepancy effect of brand knowledge on customer response to the promotion of a brand, where brand strength is a function of brand description.

Winters (2017) - relates brand equity to further value by signifying that brand equity involves the worth added to a product by customers relations and perception of a exacting brand name. It is uncertain in what way added value is being used, but brand equity fits the categories of product explanation and brand strength.

FINDINGS FROM PERCENTAGE ANALYSIS

- Majority (66%) of the respondents are from the age group of below of 25years.
- Majority (68%) of the respondents are unmarried.
- Majority (62%) of the respondents are under graduate.
- Majority (42%) of the respondents are private employees.
- Majority (52%) of the respondent's annual income are below Rs. 150000.
- Majority (59%) respondents are living as a joint family.
- Majority (37%) of the respondents likes to buy washing machine .
- Majority (64%) of the respondents prefer to buy their product from showrooms .
- Majority (66%) of respondents said that the price is affordable .
- Majority (38%) of the respondents got awareness about the product by advertisements.
- Majority (38%) of the respondents are been the customer of the LG product for 1-2 years.
- Majority (44%) of respondents said that the quality factor made them to buy the LG product.
- Majority (34%) of the respondent's buying decision are been influenced by chief wage earner.
- Majority (56%) of the respondent rates their experience of using the LG product as good.
- Majority (52%) of the respondents agrees that the brand name influences their purchase.
- Maximum respondent said that the satisfaction level towards the price, brand, quality, design and service are good.



DATA ANALYSIS

The study is an exploratory and empirical in nature. The collected data are classified and tabulated. Cross tabulation has been done represents consumers social - economic status and the behaviour. For analyzing the problem of LG Product consumer's percentile, percentage and other statistical tools are used. Scaling technique is used for measuring the attitude of LG Product.

SUGGESTIONS

From this survey we found that:

- Majority of the customers prefers to use washing machine so the level of sales volume can increase by launching showrooms in Center of towns and in Rural areas.
- By introducing new offers to reputed customers, they can increase the sales level of business.
- The quality of service in showrooms should be increased, so the investment level of customers on the LG products can be huge.
- Advertisement of this product can increase the reach in wide range among the customers.

LIMITATION OF THE STUDY

1. This study is restricted only to Coimbatore city.
2. Coimbatore city LG Product owners are considered as consumers.
3. This study period is only one year.

Hence, the findings and conclusions are based on this period only.

CONCLUSION

From the analysis and research concluded in Coimbatore city, it was made clear that the LG Product was the market leader. Britannia has to come up with more innovative promotional campaigns in order to gain more consumers. Since most of the respondents expressed a position note on factors like

product image, price, quality, taste, and energy. It is indeed the manufacturer's duty to maintain the above factors at the same time with a view to retain the top of the market. Because, all products are in need of the above five qualifications to survive the market. Surprisingly LG Product are have the above three qualifications with a good reputation. So, the manufacturer is required to concentrate on more of these. From the analysis and research concluded in Coimbatore city, it was made clear that the LG Product was the market leader. Britannia has to come up with more innovative promotional campaigns in order to gain more consumers. Since most of the respondents expressed a position note on factors like product image, price, quality, taste, and energy. It is indeed the manufacturer's duty to maintain the above factors at the same time with a view to retain the top of the market. Because, all products are in need of the above five qualifications to survive the market. Surprisingly LG Product are have the above three qualifications with a good reputation.

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ANTECEDENTS OF QUALITY EDUCATIONAL SERVICES AND SCHOOL PERFORMANCE OF INTEGRATED NATIONAL HIGH SCHOOLS IN THE DIVISION OF LAGUNA

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ABSTRACT

The objective of the study was to find out the quality educational services and school performance of integrated schools in the Division of Laguna, where in the administrators, teachers work collaboratively to have quality in educational services for the benefit of students involved in maintaining organizational routines and stability cited by (Dela Cruz, 2008).

Methodology

The study used descriptive design through questionnaire and collecting the secondary data from forty four (44) Integrated School in the Division of Laguna, thirty eight (38) school heads and three twenty five (325) teachers.

Result

The study found out that there is no significant relationship established and among antecedents of educational quality services with respect to school context, teachers competency and classroom atmosphere and school improvement plan in terms of access, efficiency and quality as to students NAT performance, students achievements, administrative performance rating and teacher performance rating of integrated public schools in the Division of Laguna, therefore the null hypothesis is partially accepted.

Research limitations/ implications

The generality of findings may be limited. The study is limited by lack of resources and only for the Integrated School in the Division of Laguna, so the researcher were not able to conclude that the same result will be given with other school

Originality/ Value

The research proved that the quality educational services and school performance showed to thier School Improvement Plan (SIP) the value of research heuristic.

KEYWORDS: *Quality, Educational Services, School Improvement Plan, access, efficiency, quality and Integrated Schools*

I. INTRODUCTION

Schools aim to provide children with knowledge, skills, and interpersonal competencies required for their development. Schools can offer learning experiences that a child may not obtain at home. However, despite the efforts of the government to give apt budget in education, a large number of students still fail to obtain minimum level of education even if it is already given for free.

It is on record that many leaders, institutions, organizations and individuals have various ways in spending large amount of their resources to ensure that the objective of providing quality education is achieved. Each school, together with the teachers do their part to give the quality of education to all learners.

Under Education for All National Review (2015) school based management is also a mechanism of decentralized governance where the

management of schools accountable to both internal and external stakeholders is lodged in the school level; and a framework for integrating various inputs such as teacher- training, classrooms, learning materials, nutrition programs, resource mobilization among others.

With regard to School Based Management (SBM) one of the objectives is to empower school heads to lead their teachers and students in continuous school improvement process, leading to higher learning outcomes, to achieve the objective, 90.76 percent of schools have school improvement plans.

The efficacy of education in human development can never be understated, education is fundamental to every constituent of the society irrespective of gender, physical, racial, economic, geographical, cultural or linguistic differences. Education is a nation's strength, a developed nation



is inevitably an educated nation as stated by Shaguri (2013).

While the focus of the government has largely been on school education, however, in the context of post-secondary and higher education, consistent and quality growth has become debatable, an overwhelming demographic division still persists in the access to quality higher education with several communities still remaining underrepresented, contracting the very objective of equity within the social growth of the country.

Educational leaders, like school heads facing the challenge for improving teaching and learning are to ensure academic success for the students where their role is to encourage teachers produce concrete results.

DepEd order no. 31 s 2012 policy guidelines on the implementation of grade 1 - 10 of the K to 12 basic education curriculum effective school year 2012 – 2013 includes the following design of curriculum, desired outcomes of grade 1 to grade 10 program, nomenclature/ learning area description, medium of instruction, time allotment, sample class program. Despite that, the educational setting will deliver the services with quality educational system.

Philippine basic education was improved through Republic Act 10533 also known as the enhanced Basic Education Act which was passed last May 2013 making the pre university and basic education from 10 to 13 years (Congress of the Philippines, 2011) the enhanced basic education program encompasses at least one (1) year of kindergarten, six (6) years of elementary, and six (6) years in secondary education four (4) years of junior high school and two (2) years of senior high school education. The Senior High School levels which offer a wide range of subjects from which students can choose a program leading to college or university entrance or a career in business or industry. The Philippines together with Myanmar, Malaysia, and Singapore have two years of senior high while the rest of Southeast Asia has three years from (SEAMEO & INNOTECH, 2012)

Peters (2008) defines education as the transmission of what is worthwhile to those who are committed to it be they children or adults. Learners are the center of learning in school who needed quality education for their future career.

Quality basic education which is accessible, relevant, and liberating is a dream for all Filipinos – a dream that can be easily achieved through joint efforts of the school and community. One of the many programs that enables DepEd to attain this goal is the implementation of the enhanced school improvement plan (DepEd Order No. 44 s. 2015).

The enhanced School Improvement Plan (SIP) is a

road map that lays down specific interventions that a school will undertake within a period of three consecutive school years. SIP strengthens shared governance by providing opportunities where the school and community stakeholders collaboratively plan and identify interventions to address priority improvement areas.

The Department of Education shall formulate the design and details of the enhanced basic education curriculum. It shall work with the Commission on Higher Education (CHED) to craft harmonized basic and tertiary curricula for the global competitiveness of Filipino graduates. To ensure college readiness and to avoid remedial and duplication of basic education subjects, the Department of Education (DepEd) shall coordinate with the Commission of Higher Education CHED and the Technical Education and Skills Development Authority (TESDA).

DepEd Order No. 26, s 2017 Addendum to DepEd Order No.51 s.2015 stated the implementation of the Senior High School (SHS) program in existing public junior high school (JHS) and integrated schools (IS's). Establishment of stand-alone public SHSs and conversion of existing public elementary and JHSs into stand- alone SHSs is also included.

According to UNICEF (2012), Philippines is a party and signatory to the Convention on the Rights of Children (CRC), the World Summit for Children (WSC), and the World Conference on Education for All (EFA). As such, it subscribes to the principles of the Child-Friendly Movement (CFM), one of the core strategic approaches of UNICEF's 5th Country Programme for Children (CPC 5) implemented from 1998 to 2004.

An education system in any country is established as a result of the determination of the broader aims of education which are in line with the aspirations of the country. A school in economic terms is an industry which transforms a given quality of inputs into required outputs.

Education for a National Review (2015) states that every Filipino should have an access to a complete quality basic education in order to provide the necessary basic education input, provide affirmative action to learners with special needs, engage the private sector in broadening opportunities for basic education and utilize technology in expanding the extent of basic education.

From the paper of Kwek (2010), students' retention and their academic performance are influenced by the service quality provided by the higher education institutions. The significant role of the students perceived service quality determining the students' retention and their academic performance in the respective higher education



institutions there is a need to identify what the determinants are for the overall students perceived service quality.

Also, Matshidiso (2008) stated that school head has direct responsibility of implementation of the curriculum policy at the school level with the guidelines of the different functions of a school head, according to RA 9155, to note that a principal has twelve functions in school that can give keys to manage the school accordingly wherein the most significant factors in affecting the student achievement is through understanding of their roles as instructional leaders according to Herrera (2010) in addition, Instructional leadership typically “creates positive environments where all students learn” by focusing on teachers” a series of activities in learning.

The curriculum reform has ensued series of conceptual and practical innovations on classroom teaching at the school level Li, Xiao Jun (2014).

The researcher highly favors that the antecedents of quality educational services are the school context where teachers and classroom wherein in the present study aim to determine the relationship of the antecedents of quality educational services on their school performance.

II. THEORETICAL FRAMEWORK

The Managerial roles school by Forbes (2011) of McGill University focuses on the activities or roles that managers do in an organization, analyzed the roles and activities of five chief executives and came to the conclusion that managers do not really act on the basis of the classical functions of management but instead engage in various roles but which may be summarized into interpersonal roles, informational and resource allocator.

The instructional function of a principal is to build the vision and monitor the curriculum as asserted by Armstrong (2007), the principal had more skill and knowledge than anyone in the building and would guide others how to teach. Much has changed in the schooling enterprise, but their expectations for the principal remain the same: He or she needs to be the educational visionary, offering direction and expertise to ensure that students learn and the principal should monitor the curriculum on how it is being implemented.

These theories are somehow related to the present study wherein the Department of Education is decentralized because of its bureaucracy but the main concern of this is the learner and the bottom part is that the teacher plays one of the significant roles in education with the supervision of the principal.

Participative Theory by Lewin (1976)

stated that a participative leader, seeks to involve other people in the process, including subordinates, peers, superiors and other stakeholders. However, as it is within the managers' urge to give or deny control to his or her subordinates, most participative activity is within the immediate team. Involvement in decision-making improves the understanding of the issues under those who must carry out the decisions. In this theory the school head and the teacher should be participative in the implementation of K12 curriculum to have a successful output that will be beneficial to the learners. Specifically during the strategic planning and decision making it should have a collaborative communication within the stakeholders.

Situational leadership when a decision is needed is a function of an effective leader who does not just fall into a single preferred style, Tannenbaum and Schmidt (1958) identified three forces that led to the leader's action: the forces in the situation include the forces in their followers and also forces in the leader. This recognizes that the leader's style is highly variable, and even such distant event as a family argument can lead to the displacement activity of a more aggressive stance in an argument than usual. Maier (1963) noted that leaders not only consider the likelihood of a follower accepting a suggestion, but also the overall importance of getting things done. Thus in critical situations, a leader is more likely to be directive in style simply because of the implications of failure.

According to Mitchell (2016), the role of the instructional leader should also be expanded to incorporate a shift away from just “management,” or working in terms of administrative tasks, and move toward an emphasis on leadership. In order to achieve this objective, a strong principal with solid ideas is not enough; success will require a redefinition of the role of the principal. Barriers to leadership must be removed by reducing emphasis on bureaucratic structures and procedures. Relationships must be reinvented.

The dramatically different role of the school principal as instructional leader has been described as one that must focus on building a vital community of learners. It also requires shared decision-making and, in a sense, getting back to basics. It will require the leveraging of time, the support of ongoing professional development for staff members, creating a climate of integrity, using resources to support a diverse educational game plan and, lastly, plenty of room for inquiry and improvement.

III. METHODOLOGY

The study used descriptive design through questionnaire and collecting the secondary data from forty four (44) Integrated School in the Division of



Laguna, thirty eight (38) school heads and three twenty five (325) teachers.

Specifically, it sought answers to the following questions:

1. What is the extent of school context for quality educational services of integrated schools in terms of: school leadership; institutional Goal; professional community; discipline, and; academic environment?
2. What is the mean level of teachers' competency for quality educational services of integrated schools in terms of: Academic skills of teachers; teachers assignment; teachers experiences, and; professional development?
3. What is the extent of classroom atmosphere for quality educational services of integrated schools in terms of: Pedagogy; technology, and; class size?
4. What is the degree of school improvement plan of integrated schools relative to: access, efficiency, quality?

Is there a significant relationship established and antecedents of educational quality services with respect to school context, teachers' competencies and classroom atmosphere and school improvement plan in terms of access, efficiency and quality as to students' NAT performance, students' achievements, administrative performance rating and teacher performance rating of integrated public schools in the Division of Laguna

IV. RESULT

1. Extent of school context for quality educational services of integrated schools

In terms of school leadership, designing and maintaining the organizational environment to ensure the effective and efficient function of people toward the attainment of organizational goals way found out to be highly *extensive*. Quality of educational services got (owm's 4.68, 4.36); whereas, the goal as a *highly extensive* interpretation the maintenance of a positive attitude for achievement (owm's= 4.53, 4.35); professional community as vocally declared by both school heads and teachers regarding the latter's *very high* level of performance for quality educational services as the aftermath of the further enrichment of their professional development in building of their valuable work skills and improve individual performance by increasing knowledge and enhancing productivity as compounded by management and leadership training, seminars, conferences and e-learning platforms in their rank and file (owm's=4.45, 4.29); discipline by always putting influence for a more *highly extensive* guidance made on the students' behaviour in setting limits to help them learn and take care of

themselves, and other people around (owm's=4.48,4.40);

Lastly, the academic environment which is their utmost concern for levelling up their teachers' instructional performance in motivating very high their students to complete their level of work in order to succeed academically in the said integrated schools in the aforementioned division (owm's=4.42, 4.39).

2. Mean level of teachers' competency for educational services of integrated schools

In terms of academic skills motivating very high their students to complete their level of work in order to succeed academically (owm=4.42, 4.39); assignment very highly knowledgeable relative to teachers' assignment in conformity with R.A. 4670, verily known as the Magna Carta for Public School

Teachers (owm's=4.53 and 4.35); experiences by putting across the latter's performance as certainly very high due to the knowledge of the subject for them to have a strong grasp of the material resources they are teaching (owm's=4.50, 4.38);

On the other hand, professional development got an interpretation of *very high* building their valuable work skills and improve individual performance by increasing their knowledge and enhancing productivity as compounded by management and leadership training, seminars, conferences and e-learning platforms geared toward improvement of their interpersonal skills and enabling them to collaborate and accelerate change with school staff, personnel and employees in the said schools (owm's=4.45, 4.29).

3. Extent of classroom atmosphere for quality educational services in integrated schools

In pedagogy wherein both school heads and teachers claimed that learning can be *highly enhanced* by listening to the lectures as one of the main activities in the classroom. Body language, greeting, socializing and face-to-face contact with technology based as associated with the stretching-the-mold approach get (owm's=4.31, 4.25); technology by reporting the extensive use of computers in the classroom to assign work to students and study groups in order to enhance learning the complicated applications and also make the teacher's job easier (owm's=3.73, 3.92);

With regards to the class size as there has been a continuing increase in the number of enrollees' yearly entry in their respective schools for them to fully enhance more budget allocation for additional classrooms, otherwise the booming of class sizes would certainly serve as blunder to quality educational services in the said division (owm's=3.56, 3.84).



4. Degree of school improvement plan of integrated schools

Relative to access to enrolment the highest of which was registered during the school year 2017-2018 with the *highly* improved enrolment of 251.47 thousand (M=114.60, efficiency by means of drop-out rate in school year 2015-2016 where it was *moderately high* as recorded by 6.88% of the total enrolment; cohort rate in school year 2017-2018 the delivery of education services has been highly improved throughout, and completion rate which was recorded during school year 2017-2018 registered the completed rate of 100% proportional to the number of graduates in a certain level to the total annual enrolment (M=96.09);

With regards to the quality as to students' NAT performance by helping them answer the test comprehensively for a high passing rate given annually; and students' achievements during school year 2015-2016 incurred an average performance in Sports (M=3.14, SD=1.002) as well as in Journalism (M=2.75); and administrators' performance ratings were *excellent* during school year 2017-2018 as evidenced by 94.24% or 41 integrated national high schools which spearheaded in the delivery of quality educational services in the entire division of Laguna; and teachers' performance ratings declared *satisfactory* during school year 2017- 2018 as evidenced by 4.65% as the highest (M=3.85).

5. Relationships between and among the variables,

The following r values registered the positive and significant correlations: schools and completion (r=0.589); educational goals and access in terms of enrolment (r=0.251), drop- out rate (r=0.47) as well as cohort rate (r=0.344); professional community and completion (r=0.393); discipline and drop-out rate (r=0.393); students' discipline and their completion rate (r=0.423); academic environment and access to enrolment (r=0.488) as well as cohort rate (r=0.485);

Teachers' academic skill and students' completion rate (r=0.378); teachers' experiences and drop-out rate (r=0.414); teachers' professional development and access to enrolment among students (r=0.363) and alternatingly with cohort rate (r=0.456);

With regards to pedagogy and access to enrolment (r=0.348) as well as students' reduction of drop-out rate (r=0.348); technology and cohort and completion rates as evidenced by (r=0.293), and (r=0.389); in class size and access (r=0.227).

Significant correlation between school leadership, educational goal, professional community, discipline, and academic performance as well as students' NAT performance (r=0.559), (r=0.603), (r=0.627) , (r=0.711) and (r=0.659)

educational goal and students' achievement (r=0.530) and students' NAT performance and their achievement in terms of journalism, science trade and fair, festival of talents, sports as well as NC II holder (r=0.603), and (r=0.530); teachers' performance established positive and significant correlation with students' NAT performance

Student achievement (r=0.454), (r=0.337); teachers' assignment, experience and professional development are positively and significantly correlated with students' NAT performance (r=0.709), (r=0.512), and (r=0.666); Positive and significant correlation have been established between classroom atmosphere in terms of pedagogy and students' NAT performance (r=0.553); between technology and students' NAT performance (r=0.653) as well as their achievement (r=0.349); class size and NAT performance (r=0.680)

Positive and significant correlation between school context in terms of school leadership and administrators' performance ratings (r=0.640) as well as teachers' performance ratings (r=0.384); educational goals established significant correlation with the administrators' and teachers' performance ratings (r=0.282), (r=0.274); positive and significant correlation between school discipline and teachers' performance ratings (r=0.404);

The teachers' assignment, experiences and their professional development established significant and positive correlations with their performance ratings (r=0.325) and (r=0.274) as well as administrators' performance ratings (r=0.320) as well as the teachers' performance rating (r=0.404);

Classroom atmosphere in terms of pedagogy and class size established the significant and positive correlations with teachers' performance ratings (r=0.399) and (r=0.499) as well as administrators' performance ratings (r=0.342;p=0.035) respectively.

V. CONCLUSIONS

Based on the summary of findings presented above, the following conclusions were drawn: There is no significant relationship established and among antecedents of educational quality services with respect to school context, teachers competency and classroom atmosphere and school improvement plan in terms of access, efficiency and quality as to students NAT performance, students achievements, administrative performance rating and teacher performance rating of integrated public schools in the Division of Laguna, therefore the null hypothesis is partially accepted.



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A STUDY ON FINANCIAL PERFORMANCE OF HDFC BANK

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ABSTRACT

Banks functions the entire monetary and financial system to ensure smooth operations in India. It acts like lifeblood-money that supports and fosters growth in all the industries in the country. In banking sector, the growth of the bank is measured by the increase in the number of banks" branches, deposits, credit, etc.. The current investigation manages the examination of "A STUDY ON FINANCIAL PERFORMANCE OF HDFC BANK". The investigation utilized six years of Axis Bank auxiliary information and fundamental goal is to discover the monetary presentation of the business that can be useful in discovering the development angles. This examination was carried under the time of six years 2015-2020 of monetary record and benefit and misfortune account. This ratio establishes relationship between reserves and capital.

KEY WORDS: Financial performance, Growth, HDFC BANK, Ratio analysis

INTRODUCTION

Financial performance is that the process of measuring how effectively a corporation utilizes its assets from primary mode of business to boost incomes it also measures organizations whole financial health over a specific period of your time . Financial performance of the organization deals with the financial strength and weaknesses of bank accurately establishing a relationship between the record and earnings report . This process wont to clearly understand the expansion of longterm and short-term of bank. There are several ways to research data the researcher used ratio analysis during this research. This analysis also helpful determines the credit worthiness of the bank to gauge the market position among the competitors. Bank is extremely important a part of our country. There are many sorts of Bank like, full service bank , Public Sector Bank, Private Sector Bank, Co-operative Bank etc. Private Sector Bank has two types. First is Old Private Sector and second is New Private Sector Bank. HDFC Bank is New Private Sector Bank. the complete sort of HDFC Bank is that the development Finance Corporation. In 1994 HDFC Bank was incorporated, with its registered office in

Mumbai, India. Its first corporate office and a full service branch at Sandoz House, Worli was inaugurated by the then Union minister of finance , Manmohan Singh. As of June 30, 2016, the Bank's distribution network was at 4,541 branches and 12,013 ATMs. Here I discuss about Financial Performance of HDFC Bank in India with tool of Ratio like Current Ratio, Total Assets Turnover Ratio, Quick Ratio, Credit Deposit Ratio etc.

STATEMENT OF THE PROBLEM

After some HDFC Bank customers complained via social media that they were unable to access bank accounts,the bank has said it's looking into the difficulty . a number of our customers face intermittent issues while accessing net banking or mobile banking app. We are looking into it on priority for resolution. We apologise for the inconvenience and request you to undertake again after a while.

OBJECTIVE OF THE STUDY

- ✓ To identify the financial strength and weakness of the HDFC Bank.
- ✓ To analyses the profitability, liquidity and



- ✓ solvency position of HDFC Bank. To offer suitable suggestions for improving

performance of the bank.

RESEARCH METHODOLOGY

Source of Data	Secondary data
Period of Study	2015 to 2020
Framework of analysis	Financial Statements
Tools and Techniques	Ratio analysis

STATISTICAL TOOLS

A number of methods are often used for the aim of study of monetary statement. These also are termed as techniques or tools of monetary analysis. one among these enterprises can choose those techniques which are suitable to its requirements. The principal techniques of monetary analysis are:-

- Comparative Financial Statement.
- Ratio Analysis.

REVIEW OF LITERATURE

Kaushik (1995) studied the social objectives and profitability of public and personal sector banks during the amount 1973 to 1991. He compared the general public and personal banks with the assistance of varied profitability and productivity indicators through ratios, average, correlation, regression and correlational analysis . He found that public sector banks were having lower profitability as compared to non-public sector banks. Further, he found that the varied productivity indicators showed an increasing trend during the amount of study for all the banks though the rise was much higher within the case of personal sector banks. He concluded that the profitability of public sector banks showed a declining trend thanks to social objectives not due to cost inefficiency and low productivity. He suggested that productivity might be increased with the assistance of innovative banking, improved technological and managerial knowledge, well-educated and trained manpower and infrastructural facilities.

.N. S. Varghese (2000) is of the opinion that new generation private sector banks with their latest technology are ready to implement e-banking and are highly preferred by investors within the stock exchange . He also points out that prominent new generation private sector banks like HDFC and ICICI have entered into internet banking through which greater convenience is obtainable with lower transaction cost..

Ram Mohan TT (2003) , in his paper ‘Long run performance of public and personal sector bank stocks’ Vol 37, has made an effort to match the three categories of banks-Public, Private and Foreign-using Physical quantities of inputs and outputs, and

comparing the revenue maximization efficiency of banks during 1992-2000. The findings show that PSBs performed significantly better than private sector banks but not differently from foreign banks. The conclusion points to a convergence in performance between public and personal sector banks within the post-reform era, using financial measures of performance.

FINDINGS

- The current ratio of the bank was remains constant for the 6 years for 2014-2015 to 2019-2020 as 0.99.
- The liquid ratio of the corporate was highest within the year 2018-2019 and therefore the lowest value of ratio is 0.67 within the year 2017-2018.
- Absolute liquid ratio of the corporate was highest within the year 2017-2018 and therefore the lowest within the year 2016-2017 and 2018-2019

SUGGESTIONS

- The bank should increase the margin of profit after the acquisition the margin of profit it’s continually lower then following years.
- The bank should increase the margin of profit after the acquisition the margin of profit it’s continually lower then following years.
- The return on asset in HDFC Bank is in decreasing trend. The HDFC Bank should take necessary steps to enhance the return on asset.
- Before acquisition the borrowing is low but within the year 2010 the borrowing level of HDFC Bank it’s very high so HDFC Bank concentrates during this regard

CONCLUSION

A securities analyst can adopt the subsequent tools for analysis of the budget . These also are termed as methods of monetary analysis. The banking sector is one among the core sectors within the economic development of India. therefore the purpose of the study is to consider financial performance of HDFC



bank. This study attempted to seek out whether HDFC BANK have performed well or not. the most objective of the study is to gauge the danger exposure of the bank within the last five years and to predict the longer term performance of the bank.

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A STUDY ON CREDIT CARD UTILIZATION OF CREDIT CARD WITH REFERENCE TO COIMBATORE CITY

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ABSTRACT

The study is to examine the consumer level of satisfaction towards using credit card in Coimbatore city. The data has been collected by survey methods through questionnaire with 120 respondents. Tools used in this project were simple percentage analysis, likert scale analysis and rank analysis. On the basis of study, it is found that the customers are using credit cards often in shopping. Customers expect low rate of interest. These are some findings of the study. Thus the study concluded that customers are mostly satisfied of using credit card often in shopping.

KEY WORDS: Customer satisfaction, Credit card utilization.

1. INTRODUCTION

A mastercard may be a method of payment which enables the cardholder to get goods or service without paying cash up front. Having a mastercard may be a convenient thanks to buy almost anything but it's important to recollect that a mastercard may be a sort of unsecured loan.

Credit cards are fundamentally different from the opposite payment method therein they involve extending mastercard instead of drawing on an existing on a store of funds.

2. STATEMENT OF THE PROBLEM

In Morden days a plastic money service is of greater utility to the society altogether ways and means. It gives benefits to the customer and it

creates competition among bankers. because the use of plastic money is increasing day-to-day, it's important to review the customer preference towards use of plastic money in Coimbatore. The researcher has attempted to review these problems, other associated problems of not only the banks but also the mastercard holders and therefore the members establishments. Hence, the study.

3. OBJECTIVE OF THE STUDY

- To study about the customer awareness about credit card.
- To measure the level of satisfaction of credit card holder.
- To study about problem faced by customer.

4. RESEARCH METHODOLOGY

Source of Data	Primary and Secondary data
Sampling technique	Convenient sampling
Sample size	120 respondents
Tools and Technique	Simple percentage analysis, Likert scale analysis, Ranking scale analysis

5. STATISTICAL TOOLS

- Simple Percentage Analysis
- Likert Scale Analysis
- Ranking Scale Analysis

6. REVIEW OF LITERATURE

Nagaraju K (2017), the present study made an attempt that consumer awareness and preparation about credit cards: a preliminary study. For this purpose the researcher used the primary data, the required data has been collected by using structured questionnaire and statistical tools like, Mean, Percentage and chi Square have been used for the purpose analysis. Finally the study reveals that, the scenario of credit cards during present day is very significant many card holders surrender their credit cards the banks customer prefer cards. The credit cards too help credit them avoid carrying cash and enables with drawl of cash through ATM and they need not to be afraid of falling into debt trap as in the case of credit cards.

R.Maheswari, T.Palaneeswari (2017), customer satisfaction in e-environment is determined by the website of the bank, efficiency of the bank,

competency of the bank and information provided by the bank. Due to the complexity in the usage of credit cards, it is necessary to make the customer to know how to operate the credit cards for specific purpose. In order to facilitate the customer to carry the cards with them, effective protective measures must be taken to protect the cards against operational and security risk.

Athena Joy. (2015), in her study, "A Study on Customers' Perception towards Credit Card", have concluded that occupation type, marital status and type of card has no association whereas annual income has direct impact on frequency of use of credit card in Lottayam district. Income found to be most important factor not only for selection but also use of credit card in Lottayam district.

7. TABLE

7.1 SIMPLE PERCENTAGE ANALYSIS

Percentage is used to find out the percentage value of all the entirely different question used in findings comparison between two or more series of data.

FORMULA

$$\text{Percentage Analysis} = \frac{\text{No. of Respondents}}{\text{Total No. of Respondents}}$$

TABLE 7.1
Often Credit Card Usage of Respondents

Particulars	No. of Respondents	Percentage
SHOPPING	60	50
RESTAURANT	21	17.8
FUEL	7	6
OTHERS	32	26.2
TOTAL	120	100

INTERPRETATION

The above table 4.1.11 shows that, 50% use credit cards for shopping; 17.8% use credit cards for

restaurant; 6% use credit cards for fuel; 26.2% use credit card for other usage.

The majority of the respondents use credit card for shopping (50%).

7.2 RANKING ANALYSIS

Customer Overall Satisfaction towards Credit Card

S.No	Factor	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Total	Rank
1	Does customer care respond you at all times	65(5) 325	28(4) 112	11(3) 33	10(2) 20	6(1) 6	496	1
2	Credit card is cheaper	36(5) 180	38(4) 152	26(3) 78	14(2) 28	6(1) 6	444	5



3	Beneficial to use	48(5) 240	27(4) 108	25(3) 75	15(2) 30	5(1) 5	459	3
4	Satisfied with the privacy of transaction	47(5) 253	30(4) 120	20(3) 60	15(2) 30	8(1) 8	471	2
5	How would you rate your bank credit card	43(5) 215	33(4) 132	20(3) 60	16(2) 32	8(1) 8	447	4

INTERPRETATION

The table shows that out of 120 respondents, customer care respond you all time in the rank 1, satisfied with the privacy of transaction in the rank 2, beneficial to use in the rank 3, and rank 4 for the bank credit card, and credit card is cheaper in the rank 5.

INFERENCE

This is resulted that customer care respond all time is in the rank 1 of the credit card.

FORMULA

Likert scale = $(FX)/\text{Total number of respondents}$
 F = Number of respondents
 X = Likert scale value
 (FX) = Total scale

7.3 LIKERT SCALE ANALYSIS

A Likert scale analysis is a method of meaning attitude. Ordinal scale of responses to a question or statement, ordered in hierarchical from strongly negative to strongly positive. Used mainly in behavioural science, in Likert's method a person's attitude is measured by combining (adding pr averaging) their responses all items.

Table Showing High Interest Rate on Credit Card

Factors	No. of Respondents (F)	Likert Scale Value (X)	Total Score (Fx)
STRONGLY AGREE	64	5	320
AGREE	31	4	124
NEUTRAL	13	3	39
DISAGREE	9	2	18
STRONGLY DISAGREE	3	1	3
TOTAL	120		504

Likert scale = $\sum (FX)/\text{Total number of respondents}$
 = $504/120$
 = 4.2

INTERPRETATION

The likert scale value is 4.2 which is greater than mid value (3) which shows that the customer are agree with the high interest rate on credit card.

FINDINGS FROM PERCENTAGE ANALYSIS

- Majority (5.3%) of the respondents are female.
- Majority (66%) of the respondents are between 21 – 30 years.

- Majority (72.5%) of the respondents are unmarried.
- Majority (60.8%) of the respondents are Graduate.
- Majority (31%) of the respondents are doing other jobs.
- Majority (35.9%) of the respondent's income between 20,000 – 50,000.
- Majority (48.3%) of the respondent's family members are 4.
- Majority (33.3%) of the respondents are in rural area.



- Majority (41.7%) of the respondent's credit card knowledge from friends and family.
- Majority (30%) of the respondents are using VISA Credit card.
- Majority (50%) of the respondents are using credit card for shopping.
- Majority (47.9%) of the respondents are agree that credit card is best substitute for cash.
- Majority (37.8%) of the respondents are using other bank credit card.
- Majority (60.8%) of the respondents are satisfied the service provided by bank.
- Majority (34.7%) of the respondents are satisfied the fees for credit card.
- Majority (50.9%) of the respondents are spend between 2000 – 5000.
- Majority (47%) of the respondents are being lifetime credit cardholder.
- Majority (50.4%) of the respondents are use domestic credit card only.

FINDINGS FROM LIKERT SCALE ANALYSIS

- The Likert scale value is 4.2 which is greater than the mid-value (3) which shows that the customer satisfied with the high interest rate on credit card.
- The Likert scale value is 4.12 which is greater than the mid-value (3) which shows that the customer satisfied with the more security issued by bank.
- The Likert scale value is 4.09 which is greater than the mid-value (3) which shows that the customer satisfied with the proper record made by bank.
- The Likert scale value is 3.88 which is greater than the mid-value (3) which shows that the customer satisfied with the credit card is more important.
- The Likert scale value is 3.86 which is greater than the mid-value (3) which shows that the customer satisfied with the credit card will cover risk.

FINDINGS FROM RANK ANALYSIS:

- Customer care respond the people all time is in rank 1 of the customer overall satisfaction towards credit card.
- Facilities are provided in more No. of expenses than other bank is in the rank 1 of the customer rating towards banking service credit card.

8. SUGGESTIONS

- Now a days frauds are increased using credit cards. in order that they must take some initiative to enhance their security.

- Interest rate for the quantity used is extremely high. If the purchasers paid on time they also get more interest. Hence steps should be taken to scale back some rate of interest .
- Credit must need some advanced updations for straightforward access and to scale back the frauds.
- Updations in offline transactions are got to improve.
- Some of the Indian credit cards aren't accepted in foreign countries so extend the world of using credit cards.
- Because of having the mastercard the worth decision changes and that they purchase beyond their capacity.

9. CONCLUSION

Today credit line is within the sort of a mastercard developed very quickly and has come up as most ordinarily held economic tool by various households everywhere the world . The several comforts that credit cards provide such as-cashless dealings, tele-purchases and interest shopping, the pliability of deferring payment to a future date allows customers to affect temporary financial crunch. Also the dissatisfaction level amongst consumers is being very high, escalating rather due to high interest rates. Credit cards provide a convenience to consumers, acting as both a way of payment and a versatile credit instrument.

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VIRUSES ARE CUTE NOT RUDE

Cute Viruses

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 Egypt Qalyubia

ABSTRACT

Bad information spreading is one of the biggest problems that the world faces. For example, at this time, lousy information is spreading about covid-19 vaccines, but it is the key to end pandemic; it is the analogy that All of the people think that all viruses are harmful and if they heard word virus they become too scarry, but this something is false. So this paper aims to analyze this problem by showing the harmful viruses that infecting us and it is the mechanism in addition to the good viruses that do not infect us but help us to live, and it is the mechanism, discuss specific topics that support the idea to make them get the conclusion before they read it. (Abstract)

KEY WORDS: Viruses, Cute Viruses, Bad Viruses

I. INTRODUCTION

Viruses are this small thing that is not alive until it enters a living organism. It uses it to reproduce, eat, and everything viruses have a mechanism by which they enter the host cell and use it. Most people think that this condemns viruses, and they become afraid of them. It cannot be Langerhansed that this is a scary thing like HIV or covid-19 these images are present in figures 1 and two, respectively, but these viruses are too small compared to the total amount of viruses the rest of these viruses, people cannot live without it. These viruses enter the inhale of air while eating, live in our bodies, and some sea creatures cannot live without their presence. So why are people afraid of these microorganisms? In the next section, viruses' mechanisms will discuss, but now, there are some infections caused due to bacteria. However, the thing that is not known is that there is a type of virus that kills this bacteria, and we may use it to make medicines. This type is called "bacteriophage," as shown in figure (3), so not all viruses are harmful as you think, and as has written in the title, viruses are cute, not rude.

Figure(1) "covid-19" figure (2) "HIV" figure(3) bacteriophage



II. MECHANISMS OF VIRUSES

Viruses vary In function, so it varies in mechanisms; in this paper, three types of mechanisms with three examples will discuss because people must know how viruses are work before they were afraid of them or do not be afraid.

Mechanisms of good viruses will be the beginning of our discussion, but before this somethings in virus structure must be known like:

1- Glycoproteins "envelope proteins" on the surface of the coated viruses -coated viruses are viruses that are coated by plasma membrane- that is bind to receptor proteins on the host membrane to facilitate its entry. As shown in figure(4)

2- Viral genome is something where all DNA of the viruses are present -some viruses contain RNA instead of DNA-. as shown in figure(4)

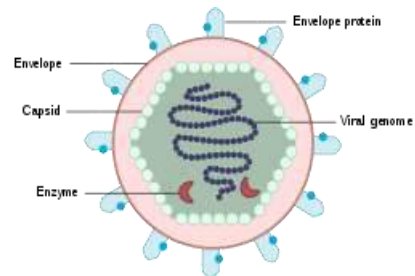


Figure (4) virus structure

Bacteriophages have differed in structure and shape, as shown in figure(5) that it contains some different things like the fiber tails used to enter the host cell by injecting int's DNA through it.

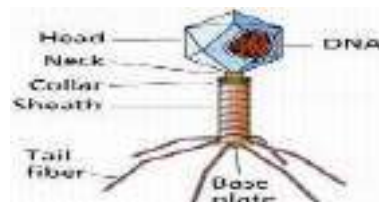


Figure (5) "bacteriophage"

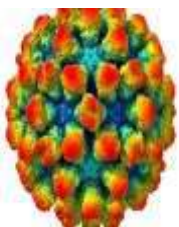
Now the principles of viruses mechanisms will be discussed:

1. Virus particles are too large to diffuse across the plasma membrane, and thus entry must be an active process.



2. Virus particles bind to receptors on their host cells to initiate entry.
3. The cell receptor may determine the host range and tissue tropism of the virus.
4. Viruses may bind multiple distinct receptors, and individual cellular proteins may be receptors for multiple viruses.
5. Enveloped virus particles bind via their transmembrane glycoproteins; nonenveloped virus particles bind via the capsid surface or projections from the capsid.
6. Attachment proteins may not lead to internalization and viral reproduction but may still be necessary for dissemination in the host.
7. Some viruses uncoat at the plasma membrane, while others do so from intracellular vesicles.
8. Many viruses enter host cells by the same cellular pathways used to take up macromolecules.
9. The entry mechanism used by a particular virus may differ depending on the nature of the target cell.
10. Viral particles and subviral particles depend on the cytoskeleton to move within an infected cell.
11. Binding of virions to cell receptors may activate signaling pathways that facilitate virus entry and movement or produce cellular responses that enhance virus propagation and affect pathogenesis.
12. For viruses that undergo replication in the nucleus, import can occur either through use of the nuclear pore complex or during cell division, when the nuclear membrane breaks down.

These are the entry principles of any viruses by arranged steps, but they can be modified under each circumstance. Now, what differentiates the excellent virus from the harmful virus? The difference is why these viruses are present in the host? Or what they do in the host cell? For example, the human body may get infected by the late herbs virus; this virus does not harm humans, but it helps natural killer cells- a specific type of white blood cells- to identify cancer cells. Another example is that norovirus in mice gut that protects it as when mice get antibiotic the protective bacteria were killed leading to make the mice oversensitive to gut infection but by the presence of this virus it protects its host from getting an infection. Norovirus and late herbs are shown in two figures 6 and 7, respectively.



Norovirus Image Figure(6)



Herbs Virus Image Figure (7)

Us as they act as a protective phage as they are found in the mucus membranes lining the digestive system, respiratory tract, and reproductive tract; they found there to destroy and kill bacteria to protect us, so they called protective phage. These phages have been used to treat many essential diseases caused by bacteria like dysentery and sepsis caused by *Staphylococcus aureus*, salmonella infections, and skin infections.

This phage is too vital for people as recently a teenager had reported close to death due to a kind of bacteria that resists antibiotic when phages used to treat it, he successful get well.

However, there is a harmful type of these viruses like the human immune deficiency virus -HIV- that attacks human immune system cells. By the time it leads to AIDS, a disease where the human become without an immune system. of course, it is too dangerous because that when human become without an immune system, he will be subjected to many diseases such as tuberculosis-TB-. also he becomes easy to get ill with any infection. The something that makes this virus is too dangerous is that until this moment, there is not any treatment or vaccine have clearly but for it.

In general, the something that made these viruses dangerous is that viruses are always in mutation and this made it hard to treat as the idea of treating any virus is that we make a vaccine made our receptor does not bind to viruses, but when we discover this receptor and make the vaccine it becomes mutated and binds to a new receptor.

Another example of these harmful viruses is the recently spread virus covid-19 from the coronavirus family; this virus enters our body and causes many problems to our respiratory system. It may lead to death as it increases our body temperature, which is the most dangerous symptom. As if the temperature does not decrease, it will cause a protein unfolding leading to death. It does not make only this but also decreases oxygen present in the blood where if it is not fast treated, it will also lead to death and many other flu symptoms.

There is a hazardous virus, but they are few comparing with the good viruses that live with human bodies and animals, and they cannot live without it.

III. VIRUSES THAT LIVING ORGANISMS CAN'T LIVE WITHOUT IT

Not only people that are not aware of good viruses but most scientists works on pathogen viruses. Recently a few scientists have worked on the good viruses that, without them, are present in the human body, plants, animals, and universe; the world maybe have an unbalanced ecosystem which may lead to the end of the universe. As it has been estimated that 380 trillion viruses are inhabiting the human body, these viruses do not harm humans, but they help them survive still, help the immune system kill the pathogen, help their intestine kill microbes, and kill microbes many other ways were they help humans. Viruses are not suitable for humans only as Researchers studying insect pests also have found that viruses are essential for species population control. If a particular species becomes overpopulated, a virus will come through and through them out.



Also, some types of viruses help cows and other animals to help digest cellulose as their intestine cannot digest them as they turned cellulose that enters through the grass into sugar, then in its body, it turns to milk and food.

In another case study, scientists have found that certain viruses are found in jalapeno seeds. They pass through the seed leading to prevent their insect attract which in order help to keep the plant healthy, and in general, insects attract to plants that are without viruses.

Also, there is a virus called a good boy virus -GB virus- you can see it in figure(8) it is a lymphotropic human virus it is infection does not cause any disease, but it has many benefits as it helps the immune system against HIV as they always alert T-cells against the virus -HIV-. Moreover, help the body fight against this virus; in some searches, people with this virus did not die when they become infected with HIV.

Moreover, as mentioned previously, the importance of phages in protecting our body and right now, many researchers are developing many treatments using these phages and later herbs that play a central role in our body. Which have previously discussed also

The Norovirus in mice intestine, which has a significant role all of this virus living organisms cannot live without it.



Figure(8) good boy virus

IV. VIRUSES THAT SEE CREATURES CAN'T LIVE WITHOUT IT

It has been estimated that there are 1030 bacteriophage particles in the world's water; all of them help marine creatures to survive against bacteria. They also control the number of bacteria in the ocean, which leads to control of the ecosystem. Also, phages are considered the primary regulator of bacteria in the ocean. If viruses or phages disappeared, some bacteria species might be exploded, and others may be stopped growing, ultimately. About 90% of ocean living materials by weight are microbial. Those microbes produce about half oxygen on the planet. These phages kill about 20% of ocean microorganisms and about 50% of ocean bacteria. Also, there are certain viruses that whales cannot live without it. So not only the earth organisms that need viruses to live. However, marine creatures need it to survive also Viruses play essential roles in biogeochemical nutrient cycles and act as genomic reservoirs in marine and freshwater environments also Five to 25% of the carbon is fixed by primary producers is estimated to

enter into the microbial loop via virus-induced lysis at different trophic levels in aquatic environments.

V. VIRUSES THAT INFECT LIVING ORGANISMS

Because not all things are good and there is not a perfect thing in this life, some terrible viruses harm the living organism, but before I begin to discuss them, here is something that must be known there is viruses more than the stars in the universe. If you begin to count how many are wrong, you will discover that they are too small compared to the total amount of viruses. The rest -the greater- are the good viruses.

Now let us begin to discuss the most famous dangerous viruses; a virus that makes people without immune system human immune deficiency -HIV- this virus target immune cells, especially CD4 blood cells, which contain t-helper cells, macrophages, and dendritic cells. They named so because it contains CD4 receptor protein it binds to this receptor by a glycoprotein found on its envelope called gp120 also needs another receptor on the host, but this is a coreceptor protein it needs one or two of it which are cxcr4 and ccr5. Some humans have a genetic mutation called heterozygous resistance to this virus as they do not contain coreceptor proteins. It begins to infect immune cells in the lymph nodes it mainly infects dendritic cells in it then it begins to transfer to all cells in the lymph nodes the virus resume it is spreading, and while doing this, it kills T-helper cells on his way it still doing this, and the percentage of T-cells decrease In the blood until it reaches a certain percentage which is 200-500 T-cell/mm³ at this percentage it causes many symptoms as:

- 1- Swollen lymph nodes.
- 2- hairy leukoplakia.
- 3- Oral infection.

In figure 9, 10, and 11 will show the appearance of this symptoms



Figure(9)
Swollen
lymphnodes

Figure(10)
Hairy
leukoplakia

After the percentage of T-cells decreases under 200 T-cell/mm³ of blood, now the person have AIDS which cause many symptoms as:

- 1- Recurrent bacterial pneumonia.
- 2- Fungal infection in the esophagus as seen in figure
- 3- Kaposi sarcoma as seen in figure

After some time, the person infected with this virus will die because he does not have an immune system in addition to all of these diseases. If anyone sneezed beside him, he would get ill.

Many other viruses are harmed us like this, so humans must take highly protective precautions to protect their life and save their health from any pathogen that may harm them.



CONCLUSION

Far from viruses, there is a concept that people must use in their life “not all things are the same” each thing has its exception; for example, we saw a person who stole a wallet from a woman does all persons are thieves? Of course, no, it is an analogy that we saw a person who kills a teenage girl does all persons are murders? Of course not also when a whale eat a human does all whales do that, of course, no, but there is the exception now when the talk turns to viruses scale the world contain viruses that they are more than the stars of the universe the human body contain about

Three hundred eighty trillion viruses live in it without harming its health, only a few viruses that harm the human body, so; people must not be afraid of viruses. If they listened to it, they get feared this is a lousy awareness the good, accurate, and trusted awareness is that most viruses are good, cute, and we cannot live without them, but some terrible species may harm us, and people must take the highly protective precautions to protect their life and save their health from any pathogen that may harm them. There is something that must be known that if there are no viruses on the earth, there would not be life as there is an ecosystem balance, and viruses have a central role in it because it is an excellent job in helping us survive.

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INTERACTION EFFECTS OF PERSONALITY TRAIT AND PARENTAING STYLE OF JUVENILE DELINQUENTS ON THEIR SCHOOL ADJUSTMENT

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ABSTRACT

The present study is know the interaction effects of personality trait (Low and High) and parenting style (Low and high) of Juvenile delinquents on their school adjustment. This research paper was done on the basis of Descriptive survey method, SD, Mean, ANVOA, Tukey's multiple post-hoc procedure; Descriptive analysis and inferential had been utilized for this study. Personality Trait tool developed by Dr. Mahesh Bhargva and Parenting Style tool developed by investigator. In this way, formulated the hypothesis, concluded that significant flexibility and originality of delinquent. The researcher has selected Two Hundred Sixty eight Juvenile Delinquents from Vijayapura and Belagavi dristic observation home of Karnataka.

KEYWORDS: *Personality trait, parenting style, School Adjustment, Juvenile delinquents,*

INTRODUCTION

"The only difference between the saint and the criminal is that every saint has a past, and every criminal has a future." Oscar Wilde

All kids are born with blameless, obtain approximately all their qualities from their atmosphere and community, socio-cultural atmosphere in which they are born and brought up. Most of their qualities, both social and anti-social, are formed and developed of through the period of their individual group of life hereditary by birth.(Petrovsky, 1985).

JUVENILE delinquency is an outstanding example of childish naughtiness. Among kids may be a universal phenomenon, poverty, sad home condition, inadequate education, structure exposure to violence through mass media, biological factors, sometimes genetic factors also leads to serious of unexpected behaviors. Every human being is at liberty to fair standard of health, mainly education and source of revenue position which could help a child show the way of customary life. Teenagers are each opportunity they do bad activity in some way obtain sucked into the group. But when naughtiness develops into such a habit that transcends the bounds of the accredited conduct norms of a society the behavior which emerges is characterized, if allowed to go unchecked, may become the "Fore-Runner of Adult Crime." Juvenile Delinquency is one of the serious problems of deviation which the children of

almost all the modern societies of the world are facing. Delinquency is complicated psycho-social phenomenon in younger people are found to abrogate the code of conduct prevalent or expected in society. We all know that no one is born criminals are victims of circumstances. In the case of adults, punishment is necessary because criminal behavior is the result of conscious and street children are exposed to deviance in the form of sex worker, drug addiction and insignificant crimes. Who Children have antisocial behavior at initial stage removing through educating them. But in India, in quite a number of studies, various factors are presumed to be directly associated with the causal process of delinquent behavior.

Who are the Delinquents?

It is difficult to define juvenile Delinquency in terms of deviance from conduct norms because their norms vary from state to state, city to city, and neighborhood to neighborhood. Moreover, whether or not these norms are applied to a particular child may depend on the class position of his parents and the provisions of the laws in his community. According to Karnataka children's Act 1964.

The children are delinquent if they are found guilty in court of breaking any of the federal state or local laws designed to control adult behavior

The Illinois law defines as delinquent a child who is incorrigible or who is growing up in idleness, one who wanders about the streets in the right time



without being on any lawful business, or one who is guilty of lascivious conduct.

OBJECTIVE OF THE STUDY

1. To find out the interaction effects of Anxiety (ANX), Self-concept (SC), personality trait (PR), and parenting style (PS) on dependent variable i.e. school adjustment (SA) of Juvenile delinquents
2. To find out relationship between school adjustment and personality traits of juvenile delinquents students age group of the 12 to 18 years.
3. To find out the relationship between school adjustment and parenting style of juvenile delinquents at the age of 12 to 18 years.

Hypothesis of the Study

Hypothesis: School adjustment scores have no significant relationship with personality trait scores of Juvenile delinquent

Hypothesis: School adjustment scores have no significant relationship with parenting style scores of Juvenile delinquents

Hypothesis: No significant Interaction effects of personality trait (Low and High) and parenting style (Low and high) of Juvenile delinquents on their school adjustment scores .

RESULT AND DISCUSSION

To accomplish the above hypothesis, the two way analysis of variance tool was performed and the outcome of test is presented in the table given below.

Table: 2-way ANOVA with interaction effects of personality trait (Low and High) and parenting style (Low and high) of Juvenile delinquents on their school adjustment scores

Sources of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	p-value	Signi.
Main effects						
SC	1	138.02	138.02	13.1164	<0.05	S
PS	1	408.16	408.16	38.7885	<0.05	S
2-way interaction effects						
SC x PS	1	140.31	140.31	13.3342	<0.05	S
Error	264	2777.97	10.52			
Total	267	3464.46				

From the results of the above table, it can be observed that,

- The main effect personality trait (Low and high) on school adjustment of Juvenile delinquents is found to be statistically significant ($F=13.1164$, $p<0.05$) at significance level of 5 percent. Therefore, the H_0 is rejected and H_1 is not rejected. It means that, the Juvenile delinquents belong to low personality trait have significant higher school adjustment scores as compared to Juvenile delinquents belong to high personality trait.
- The main effect parental style (Low and high) on school adjustment of Juvenile delinquents is found to be statistically significant ($F=38.7885$, $p<0.05$) at significance level of 5 percent. Therefore, the H_0 is rejected and H_1 is not rejected. It means that, the Juvenile delinquents belong to low parental style have significant

smaller school adjustment scores as compared to Juvenile delinquents belong to high parental style.

- The interaction effects personality trait (Low and high) and parental style (Low and high) on school adjustment of Juvenile delinquents is found to be statistically significant ($F=13.3342$, $p<0.05$) at significance level of 5 percent. Therefore, the H_0 is rejected and H_1 is not rejected. It means that, the Juvenile delinquents with low & high personality trait and low & high parental style have different school adjustment scores.

Further, if F is significant, to know the pair wise comparisons of interactions effects of personality trait (Low and high) and parental style (Low and high) on school adjustment of Juvenile delinquents by applying the by Tukeys multiple posthoc procedures and the results are presented in the tables given below:



Table: Pair wise comparisons of interaction effects of personality trait (Low and High) and parenting style (Low and high) of Juvenile delinquents on their school adjustment scores by Tukeys multiple posthoc procedures

Interactions	Low PR with Low PS	Low PR with High PS	High PR with Low PS	High PR with high PS
Mean	93.65	95.45	93.63	100.56
SD	2.86	2.09	2.45	3.74
Low PR with Low PS	-			
Low PR with High PS	p=0.0785	-		
High PR with Low PR	p=0.9998	p=0.5207	-	
High SC with high PS	p=0.0001*	p=0.0001*	p=0.0001*	-

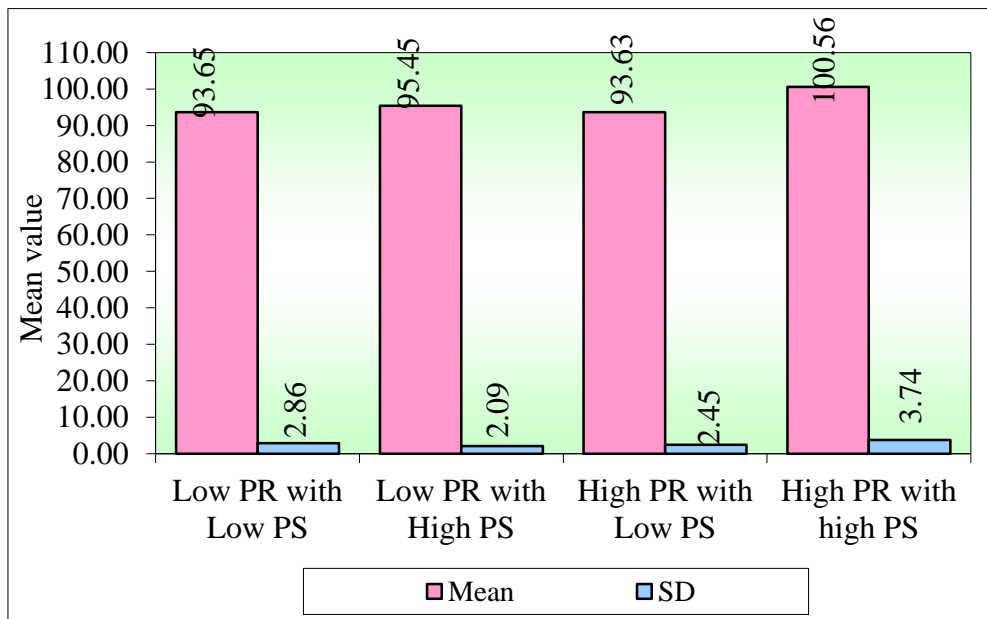
*p<0.05

From the results of the above table, it can be seen that,

- The Juvenile delinquents belongs to low personality trait with low parental style and low personality trait with high parental style groups do not differs significantly with respect to their school adjustment scores at significance level of 5 percent. It means that, the Juvenile delinquents belongs to low personality trait with low parental style and low personality trait with high parental style groups have similar school adjustment scores.
- The Juvenile delinquents belongs to low personality trait with low parental style and high personality trait with low parental style groups do not differ significantly with respect to their school adjustment scores at significance level of 5 percent. It means that, the Juvenile delinquents belongs to low personality trait with low parental style and high personality trait with low parental style groups have similar school adjustment scores.
- The Juvenile delinquents belongs to low personality trait with low parental style and high personality trait with high parental style groups differs significantly with respect to their school adjustment scores at significance level of 5 percent. It means that, the Juvenile delinquents belongs to high personality trait with high parental style group have significant higher school adjustment scores as compared to Juvenile delinquents belongs to low personality trait with low parental style group.
- The Juvenile delinquents belongs to low personality trait with high parental style and high personality trait with low parental style groups do not differ significantly with respect to their school adjustment scores at significance level of 5 percent. It means that, the Juvenile delinquents belongs to low personality trait with high parental style and high personality trait with low parental style groups have similar school adjustment scores.
- The Juvenile delinquents belongs to low personality trait with high parental style and high personality trait with high parental style groups differs significantly with respect to their school adjustment scores at significance level of 5 percent. It means that, the Juvenile delinquents belongs to high personality trait with high parental style group have significant higher school adjustment scores as compared to Juvenile delinquents belongs to low personality trait with high parental style group.
- The Juvenile delinquents belongs to high personality trait with low parental style and high personality trait with high parental style groups differs significantly with respect to their school adjustment scores at significance level of 5 percent. It means that, the Juvenile delinquents belong to high personality trait with high parental style group have significant higher school adjustment scores as compared to Juvenile delinquents belongs to high personality trait with low parental style group. The mean scores of school adjustment of Juvenile delinquents also presented in the figure given below:



Figure: Comparison of interaction effects of personality trait (Low and High) and parental style (Low and high) of Juvenile delinquents on their school adjustment scores



CONCLUSION

- The combined effect of Personality trait (X3) on school adjustment of Juvenile delinquents belongs to 15-17 years of age group is found to be positive and statistically significant.
- The combined effect of parenting style (X4) on school adjustment of Juvenile delinquents belongs to 15-17 years of age group is found to be positive and statistically significant.
- The combined effect of Anxiety (X1) on school adjustment of Juvenile delinquents belongs to ≥ 18 years of age group is found to be negative and statistically significant.

EDUCATIONAL IMPLICATIONS AND RECOMMANDTIONS

The findings of the present study have important implications for Juvenile delinquents they are as follows:

- Individual attention should be paid to children.
- Healthy recreational and co-curricular activities should be provided.
- Medical checkup should be arranged periodically for diagnosing physical defects, deformities and disease, among students.
- Special educational and vocation training facilities will be under taken to rehabilitation boys by encouraging their adoption in families support to house them and impart them training for gainful employment skills.

- Building confidence and affirming identify for student's supports their learning.
- Ensure the right to development as well as recognition of special needs and care protection of Juvenile delinquents.

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IMPORTANCE OF GUIDANCE AND COUNSELLING IN THE SCHOOL EDUCATIONAL SYSTEM: AN OVERVIEW

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ABSTRACT

The aim of this paper is to explore the importance of guidance and counselling in school Educational System. The aim of education has a vital role in the development and abilities of students. Current school education has become an exchanging process between the achievement of aptitude and the competition. Problem faced by the student in the factors effect on educational productivity is much complicated. With education expected of individuals (students) can develop to their full potential qualified personal. Indicators of school success in carrying out their task can be seen from the high academic achievement and a variety of specialized skills possessed by learners and not the least of which involves issues related to academics. While students are required to continue to improve academic achievement, in the midst of busyness and density of academic assignments and extracurricular activities are followed by the students, it implies students need to pursue the guidance and counselling facilities in schools to improve academic achievement. Through these conditions, it is necessary to investigate in depth whether the guidance and counselling itself may play a role in improving the academic achievement of students in school. It takes place for school counsellor's address the academic and developmental needs of all students, not just those in need, by collaborating with students, parents, school staff and the community. Guidance and counselling unit is the school related unit aimed with the key objective of assisting in solving the students' problems and strengthening the efficiency of students as well. This article also examines the aims of guidance and counselling, the role of the counsellor, major guidance and counselling services and methods of counselling. The evaluation in schools to assist individuals (students) to develop the ability to understand them, to solve their own problems, to make appropriate adjustments to these challenges and promote educational success. The objective of this article also to identify anticipated objectives of counselling process, task achievement methodologies and the role of a successful counsellor.

KEYWORDS : School, Guidance, Counselling, Education , Academic Achievement



INTRODUCTION

Essentially, the role in guidance and counselling are the important educational tools in shaping the personality and basic orientation of a student. Well-crafted studies capture the complexities of reality and challenge, when initiated early in the child's life, turn out to be successful over a period of time. Counselling is a relevant skill helps young age child tackle the negative ideas that might have been planted by his/her peers in school and college. The complexities of reality, and make decisions that may highly become important and the role of a professional trainer is gaining prominence. One of the functions of education is developing important intellectual and decision-making qualities that are given an opportunity for students to reach their full potential in the areas of educational, vocational, personal, and emotional development. Guidance is an integral part of education and method of instruction is powerful in helping learners develop the knowledge and skills to deal with centred directly on this function. Guidance and counselling services are with complex structure, prepares students to assume increasing responsibility for their decisions and grow in their ability to understand and accept the results of their choices (Gibson, 2008). A simple illustration most important types of educational guidance is directly concerned with students' life therefore, students often encounter difficulties in understanding what is taught in the classroom, laboratories and workshops. Expected change in behaviour is not fully achieved. Failures in examinations and tests, poor standards or assignments, unsatisfactory involvement in the academic work of students are some of the often notice problems. The problems need to be solved maximum extent by assisting them. Meaning educational guidance is concerned with assistance to be provided to the students, which is expected for their adjustments in the schools, selection of curricula and school like, also defined as a sensible growth of the individual. This has to do with knowing their interest, a selection of their subjects, form of their study habits and making their progress in those subjects, activities and passing the examination. It is compulsory to realize that while textual learning is important, the learning self-confidence, cooperation, curiosity, persistence, inferiority and alienation is more important in order to develop a wholesome personality.

A school counsellor is seen as a role model and receives huge respect from students, usually come across as friends with the students. They listen to their complaints, shortcomings, and provide guidance in the quest of moulding them in the right direction towards a successful and satisfactory life ahead. Meaning a significant understand the impact of emotional, hormonal, and societal changes on students. The aspects crafted in line during the

transition of the child from childhood to adulthood, which is a difficult one, even for the most balanced people. Alongside the purpose of outline influence the family, school and its environment have major influence whereby the guidance and counselling process, helping individuals discover and develop their educational, vocational, various psychological dimension achieve an optimal level of personal happiness and social usefulness. Occasionally, the concept of counselling is democratic assumptions that underlying its theory and practice are. This involves each individual has the right to shape their own destiny and, highlighted the relatively mature and experienced members of the community are responsible for ensuring that each person's choice shall serve both their own interests and those of society. It is implicit make excellent progress in the philosophy of counselling that these objectives are more complementary rather than conflicting. The function of those who guide children and young people is not to effort a compromise between the requirements of individuals on the one hand and the demands of the community on the other. While this expansion provides greater choice for individual toward those opportunities afforded by their environment that can best guarantee the fulfilment of their personal needs and aspirations. The concept defines guiding is to magnify the power of the positive, integrative emotions and to minimize the role of negative disintegrative emotions such that they are or service to the individual in their development and adjustment.

One of the major components of that role is accountability a quality time in guidance and counselling which relate to the development of helps figure out, the goal is to improve the student's life by improving the situation for their own benefit, rather than correct it for the benefit of the school. Guidance is the process can provide quality instruction in which person able to know their ability, interest, a capacity that will help in the encounter of problems faced by them. The opportunity to understand the beliefs and practices in guidance process a dynamic interpersonal relationship that is prepared to influence the person's attitude and follow-up behaviour. Whereby, the narrow concept defines the objective guiding is to assist students and teachers in making available desirable qualifications and skills rather than achieving the goals of educational programs. The broad view of counselling is the sharing of thoughts, reciprocal logic and guidance between groups or two. The goals among students very much focused on academic performances, but they never assess themselves because they haven't explored in schools/colleges. They are practiced emphasize choose their career not assessing self, but with the influence of others expertise. This dimension relates to self-assessment of students that can be able



to know about their interest area, abilities, personalities, analytical level, and suited work styles. It is widely known factors play a significant role in stream and career selection. Modern time, most of the students depressed related to a career decision, therefore the simple and straight reason is lack of knowledge of current trends and developments, available streams, unable to know themselves. Hence, guidance and counselling come into the existence and the trend is increasing day by day. The counsellor experts have wide knowledge about current trends and developments, available streams and factors that have a major influence on career decision-making planning. Perhaps, the counsellor will be responsible to enhance the guidance and counselling to the students for encounters overall problems related to career and update them related to current trends developments with available streams. In conjunction guidance and counselling process, students will be able to know about themselves and easily encounter the problems that they face in day-to-day life that most important to brighten in their successful career. Throughout the psychologically proven, in which individuals are strong, find interesting to explore that area and easy to build their career in the same field. Thus, in the current trend, guidance and counselling are very much required for students to identify their strengths, weakness and at the same time work on their strength in the area of interest to do wonders in the future.

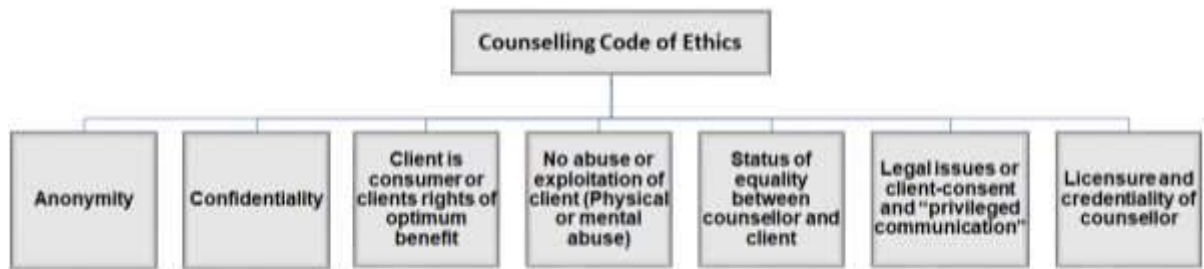
Current study illustrates the growth of individual people to gain self-understanding, self-direction, and to adjust maximally to the environment (Biswalo, 1996). Subsequently empower the level of support to designed people in deciding where they want to go, what they want to do, how to get to their destination, and how to solve problems arising in their life. Guidance is an umbrella term embracing counselling services, which help an individual grow in self-understanding and consequently in making wise decisions for best adjustment's, Sima (2006). The concept of guidance is concerned with the optimal development of the individual and process guidance helps the individual in self-understanding, especially strengths and limitations in self-direction also ability to solve problems, make choices and decide. In this situation the major key effectiveness school as recognize playing an important role in nurturing the most significant phase of a youth's life as a socialization agency and as talent fulfilling formal institute. The true facts related to present day student problems, it could be conceived that the experiences related to domestic problems and complexities related to the school environment, causes severe impacts on study productivity. Although, social integration was treated as a solution for most of the social problems in rural society. The educational guidance and the school counselling

established in schools to solve study related and non-related problems of students. This helps the students to ease out the day-to-day educational problems and take decisions to assist the students to increase the educational efficiency by establishing required programs. In addition, the strategy of involving multiple essential factors for a student to identify and provide guidance on his/her cognitive skills, motor skills and attitudes or potential skills. Counselling is a process of building up personality characteristics, enabling the student to get rid of their confused state of mind. Counselling is conducted to gain knowledge about the lifetime experiences of the student and in order to settle their problems relevant to emotion and interrelationships. Counselling has to be conducted by trained professionals and the process of solving problems includes, gaining a proper understanding about the problem, assess it, evaluate it and find solutions with regular follow-up an action.

Code of Ethics

The Code of Ethics notes that, counsellors work with clients either individually or in groups, to whom they supply professional services concerning educational, vocational and personal/social development, respect the dignity, integrity and welfare of their clients. Ethics are anonymity, confidentiality, consumer rights and no exploitation of client/counselee. Therefore, it is equally important healthy relationship between counsellor, and counselee's, legal rights of counselee and credentiality of the counsellor as professional ethics. Basically, the counsellor will design an essential way by promoting clients' control over their own lives, and they respect clients' ability to make decisions and engage in personal change in the light of their own beliefs and values. The professional services offered by counsellors involve a special relationship of trust and confidence. Counsellors role to ensure the competence, responsible for maintaining trust by setting and monitoring appropriate boundaries in the relationship, and making this explicit to the client and relevant for others. Some essential assumptions for counsellors to follow are:

- The professionals and practitioners comply with the provisions of the Code of Ethics.
- Serving and important part of the complete service without engage in conduct (whether in pursuit of their profession or otherwise) which is dishonest, or which may otherwise relate to the profession of Guidance and Counselling into dishonour, or harmful to the administration of justice.
- Manage the ethics and etiquette of the profession.
- To be a knowledgeable profession in dealing all tasks accordingly.



The relationship with the client is the foremost concern of the counsellor, but it does not exist in a social vacuum such as sensible regard for the social context of their responsibilities, which includes colleagues, the law and the wider community. Counsellors are recommended to deal with ethical dilemmas by engaging in the formal decision-making process presented and strongly recommend supervision as an integral part of the professional practice of members. The Code of Ethics gives details on best practice with regard to competence, conduct, confidentiality, consent, testing, evaluation and research.

Purposes of Guidance and Counselling

The term guidance and counselling are often interchanged, due to their close relationship with one another and the fact that, at times, the functions of the two have a significant overlap. However, aim of guidance and counselling is to unfold the potential lying in and individual to lead them to self-realization. The aims at breaking self-limiting beliefs of the individual and helping them to achieve one's goal in life.

Guidance - becomes clearer when it is taken back to its root verb to guide and the definition of this verb is to lead the way, to assist, to accompany and give direction to further choose a certain path. Specifically, the guidance is the process of guiding a person along a particular path, of showing them what they should do, how to do it and explaining why it should be done, and in this way. The aim of guidance, is to lead an individual into a pre-determined direction of the leader's choice. The purpose is to develop the individual to follow the path selected for them, or behave in a particular way.

Counselling - the verb counsel is defined as to advise, to recommend the adoption of a plan of action, to direct the judgment of another. The counselling defined the interchange of opinions with regards to future procedure, deliberation, consultation. Counselling also is the process of advising an individual while at the same time encouraging them to voice their own opinions and use their own judgment with regards to future actions or the resolution of problems. The main purpose is to contribute individual in becoming psychologically mature and able to realize their potential. The goals

of counselling are self-realization and self-actualization of an individual, providing them with self-direction and self-motivation.

Basically, guidance and counselling deal with the issue or matters outside the field of teaching practice, but indirectly support the achievement of educational and teaching objectives in the school. This activity is conducted through a special service to all students in order to develop and utilize its full capabilities to enable individuals to:

- Design the achievement in the study, career development and life in the future.
- Elaborate all the potential and strength it has as optimal as possible.
- Some adjustment in the education, community and work environment.
- Develop some obstacles and encounter the difficult path in the study, adjustment to the educational, community, and work environment.
- Organize being a respectful of others, not harass their dignity or pride.
- Ensure awareness of responsibility that manifested in the form of commitment to the task or obligation.
- Develop the competence to make decisions effectively.
- Enhance extraordinary motive for lifelong learning.
- Come up with positive attitudes and learning habits, such as reading habits, discipline in learning, having attention to all the lessons, and being active in all learning activities are programmed.
- Endure the preparation and ability to face exams.
- Encompass self-understanding (ability and interest) related to study.

Guidance services in schools are more mainstream to the students, because the students are the center of attention in the education process at school. Students following the education program tend to have difficulties, that among them in terms of understanding, abilities, coming up difficulties. Furthermore, potential that has been optimised, understanding the situation, conditions appropriately



in the environment in schools, community and family with special functions:

- **Development** - focus of the guidance and counselling is to qualify in the areas of personal, social, educational and career development. Thus, to be more comprehensive to design the personal therefore, the counsellor constantly strives to create a conducive learning environment that facilitates the student's development. Counsellors and other school personnel work together to formulate and implement a systematic and continuous the guidance program in order to help students achieve their developmental tasks. The skills and competencies within the context of a lifelong learning framework Guidance techniques that can be used here are information services, tutorials, group discussions or brainstorming (brain storming), homeroom, and field trip.
- **Adjustment** - refers to a process in which an individual finds and adopt modes of behaviour suitable or the changes in the environment. Whereby, broad adjustment engages an individuals' general adaptation to own environment and the demands of life as the way one relates to other people. This dominant interpersonal behaviour, handles responsibilities, deals with stress, meets own needs and life satisfaction. The need for guidance and counselling services in all schools cannot be overstated due to increasing complexities of modern life that have placed heavy demands and responsibilities on school students. These impact quality of students' aspect with numerous personal, academic, social and emotional needs and problems when unattended could lead to host patterns of undesirable behaviours. The responsibility of a school guidance and counselling programs have therefore been introduced to assist students to overcome and adjust to a host of social and emotional challenges they experience at home and at school.
- **Channelling** – developing the positive actions and attitude required to achieve their educational and future professional goals, therefore guidance and counselling will function in assisting individuals to choose activities and establishing with interests, talents, skills, and other personality traits. Understanding the effects in performing this function, the counsellor should cooperate with other educators within the board outside the educational institution. Developing these critical and problem-

solving skills support students in getting familiarized with practical reasoning and in making complex choices, learning process also being able to adjust to the life of the group. Recognizing and understanding the guidance is intended to assist students in solving and overcoming difficulties related to social problems, so as to create a conducive learning environment. Generally, the counsellors lead the traditional way in guiding the students while taking the decisions, mostly take the rational and linear path in order to guide the students.

Characteristics of Guidance and Counselling

The term of counsellor is a very important and valuable position in any educational system that can help a student deal with current personal issues, academic challenges, prepare and plan for the future. The strong focus on personal development strives by guidance counsellors, also known as school counsellors, help students survive difficult classes, peer pressure, depression and other problems that hurt their odds for success. A deeper appreciation of the counsellors needs several qualities, including people smarts, math abilities, observational skills, a good thinking cap and compassion. In order to fulfil their roles as counsellors effectively the advanced education also helps counsellors understand how to keep students on the right path academically and socially with:

- **Be an excellent communicator** - Having excellent communication skills is one of the most important skills as a counsellor. A big part of being a counsellor is listening to students, and then responding thoughtfully and effectively. Able to communicate ideas, thoughts, and feelings verbally is a trait that can never go unrecognized as a counsellor. Often, be bouncing ideas off a student to help them reach a crucial decision or discussing a student with their parent or a team of faculty members therefore, convey assessment of student verbally is vital.
- **Appreciate diversity** - The development and distribution of the understandings, skills, and attributes across students happen for a multitude of backgrounds, and being able to accept and embrace diversity is another trait that is crucial of a counsellor. From this perspective students begin from all walks of life and all types of families, and helping students learn to accept and embrace their own diversity in a school setting is critical to a counsellor's success. Potential the student has problems at school or at home, a guidance counsellor must consider how that student's socioeconomic status, race,



ethnicity, religion, sexual orientation, or gender identity may come into play. A counsellor must be able to listen to and help students from all walks of life.

- **Be friendly** – The skilful counsellors must be warm and approachable to their students, also to parents and faculty members. Being open and extrovert will often mean that students will trust counsellor more than they trust their parents, and students getting to open up and let go of their burdens is one of the most rewarding things as a counsellor can accomplish. One of the most important characteristics of a counsellor is the ability to be friendly to students, therefore this may be able to gain the trust of students in order for them to be the most effective. The strategy of involving students overworked and set with heavy accomplishment lists, so having someone to listen to their troubles is a way to make students feel less stressed. Although, the connection with a student, counsellors likely need to be able to be friendly, once they have formed a relationship with a student, a counsellor can start to help the student.
- **Be authoritative** - This review reveals that if the situation calls to be authoritative, a guidance counsellor must cross the boundary from a friend to professional. When situation incur such as abuse or neglect is suspected or present, or if a student is engaging in risky or harmful behaviour, a counsellor must know when to express their authority and take the proper steps to ensure their student's safety. A counsellor able to provide direction to a student to be sure they are making the right-choice, this will require the counsellors be authoritative and even punish the student for mistakes made.
- **Be well-rounded** - A counsellor will often have a wide range of interests outside of work, and never know when one of these interests will resonate with a student and prompt a connection that gets student to open up to the counsellor. Being able to speak about own experiences in life will allow the counsellor to bridge gaps with students, offer advice, share tips and building blocks for social development.
- **Have good evaluation skills** – As role counsellors spend a lot of their time evaluating test scores or administering tests to students. The importance being able to accurately evaluate and translate these results to discuss a student's academic performance, or aid a professor in making

an accurate assessment of a student's skills a vital. A sustained commitment to facilitating positive transformation and human-to-human connection is a key to success, meaning beyond the exam is a part of what makes an effective counsellor. Think critically and conceptualize students to see their test scores as very black-and-white in regard to their future prospects hence, it is the job of their guidance counsellor to offer the shades of grey in between and explore all opportunities available to their students, regardless of test scores.

- **Knowing when to act** - A counsellors at times have to help students dealing with neglect, abuse, risky behaviour, or other dangerous circumstances. To develop and ability to recognize a harmful or potentially life-threatening situation and taking the steps to help remove students from these situations is a key skill for any school counsellor.
- **Empathy** - A counsellors endorse positive environment and enhances the student's abilities to properly manage dealing with bullying, disputes with friends, problems at home, and so much more. Recognizing and understanding all these skills aid students, including the competence to perceive another's experience and then to communicate that perception back to the individual to clarify and amplify their own experiencing and meaning. In reality to enhance this concept effectively, the counsellor must be able to empathize with what students are going through and channel this into a compassionate response.

Benefits of Guidance and Counselling

The alignment is most noticeable in the dimensions of the guidance and counselling, especially in the modern age have become escalated needs because of a multiplicity of problems that the individual faces in important domains of life. This was reflected in the strategies of guidance and counselling help to recognize, understand about one's talents and abilities, help to develop an optimistic outlook for removal unwanted behaviours, it aids to develop resourcefulness and self-direction in adapting to changes in society. Among the learning opportunities created, students are given solutions on how to deal with psychological problems which might affect their studies. Through this, the students are able to develop problem solving skills which help them to deal with particular issues surrounding their lives. However, the framework imposes the students are advised on how to cope with different situations facing them in their school life. Thus, illustrate on



how to relate with their peers. It helps to shape a student's behaviour and discipline in students. Mostly the concept of guidance and counselling in schools is to make progress in academic achievement, increase acquisitions and application of conflict resolution, promote affirmative study attitudes, behaviour and reduce school dropouts. In reality the individual who is guided and counselled in a right way tend to know what to do and how to do such things. Guidance and counselling are important for students, and schools have a huge role in bringing out the best in students. However, it gives opportunity young minds need guidance to polish their personality through counselling, students are given advice on how to manage and deal with emotional conflict and personal problems. The characteristic of counselling will help incorporate valuable lessons in their daily life. Meantime enhances students to talk about various things which they feel uncomfortable talking about with their parents which include things like drug abuse. This may enforce the students to become better people because they are taught by the counsellors about how to behave in a proper manner. It will encourage students undergoing difficulty in their lives have a good place to ask for questions and clarity from the guiding and counselling office. Herein list of some of the benefits that students get from effective guidance & counselling:

- i. Guidance is promotion of growth of the individual in self-direction on how to deal with psychological problems which can badly impact their studies. This process allows to learn to adjust to with different types of problems and to develop certain problem-solving skills which to an extent help deal with particular issues surrounding their lives.
- ii. Every individual has a source of self-respect therefore students are advised on how to cope with different situations they tend to face in their school life. Every individual is gifted with certain potentialities, capacities and talents, how should they talk politely or relate with their peers. In that case excellency is required in the development of talents and provide guidance that will give them perspective on how should they behave in certain scenarios.
- iii. It helps to shape a student's behaviour and also instil enough discipline them. Guidance and counselling, obtain individual a benefit by accepting the decision with proper guidance helps them achieve their goals, know what to do and how to do things in the best possible way.
- iv. Self-understanding discovers students learn how-to live-in peace and harmony with

others in the school community. In this manner, every individual will learn to appreciate other people in their class.

- v. It is a sort of help developing healthy ideas and making adjustments, may help bridge the gap between students and the school administration, since they are able to benchmark their obstacles through a proper counselling channel.
- vi. To make a right start, helping process will achieve individual get comprehensive advice on career, courses and jobs that enable them to make a proper and informed choice and understand what are the aims growth in intellectual can do after they are done with school.
- vii. This was reflected in the concept against reality and allows students to talk to teachers about various experiences that make them uncomfortable. The important psychological foundations openly share problems that they cannot share with their parents.
- viii. Essentially, the most important aspect related to alcohol, drugs, personal feelings or any kind of abuse, can be openly discussed. Guidance and counselling are helping an individual to establish better human beings since they are counselled on how to act and behave in a particular situation.
- ix. The student responsibility enables adjust in different situations, undergoing certain difficulties in their lives, to ask questions and clarify them through guiding and counselling.

Guidance and Counselling Development Measurement

- 1.0 A process of learning and
 - 2.0 management of socially approved knowledge, involving and approved curriculum and pedagogy, paid
 - 3.0 professional educators, compulsory attendance of pupils, and school groupings (Scott, 2005, page
 - 4.0 581). According to this definition school is the institution mainly concerned with education within a scope of
- Counselling methods and points of view have developed from research and theories about how individuals grow and develop, change their behaviour, and interact with their environment, however, they focus attention on identifying, analysing the problem and finding an appropriate solution to it. The counsellor tends to make use of test data, school records, and reports, and to be more disposed to giving advice and information.



According to this definition school is the institution mainly concerned with education within a scope of accepted subject curriculum, teaching techniques, vocational and professional education, compulsory attendance organizational teaching procedures. There is a strong practice to achieve the established school goals that relate to the role of the student and the role of the teacher in school being more balanced and creating suitable environment to endorse the education becomes an extreme background for fulfilling the objectives in education. The educational guidance and the school counselling are a special unit established in schools to solve study related and non-related problems of students. These factors helped schools to maintain helps the students to ease out the day-to-day educational problems and take decisions to assist the students to increase the educational efficiency by establishing required programs. According to St. Julie Billart mentions, education is a psychological development and a social integration process as a psycho development process, it is necessary to pay attention towards the two units namely, “*individual person*” and “*society*”. When the student is treated as one single person, there are various factors related to their strengths, weaknesses, opportunities and threats as well. The school acts in the process, identifying the strengths of the students and brighten them, therefore, it is an essential factor for a student to recognise and provide guidance on their cognitive skills, motor skills and attitudes or potential skills. At the same time, students may face psycho-social problems owing to their physical and mental defects attached not only with the maintaining of interpersonal relationships relate to the study concept, coaches, colleague groups, administration but also their family background. Some practices which are faced by the students can be listed as below:

- i. Forgetfulness about learnt lessons.
- ii. Weakness in concentrations
- iii. Dislike for studies.
- iv. Sudden breakdowns in learning
- v. Laziness to learn and attending to the school
- vi. Think to escape the school
- vii. Low achievements or High achievements (Over achievement)
- viii. Slow in studies or Backwardness
- ix. Carelessness
- x. Forget to do homework
- xi. Examination phobia and social phobia.

The process is providing guidance for the student to select the subject preferred for the profession and help to identify student who are suffering from problems to line-up the life. There are two main functions in guidance service as below:

- ***Assist in the teacher to solve the educational problems*** - guidance service activates in two ways to solve educational problems, that is providing the teacher with required methodological assistance for teaching and providing opportunities to strength the teacher with student relationship. The activities including building up of a required study environment for the teacher to teach with productive results, supplying the necessary tools and promote awareness about teaching techniques are accomplished by the students. Teachers’ role is very important to enable the student to remember the teachers and emerging of a successful teacher is one of the objectives in the educational guidance process. The idea of the guidance process is to build up a better interrelationship between the teacher and the student enable a healthier understanding about the student which will result a successful and productive teaching process.
- ***Assist in the student to solve education related problems*** – the objective of the guidance process is to solve the educational problems of the students. When considering about the individual personality development level, schooling, age is the critical stage, hence the student regularly becomes a person enabling to hold social responsibilities. Only the guidance process can protect the student from drug and liquor addiction, school leaving, sexual experiences and unrest at a young age, including the development of physical, mental, social, personal, moral and religious. Essentially, guidance and counselling are a process that can influence the student’s life directly, helps the student to enable the educational experience more fruitful and efficient.

Apart from guidance, counselling connection is a professional relationship and objective is to empower psycho-social development of a person with a psychological view encourages people to overcome by guidance, knowledge, reinforce the personality and through a course of mental therapy. Therefore, counselling is a healing process in a psychological basis, characteristics of person are identical and heterogeneous problems of students are varied. Therefore, the definition given by the Counselling Service Association is as follows “*The role of counselling is to pave the way to reveal the possibility of identifying the lifestyle of each person according to their behaviour*”. This explains that there is a vast difference between advice and counselling whereby, counselling is a process of assisting an individual who seeks a solution for a problem based on Webster Dictionary “*counselling is*



a process of a consultation and mutual exchanges of opinions deliberation". Counselling also categorizes as a discussion of an amicable exchange of friendly criticism hence, a process of building up personality characteristics that enabling the individual to get rid of their confused state of mind. This is conducted to gain knowledge about the lifetime experiences of the client and in order to settle their problems relevant to emotion and interrelationships includes, thought about the dilemma, assess it, evaluate it and find solutions with regular follow-up an action. Generally, school counsellor has a significant role that organizes the required background for development apart from the school curriculum. The guidance can help student clarify the role of positive emotions that are constructive and integrative whereby, the negative emotions are disintegrative and disruptive the part they play in their life. Guidance is concerned with the development through adjustment and therefore, ought to be designed to individualize educational programmes and enhance the capacity of more effective choice-making. Counselling is psychological in solving personal problems, personality inspections, intelligence tests are carried out to identify the mental problems of students. Counsellors encourage the students to solve their own problems by themselves and there are several problems with students, which can be solved by counselling and psychotherapy:

A process of learning and management of socially approved knowledge, involving and approved curriculum and pedagogy, paid professional educators, compulsory attendance of pupils, and school groupings (Scott, 2005, page 581). According to this definition school is the institution mainly concerned with education within a scope of

- i. Problems arising from inter-relationship.
- ii. Sexual problems
- iii. Problems about parents
- iv. Feeling of stress
- v. Conditions arisen from separation and losses.
- vi. Feelings arisen from jealousy and enmity
- vii. Problems related to deaths and separations
- viii. Feelings of confusion state
- ix. Inability to decision making
- x. Emotional and sexual abuse
- xi. Anger management
- xii. Anxiety and sorrow

Counsellors apply various strategies to identify the students relevant to psychiatric defects, students' problems are identified by the counsellor through, discussing with the class teacher, subject teacher, prefects, students and keeping a box for taking suggestions and problems. A successful counsellor will encourage the student to spend a happy life and

initiates the counselling process after identifying the student that with problems. Therefore, it reveals that developing the knowledge in a way to lead a happy and prosperous life as well develops the standard of living with moral values through the improvement of educational efficiency called the seeds of development.

Types of Counselling Method Approaches

Counselling methods and points of view have developed from research and theories about how individuals grow and develop, change their behaviour, and interact with their environment. These counselling methods are generally classified into three.

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• Directive Counselling

The directive counsellor is said to be more interested in the problem than the person as in the counsellee. This belief is an exaggeration as the student and her problem cannot be separated. However, the directive counsellor focuses attention on identifying and analysing the problem and finding an appropriate solution to it. The counsellor tends to make use of test data, school records, and reports, and to be more disposed to giving advice and information based on such data (Coleman, 2009). Directive counselling seems to be most successful when the counsellee is relatively well adjusted, the problem is in an intellectual area, a lack of information constituted the problem, the student has little insight into the problem, inner conflict is absent, and the client suffers from anxiety, insecurity, or impatience (Coleman, 2009; Parsons, 2009). This type of counselling is directed in its nature that the counsellor plays an important role in it with authority states a judgment over any problem. The student has to cooperate to counsellor and they have to work under the counsellor.

• Non directive Counselling

The objective of non-directive, approach more effective in the treatment of many types of emotional problems. However, many cases merely call for information or some other routine assistance. Although there are many proponents of non-directive counselling, among them Carl Rogers is best known, started the movement and has given leadership for more than six decades (Rogers, 1942). The aim of non-directive counselling is, according to Rogers, to help the student to become a better organized person, oriented around healthy goals. The aspiration of the student enhances prepare to be a united purpose, the courage to meet life and the obstacles that it presents. Consequently, the client takes from his counselling



contacts, not necessarily a neat solution for each of their problems, but the ability to meet the problems in a constructive way. The effectiveness of this type of counselling process provides students a great opportunity for free expression in which he/she could give information to counsellor completely. The complexity of the individual will work with counsel, democratic in behaviour where counselling develops further insight, a more complete and accurate understanding of the problem. Meaning the student will play a strong role that aims to explore instructional practice as client centered counselling.

- **Eclectic Counselling**

Eclectic counselling is the result of selecting concepts from both Directive and Non-Directive approaches. The element in this type, counsellor practice whatever approach seems best suited to the situation. Real help given to most students in schools would be located between the highly directive and the eclectic views rather than client centred (Coleman, 2009; Parsons, 2009). The counselling service is designed to facilitate self-understanding and development through dyadic or small group relationships. The purpose of such relationships tends to be on personal development and decision making that is based on self-understanding and knowledge of the environment. The counsellor assists the student to understand and accept clarifying their ideas, perceptions, attitudes, and goals which furnishes personal and environmental information. Perhaps, the plans, choices, or problems, seek to develop the students' ability to cope with solving the problems and increased competence in making decisions also plans for the future. In this situation, counsellor offers many alternative solutions of a problem from which student could select the most appropriate one. Concepts are interpreted and counsellor has the effect of counselling on the student's mind, therefore it will be effective for teacher use this type of counselling according to the need and nature of students as well as problems.

Evaluation of Guidance and Counselling in Student's Life

The element is directly related with evaluation consists of making systematic judgments of the relative effectiveness with which goals are attained in relation to specified standards. In evaluating a function like guidance and counselling services, the counsellor attempts to determine to what extent the objectives of the service have been attained. Evaluation is the mean by which school personnel can better judge the extent to which these objectives are being met (Popham, 2010).

1. **Do you think that every school student needs guidance and counselling?** The category identifies students do not stand in need of guidance and counselling, and that it is only in

the case of deviates that something needs to be done in order proceed with right path. It is a common experience of teachers and others who have to deal with youngsters that the so called 'trouble maker' has dilemmas of their own and suffering from mental and emotional unrest. Normally student who behave abnormal reactions to any given situation, are generally found either to be physically, mentally, emotionally or to be extra-ordinarily gifted academic, social mechanical or creative talent. In this scenario, individual will demand excessive attention and time from their teachers and classmates. This has created the misconception that needs help, guidance and counselling, that give each student an equal opportunity to perfect by the best education that can be provided. In view of this, all students should need guidance even student who are considered as normal differ in their capacities, physical, mental, emotional, in their interest, readiness, motivation to learn, in their personal problems, in their dreams and aspirations.

2. **How to do counselling of students in the most perfect way?** Counselling is an integral part of the guidance programme. The aim of guiding is to understand, help student and that is the first thing a guidance works. If a counsellor has accurate and reliable information about the student, therefore counsellor will be able to get a vivid picture of the individual. It is comprehensive and significant competence information is essential to know and understand the individual well. Any worthwhile counselling should concentrate upon the individual and their problems. In the counselling the following two types of techniques are to be taken into consideration.

a) **Individual Technique:** Counselling is the most important technique which can be designed to work with pupils individually.

b) **Group Technique:** Group guidance is another most important technique which can design appropriate, work with pupils in group mobilising and making available school, community resources and services.

Counselling also a core of the entire guidance programme. It has been considered the most vital and intimate part of the guidance and counselling that defined as a face-to-face relationship in which growth takes place. The first element in rapport which involves establishing a relationship of mutual respect between the two individuals, the counsellor



and the counselee a certain kind of assistance to the other. Counselling is a personal and dynamic relationship between two individuals an older, more experienced and wiser (counsellor) and a younger, less experienced and less wise (client/counselee). The effectiveness of communication, enable to understand the problems more adequately and more clearly defined for client/counselee helped to a self-determined solution. Counselling process involves consultation, mutual interchange of opinions and deliberating together. The counselling relationship is a friendly, permissive and accepting relationship, not a one-way advice-giving situation. The aim of counselling is self-understanding, self-acceptance and self-realization. However, counselling is a personalized and individualized process designed to aid the individual to learn school subject matter, citizenship facts and other habits, skills, attitudes and beliefs which go to make a normally adjusted person. Thus, counselling has great educational importance in aiding individuals to eliminate or to modify those disabilities which act as obstacles to learning and building up desirable attitudes and skills. This involves helping the individual.

- *More towards understand what client/counselee can do.*
- *Strengthen their innate abilities.*
- *Understand the opportunities open to them.*
- *Handle his difficulties in a rational way.*
- *Endorse self-concept and make own decisions on problems.*
- *Plan on the basis of self-understanding accept responsibility and take action on the plans.*

3. **What are the factors in school which influence student's adjustment?** There should be a well organised plan getting along with the members of the society as best as one can, is called an adjustment. Below are some characteristic that school related factors which influence a student's adjustment.

- i. *Classroom climate:* influences students' adjustment very much, especially if classroom climate is democratic, affectionate and cooperative then we can expect that students would adjust themselves sufficiently.
- ii. *An evaluation system of school:* if school has supportive and encouraging evaluation system, if a school has validity and objectivity

in evaluation then it can influence a student's adjustment positively.

- iii. *Proper training of teachers:* if the school teachers are well trained in educational psychology, they can help students in making proper adjustments in school therefore personality and democratic attitude of teacher influence student's adjustment positively.
- iv. *Adequate curriculum:* the curriculum of the school also influences a student's adjustment. If the curriculum of the school is need based and planned psychologically then students can adjust themselves effectively.
- v. *Adequate recreational facilities:* if students are providing essential and enough opportunity to take part in recreational activities according to their interest, needs and ability then they can adjust themselves positively. Furthermore, below are some of the measures can also help students in adjusting to the school environment:
 - The school should organize various curricular activities to accommodate the individual needs of the students.
 - Systematic planning by teachers to know the fundamental principles of human behaviour to solve students' problems. They must be emotionally stable and have a positive attitude towards teaching also create a conducive school climate.
 - Students should be approached to express their views and feelings on various issues related to school freely.
 - Teachers should develop a variety of interests in students so that they can satisfy their emotions.
 - Day-to-day problems can be discussed in class.
 - Working with personal issues such as sex and moral education should be an integral part of the school curriculum.
 - School to coordinate guidance and counselling services for students.

Recommendations of the Study

The responsibilities of a school guidance and counselling programme includes all those activities other than instructional which are carried out to render assistance to pupils in their educational, vocational, personal development and adjustment. The fundamental aim of guidance and counselling being the maximum development of the individual to geared toward the attainment of the goal. These services can assist the pupils in knowing themselves, their potentialities and limitations, making appropriate choices in educational, vocational and



other fields. The reflection innovates a strong recommendation are focused and highlight the key characteristics of a student. These focused contain of the key ideas through first highlights the student's contribution to their community, the second focuses on a student's special talent, and the third talks about a student's unusual maturity. Today, young generation are surviving in an exciting time, with an increasingly diverse society, new technologies, and expanding opportunities. To help ensure that they are prepared to become the next generation of parents, workers, leaders, and citizens, every student need support, guidance, counselling and opportunities during adolescence, a time of rapid growth and change. Perhaps, in the beginning stage, adolescents face unique and diverse challenges, both personally and developmentally, that have an impact on academic achievement.

CONCLUSION

Educational guidance and counselling are the assistance given to the individual to understand his/her potentialities and have a clear-cut idea of the different educational opportunities and their requirements to make an intelligent choice as regards to school, colleges, the course, curricular and extracurricular. Educational trends in setting the vision and goals are various, students at different levels of education have been found to function at levels far below their capacities. Therefore, counselling would certainly help to brighten the lives of many young people and indeed an important dimension of education. It influences emotional maturity, personality development, self-responsibility, creativity and ability to solve problems. At the elementary stage guidance also help the student make a good beginning, to plan intelligently, to get the best out of their education. Educational guidance needs to be used in diagnosing difficulties, in identifying the special needs of student to understand themselves better, to understand different aspects of the school, to select appropriate courses to get information about different educational opportunities and develop good study habits. The tertiary stages must orient students about the purpose and scope of higher studies and help them to stimulate their studies. The main objective guidance and counselling programs is schools are to assist individuals to develop the ability to understand them, to solve their own problems, and to make appropriate adjustments to their environment. Though a number of problems are faced at home, school and society, still we can go ahead with proper planning. People can face the changes and challenges with proper planning.

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METHODOLOGICAL ASPECTS OF THE USE OF MNEMONICAL METHODS IN TEACHING ENGLISH

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ABSTRACT

This article describes the methodological aspects of the use of mnemonics in teaching English to non-specialist teachers, and the author offers some methods and techniques for the effective application of mnemonic technology in practice.

KEYWORDS: *mnemonics, motivation, teaching English to non-specialist teachers, speech culture, mnemonic methods.*

In our country, great attention is paid to the progressive reform of the education system, the development of talent, cognitive knowledge, creative abilities, quality education based on the interests and needs of future personnel in accordance with the requirements of the Third Renaissance. A number of scientific studies are being conducted on the introduction of new teaching models in the educational process, the development of skills to acquire sufficient knowledge for professional communication in a foreign language, including English, and the use of innovative teaching methods in the educational process. There is also a need to ensure the importance of the use of mnemonic methods in the formation of motivation of non-specialist teachers in the process of learning English as a means of pedagogical and psychological-didactic mastery.

Statistics show that the popularity of learning English is growing every year. An example of this is the 2018 British Council conference in Edinburgh on the future development of English language use, which noted that "this language is now the number one language in the world and the number of learners will exceed 1 billion in 2020 alone". According to experts, by 2026, this figure will double, and more than 2 billion people will begin to understand the peculiarities of English speech [1].

In the process of learning English, there is a need to motivate non-specialist teachers and meet their language learning needs through the use of mnemonics. Because, according to the Department of Foreign Language Knowledge and Proficiency Assessment of the State Testing Center, at the

beginning of the 2019-2020 academic year, 11,250 out of 1,066,926 applicants who applied for undergraduate education at universities had a certificate of preference in foreign languages. This means that the bulk of the certificates are CEFR national certificates issued on the basis of IELTS and STC exams. From the 2020-2021 academic year, an applicant who chooses one of the bachelor's degree programs that includes a foreign language in the subject package is required to have a B2 or higher language certificate [2].

In the process of teaching English, the acceptance of new knowledge by non-specialist teachers in the context of those who already knew and understood it, paves the way for raising the level of knowledge acquisition to a higher level. If, in the process of learning English, information is provided without linking it to the previous knowledge of non-specialist teachers, it will quickly disappear from memory. Here the use of mnemonic methods comes in handy.

Mnemonics - (Greek: *mnemonika* - "art of memory") - a set of methods and techniques that help to memorize memory and increase the coefficient of memory through the formation of artificial associations [3]. The analysis of the system of in-service teacher training showed that this training is carried out in a stratified manner. There are several types of them around the world: part-time or distance-based primary education at the beginning of pedagogical activity for inexperienced teachers; primary education for experienced (usually with extensive experience in school) but unqualified teachers; additional pedagogical education for



graduates with no pedagogical experience (in the form of internships at school and additional courses); further continuing education of qualified teachers with pedagogical knowledge and experience. Therefore, the use of mnemonic methods in shaping the motivation of non-specialist teachers in English teaching is not only about developing a system of foreign words that is not adapted to a "simple memory" or a multi-order rule that has no meaning for it, but it also refers to the acquisition of language for mnemonic words and rules based on the dominance of the right hemisphere of the brain.

The application of mnemonics in the teaching process of English is based on the inner needs of language learners, that is, their motivation [4].

Mnemonic methods are a component of methods aimed at the implementation of several important types of educational activities in the motivational phase. First, the learner is actively involved in restoring what they know about the topic being studied. This forces him to analyze his knowledge and think about a topic that will be discussed in more detail soon.

In the process of learning English using mnemonic methods, non-specialist teachers go through six main stages as external motivation is positive (striving for success):

1. The emergence of the need to learn the language.

2. The emerging need is expressed by the non-specialist teacher in one of the available ways - full satisfaction, replacement, transition to other needs, etc.;

3. Define the goals of the movement. In the process of learning English to meet a need, a non-specialist teacher sets a clear goal, knows what outcome he or she expects at the end of the activity;

4. In the process of learning English, non-specialist teachers incur moral costs to meet the language learning needs. Needs may change over time, but they are seldom met spontaneously, without the voluntary action of man;

5. Receive a reward for your actions. The result obtained for non-specialist teachers of English language learning at this stage is linked to ideas. The reward is reflected in the emergence of positive emotions [5];

6. If the effect of demand is resolved positively and the desired result is achieved, the need disappears for a while [6].

The six main stages mentioned above are said to create external motivation in non-specialist teachers and as a result the success of English language learning. Of course, there is a need to improve the technology for memorizing English words and phrases based on the use of mnemonic methods (Cicero, Aivazovsky) in creating this

motivation. In order to accomplish these tasks, we began to study the English units of non-specialist teachers in the context of the research issue, studying the semantic and grammatical constructions that make up a significant part of their speech. Therefore, it should be noted that they should be analyzed in certain categories. The use of mnemonic methods in many ways enhances the speech culture in a teacher's mastery of English, serving to define a person's intellectual activity. In addition, a deeper understanding of the words in the mnemonic base allows for a deeper understanding of the history of the nation, its customs, to get acquainted with the culture of a particular nation [7].

In the process of learning English through the use of mnemonic methods, non-specialist teachers focus on such aspects as the development of external motivation, comprehension of grammar and language structure, memorization of words, study of their expression and pronunciation. The following methods can be used to acquire these skills:

1) Reading English books, magazines, newspapers

The golden rule of learning a foreign language is to read a lot. Without this skill, it is difficult to achieve sufficient success in oral and written tests. As for language learning, it is necessary to find any book, magazine, newspaper on the Internet and read it regularly. In this direction onlinenewspaper.com; gutenberg.org serves.

2) Translation of mobile phone and computer language into English

The phone, changing a computer program to English, associating the action it performs with a specific word, and doing it every day, increases vocabulary. At the same time, changing the language of social media also helps in learning new knowledge.

3) Use of mobile applications

Mobile devices and apps are an endless opportunity for those who want to learn English. At a time when technological advances are accelerating at lightning speed, by taking advantage of this opportunity, the ability to memorize, read and comprehend words using applications will increase. These include: learnenglishbritishcouncil.org; duolingo.com; busuu.com utility utility.

Write

Writing English is one of the most difficult skills to master. Usually, an essay or motivational letter is required. In writing, it is important to use auxiliary phrases that connect the abbreviations, and to use them in an expanded way.

4) Blogging

Today, blogging, ideas, interests, and comments on a topic are common. Starting an English blog will help you to "wake up" the words in your memory.



5) Focus on new words

Sticking new, English words to pieces of written paper, where they are often overlooked, and reading them every day is effective as a result.

6) Participate in forum discussions

It is necessary to sit in forums on such topics as fine arts, music, theater, literature, as well as politics, technology, fashion, cooking. It encourages the exchange of ideas, debates, and the use of new words and phrases in English on topics.

Listen

It is important to develop this skill. This skill needs to be developed, especially for active participation in internships abroad, student exchange programs, seminars or discussions.

7) Listen to English songs

One of the first recommendations for those who want to improve their English is to listen to a lot of songs in the languages they are learning. This helps in learning both words and their pronunciation, as well as adapting to unfamiliar words for convenience.

8) Get acquainted with the English media

One of the most useful ways is to watch series, shows, news, movies that are broadcast on American and British TV channels. The first step is to watch with subtitles and then try to understand without writing.

9) Participation in competitions

Candidates of different nationalities can participate in symposiums and competitions to gain experience and improve their English pronunciation.

10) Listen to the podcast

Podcasts are audio or visual materials on a specific topic. The Internet is a great tool for easily accessing podcasts. Listening to broadcasts on your favorite topics will gradually increase your skills in this area, motivating you. Bunda librivox.org; audible.com helps.

Communication

Employers abroad focus on how well a specialist has mastered speech skills, rather than on certificates obtained from tests such as TOEFL or IELTS.

11) Speaking and writing

One of the most effective ways to develop English communication skills is online and free voice recording software, which has become popular recently. You can record the speech and listen to an expert who knows English, and if they make mistakes, you can ask them for help. Bunda Online Voice Recorder; Voice Spice Recorder helps.

12) Make English speaking friends

You need to make English-speaking friends to develop your communication skills. Many sites on the Internet are platforms designed to meet cultures, learn a foreign language, make friends from different countries around the world. You can also have live chat with your friends using apps like Telegram, WhatsApp, Skype.

During the study, its goal-oriented pedagogical principles, pedagogical system and its stages were identified (*Figure 1*).

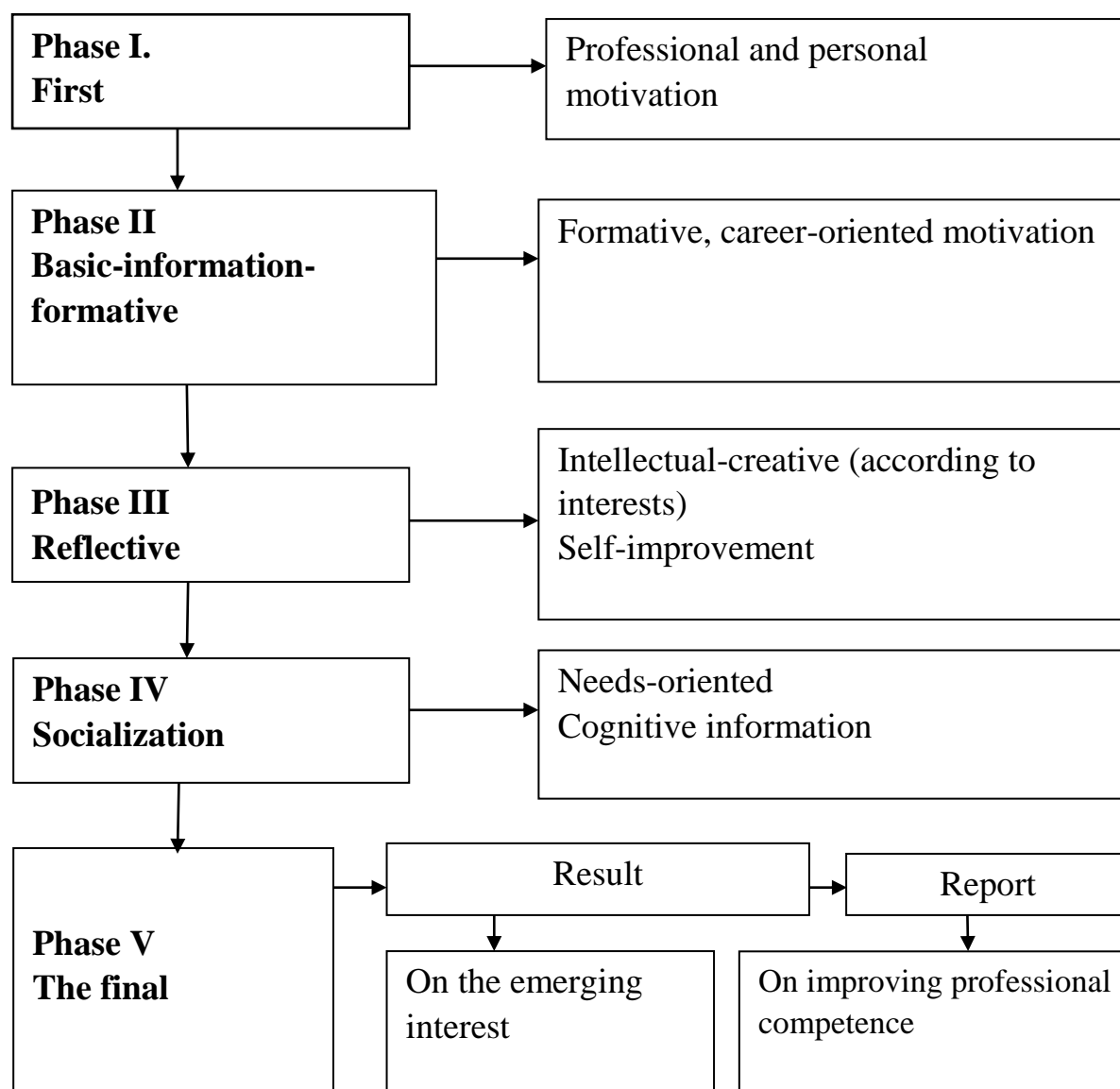


Figure 1. Stages of motivation formation in non-specialist teachers through mnemonic methods

Based on the above, it can be noted that in order to improve the system of using mnemonics in shaping the motivation of non-specialist teachers in the process of learning English, a language learner must memorize 1200 or 500 words a year in English, in 3-4 years he must memorize 5000-6000 words was found.

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FORMING A CULTURE OF SOCIAL BEHAVIOR IN PRESCHOOL CHILDREN THROUGH IMAGINATIVE LITERATURE

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ABSTRACT

The main purpose of this article is to introduce the culture of social behavior of preschool children today through imaginative literature, to prevent a decline in children's interest in reading.

KEY WORDS: *preschool education, preschoolers, imaginative literature, social behavior, culture.*

Bringing up young people in a healthy and spiritually mature way has always been important. Because the future of society and the state depends on the education, upbringing and spirituality of young people. This desire underlies the following words of President Shavkat Mirziyoyev: "We will mobilize all the forces and capabilities of our state and society for the development of young people with independent thinking, high intellectual and spiritual potential, as well as for the development and happiness of their peers around the world".

The holy hadiths also promoted education, morality, friendship, the rights of relatives, parents and children, kindness, purity, justice, honesty, patriotism and diligence. The main goal of education is to form young people as full-fledged people, inculcated by national and religious values, which have been passed down from generation to generation.

In his speech at the XIV session of the Oliy Majlis of the Republic of Uzbekistan on the topic "Uzbekistan aspires to the XXI century", the first President IAKarimov said: We must always keep in mind that the future of our country depends on how our young generation is brought up, what spiritual qualities they have and how they grow up, how active our children are in life, what lofty goals they serve.

This guideline is related to the formation of a culture of behavior in preschool children

Culture is a certain level of development of society and humanity, which is reflected in various aspects of people's lives and activities, in the material and spiritual values they create.

Spirituality is not only an indicator of the material and spiritual level, but also determines the

specific areas of human activity or life. This can be seen in the culture of labor, the culture of art, the culture of life, the culture of spirituality, and so on.

But culture, in the narrow sense, applies only to the sphere of people's spiritual life.

Spiritual culture includes consciousness, knowledge, ethics, education, law, philosophy, ethics, science, art, and literature.

Many scholars, including dictionaries and reference books, distinguish the content and essence of each of them in the definition of culture and behavior. They are interpreted together. But when the essence of the concepts is analyzed, each of them has its own meaning.

For example, the researcher U.Makhamkov says: "moral culture is a process of spiritual and cultural development of a person".

However, moral culture is an integral part of cultural spiritual culture, which is a set of behavioral norms of people specific to each society. Behavior is a set of human nature and behavior, and the culture of behavior is the observance of the norms of etiquette, expressed in the life of a person in accordance with the requirements of society, in his dealings with people, in various activities. Behavioral culture is that in society, a person expresses his attitude to individuals and to himself in the actions and activities that are manifested in certain ideological, spiritual beliefs.

The degree to which a set of behaviors and activities observed in a person can meet the requirements of society and the rules of behavior is a sign of his civilization.

Culture is usually conditionally divided into internal and external culture. Inner culture is the



inner world of a person, the inner spiritual image. A person will be mentally and morally developed, broad-minded, able to consciously control his actions, free and able to maintain his dignity.

Foreign culture is a set of ethical norms, rules of etiquette, being polite to people, being a rock in social life. Everyone should develop this inner and outer culture in harmony. A person who is able to combine internal and external culture is considered to be truly civilized.

As for the formation of a culture of behavior in preschool children, it is defined in the program "Kindergarten education" for all age groups. The process of forming a culture of behavior in children of preschool age is manifested in conscious performance of tasks, proper organization of the agenda, games and various other activities, activation of children's activities, interest in learning, the proper establishment of relationships.

This process consists of formation of the most important hygienic skills and competencies in preschool children, development cultural skills and competencies in different types of activities and in different situations and relationships, fostering certain elements of moral consciousness and moral emotion, is formed by acquaintance with the environment.

Behavioral culture is not a direct adherence to the rules of etiquette, but is closely related to the spiritual and moral feelings, perceptions, and directly strengthens them. Because the psychological and physiological characteristics of preschool children create favorable conditions for the formation of a culture of behavior. Preschool children are characterized by high intelligence, speed of understanding and intelligence.

This trait is due to their flexibility of the nervous system, their ability to react actively to the events around them, their sensitivity to what they perceive, attention, imitation and imagination. But they have not yet fully formed the experience of life. Accordingly, it is important for educators, parents, and other adults to turn a child's need for treatment into a social need. This educational influence is pedagogically correct and is considered necessary in the formation of a culture of behavior in a child of preschool age.

But it is expedient that all this should be done under the following conditions;

- to create a healthy relationship between adults in a children's institution;
- to establish a proper relationship between educators and parents;
- to activate the sphere of influence between adults and children;
- to set a strict agenda in groups, classes;
- to provide groups with training materials;

•to instill in children a positive attitude towards the environment around them.

The structure of behavioral culture in preschool children can traditionally be divided into the following important components:

- Activity culture;
- Behavioral culture;
- Hygienic culture skills.

The culture of activity can be found in the activities of children in the classroom, in the process of play, in the performance of homework.

Creating activity culture includes child labor, keeping one's place tidy during play and activities, completing chores, keeping toys and other belongings in order, and more.

Preschoolers are getting used to managing their activities. Changes appear in his behavior. It is formed in their activities, such as play, work, preparation for training, participation in training with interest. Activity as a criterion of culture can be considered as the desire of preschool children to volunteer, interest in the work they do, to understand its essence, to act independently and actively, not to be indifferent to the results of their activities, cooperation with peers and others.

The culture of communication is the child's adherence to the rules and norms of relations with peers and adults, that is, courtesy, mutual respect, the development of language skills, the ability to behave in public, in everyday life rules are included. While these qualities are taught to a child from the earliest days of life, at the age of 5-6 the child's ability to control their emotions helps to form a respectful attitude towards those around them, to prevent the qualities of delicacy, selfishness, selfishness and behavioral culture. begins to find.

Of course, the purity of speech and the culture of speech play an important role in the formation of a culture of communication.

The culture of communication is reflected in the fact that the child listens carefully to the words of his or her friend, is sincere in speech, gentle, keeps calm when speaking, addresses as "You" and so on.

Although it is more convenient to form a culture of communication in the educational process of the educator, in the process of well-structured communication, preschool education is usually more effective in the independent activities of children of everyday age, in everyday life. But even in such cases, the educator, the parents should make sure that the child of preschool age does not deviate.

Preschool is an effective period for children to acquire cultural and hygienic skills. Observance of cleanliness, dress, head and body are considered not only to comply with the requirements of hygiene, but also to follow the rules of etiquette. It is important to understand that a child's ability to make a good



impression on others, even with his appearance, is an important requirement of the culture of behavior.

Educators and parents must ensure that the culture of dress, cleanliness and nutrition of preschool children becomes a necessity for a person at all times, for the rest of his or her life.

Of course, the formation of a culture of behavior in preschool children does not happen by itself in kindergarten. In doing so, we should, first of all, make effective use of national values that reflect the unique characteristics of the Uzbek people, based on the age of children, the environment in their families and the psychological and pedagogical requirements.

The ancient traditions of the peoples of Central Asia, including the Uzbek people, include love of work, devotion to the motherland, respect for people, love, hashar, mutual assistance, and more.

The highest stage of the development of advanced traditions is the restoration of the national identity of independent Uzbekistan, the tradition of respecting its traditions and customs.

Respect for parents, which is typical of the Uzbek people, to treat them well, to behave in public, diligence, honesty, truthfulness, thoughtfulness, sweetness are the great virtues of the Uzbek people, includes moral behavior. Therefore, it is the main duty of the society and everyone to study the sources of spiritual culture, which are our national values, to follow the ideas put forward in them, to pass them on to future generations as values.

The use of values in the development of behavioral culture in preschool children is unique. Because during this period, children's behavior and will are formed. For example, in the process of socially useful activities, they develop the skills and abilities to follow the rules of behavior by following the rules of their group, helping their peers, taking a serious approach to doing different things in games and activities. This, of course, is greatly influenced by the family and kindergarten environment and national values.

As skills improve, they become mental skills. For example, doing morning gymnastics at home, sorting out their toys and clothes, tidying up their room, being polite to adults and their peers, and developing skills through daily needs. At the same time, children must consciously understand their behavior, draw the right conclusions and lead to a positive outcome.

In children, the following harmful behaviors can occur due to improper adherence to the rules of etiquette: soaking the nails with teeth, not washing properly, not following the rules of nutrition, going crazy etc.

In short, our values are an important educational tool in the physical, mental and spiritual development of children, as a key factor in finding

their future lifestyle, life and place in society. But how to choose the right way to direct children's games? It is important and necessary to use effective methods and techniques, taking into account the age characteristics of children.

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SELF-PERSUASION AS HABIT CHANGE TECHNIQUE: UNDERSTANDING THE SCIENCE BEHIND ADOPTING NEW HABITS AND MAKING THEM STICK

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ABSTRACT

The goal of this paper is to show how self-persuasion can be utilised to improve customer involvement in target behaviour. The scope of persuasion includes not only limited to inhibition of undesired behaviour, but also the encouragement of desired behaviour, significantly broadening the reach of this technique. Self-persuasion could be used as a marketing strategy to influence customers' buying decisions. This could be especially useful in circumstances when customers have a strong emotional attachment to products or behaviours. Self-persuasion has recently been shown to be a more efficient technique of limiting unwanted, addictive behaviour than direct persuasion, according to a recent study in health psychology. Further this paper highlights how self-persuasion can be effective in the fields of health, reducing addictive habits, sustainable practices and financial investments.

METHODOLOGY

Electronic literature databases were searched to identify studies that examined the relationship between self-persuasion and encouraging desired behaviour. This systematic literature review is guided by the Cochrane method, and the search method and findings are presented in accordance with the relevant sections of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Higgins and Green, 2011, Moher et al., 2009). Studies were included in the systematic literature review based on the following inclusion criteria: they must (a) quantitatively examine and report the relationship between self-persuasion & themes like sustainable practices, health, financial management and reducing addictive habits; (b) use a multidimensional conceptualization of indirect self-persuasion; (c) be published in an academic journal and public sector behavioural science reports; and (d) be available in English.

INTRODUCTION

What motivates consumers to purchase goods, pay greater prices, volunteer for a good cause, or increase their restaurant tip? Persuasion researchers and practitioners are eager to learn when and how

persuasion works to influence consumers. More precisely, indirect persuasion strategies are the subject of a large amount of research in marketing and related domains. Indirect approaches are more subtle and unconscious than explicitly presenting consumers with arguments or simply requesting that they change their behaviour.

Framing techniques, the foot-in-the-door technique, low-balling, door-in-the-face. One of the primary disadvantages of direct persuasion tactics is that consumers show reactance to persuasion. By approaching consumers in an indirect manner, one of the major disadvantages of direct persuasion strategies is that consumers show reactance to persuasion. Indirect persuasion increases the chances of a persuasion attempt to succeed.

In the field of health psychology and addictive behaviours, another indirect persuasion strategy has recently demonstrated promising outcomes. Instead of supplying consumers with arguments to persuade them, this approach encourages people to construct their own arguments regarding a given notion or activity (Kardes et al., 2001; Müller et al., 2016). Currently, the implementation of this strategy is primarily limited to the health domain, where governments and other institutions have traditionally communicated a clear



injunctive norm about the desired conduct (e.g. warning labels on cigarette boxes; Hamilton et al., 2008). Müller et al. (2009) found that expressing an injunctive norm by direct persuasion is a less effective method for modifying smoking behaviour than utilising self-persuasion. Although the approach of self-persuasion appears to be effective in modifying behaviour, the environment in which it was examined is of limited significance to marketers. Furthermore, the effects of self-persuasion have mostly been demonstrated in controlled experimental settings.

THEORETICAL BACKGROUND

According to research, information generated by oneself is viewed as more accurate and trustworthy, and hence more convincing, than information obtained from a third party (Hoch and Deighton, 1989; Levin et al., 1988). People have a tendency to compensate for information provided by an external source, but they fail to correct for the influence of self-generated information, according to Mussweiler and Neumann (2000). In other words, while people may and will resist persuasion attempts from others (Knowles and Linn, 2004), they cannot resist persuasion attempts from themselves. Furthermore, when people are challenged to develop arguments, they tend to come up with the most persuasive and compelling assertions (Greenwald and Albert, 1968; Slamecka and Graf, 1978). This shows that allowing people to persuade themselves to influence consumer behaviour might be more effective.

The persuasion technique that makes use of this bias in favour of self-generated information is referred to as self-persuasion (Aronson, 2007). For example, Müller et al. (2009) demonstrated that self-persuasion is a more effective technique for inhibiting smoking behaviour, compared to external persuasion attempts. Regular smokers, who were instructed to write down arguments against smoking, waited longer to light up a cigarette compared to smokers who read arguments against smoking provided by the experimenter.

Self-persuasiveness is a persuasion strategy that takes advantage of this bias in favour of self-generated information (Aronson, 2007). Müller et al. (2009), for example, it was found that self-persuasion is more successful than external persuasion in reducing smoking behaviour. Regular smokers who were asked to put down arguments against smoking took longer to light up a cigarette than smokers who read the experimenter's arguments against smoking. Recent study has revealed that it is not essential to write down

arguments to induce self-persuasion; instead, asking questions, encourages people to come up with arguments (Loman et al., 2015), a process that is considered to be automatic, is an easy way to induce self-persuasion (Fitzsimons and Williams, 2000). Several research have shown that simply asking participants questions about why smoking is dangerous (rather than making claims) results in a greater smoking-related risk perception (Glock et al., 2013) and longer absence rates (Müller et al., 2016).

In terms of other health-related behaviours, asking questions rather than making statements has been proven to increase negative outcome expectancy perception (Krischler and Glock, 2015), lower alcohol consumption rates (Loman et al., 2015), and an increase in exercise behaviour (Williams et al., 2006; Fitzsimons and Moore, 2008). Based on these findings, regardless of the behaviour we're seeking to change, self-persuasion should be our first choice when trying to influence someone. However, most individuals are aware of what they should be doing whether it comes to smoking, drinking alcohol, or exercising, thanks to government initiatives that attempt to encourage a healthy lifestyle by disseminating injunctive norms regarding health-related conduct.

However, as could be expected (Johnson and Eagly, 1989), this awareness did not lead to a greater relevance of the persuasive messages; rather, it appeared to result in a form of immunity against anti-smoking messaging. In other words, persons who engage in addictive activities, such as smoking, may be resistant to direct argumentation because they have formed defensive responses in response to repeated government efforts that express injunctive norms. Thus, based on this research, it may be stated that self-persuasion is superior to expressing injunctive norms for modifying addictive behaviours. However, it is unknown if this is also true for activities that are not subject to injunctive norms (e.g., those promoted by government campaigns) and for which consumers are less likely to have acquired strong defensive responses than addictive behaviours.

SELF-PERSUASION AND SUSTAINABILITY

Sustainable Electricity Consumption Practices

Polycab Wires has launched a new campaign called 'Connection Bachat Ka, Connection Zindagi Ka', which includes a TV commercial in which the family head is attempting to save energy and reminds us of the financial and environmental benefits of simply turning off lights, turning off televisions, and



unplugging mobile phone chargers. However, while the ad raised consumers' knowledge of the possible

savings; it did not translate into durable changes in behaviour, according to a research.



Fig 1: Polycab Energy Saving Commercial

If every home, business, and office park is required to be more energy efficient, the quantity of energy we all consume will decrease. Bounded rationality, on the other hand, places cognitive restraints and limitations on humans. However, we may adopt the principles of behavioural science to help us here. 1) Reciprocity: in exchange for giving and receiving, the persuaded individual feels obligated to the persuader; 2) Commitment: persons are under pressure to act in a way that reflects their commitment; 3) Social Acceptance: obtaining the approval of others; 4) Affection: People are more influenced by those with whom they have a stronger bond; 5) Power: People

with more power have a higher ability to influence others; 6) Scarcity: When something is scarce or limited, it becomes more valuable.

The Victoria State Government's Australian campaign, which features helium-filled black balloons emerging from a clothes dryer, filter coffee maker, central heating vent, television, and other electronic equipment, is a more impactful variation of this commercial conveying the same message. According to the advertisement, every year, the average home produces 200 thousand balloons (each emitting 50 gms of greenhouse gas), all of which contribute to climate change.



Fig 2: Victoria State Government Commercial



Lack of openness and nudging, according to the authors, is one of the key causes of non-reduction in energy usage and waste. One of the primary issues facing residential consumers is the cost of electricity consumption, because most of the time, the consumer will only know the amount of energy consumed when the light bill arrives at the end of the month. The availability of immediate and indirect feedback on consumption in dwellings through systems and apps, according to the author, can influence this behaviour and lead to cost savings.

Sustainable Water Consumption Practices

To address the issue of increasing water scarcity, Sunday-Mid-day launched the "Bucket Sundays" initiative. The programme encouraged Mumbai residents to use only one bucket of water instead of a shower on Sundays to reduce waste of flowing water. With the help of Radio City's "EK Balti Sunday" and "Bucket Sundays" programmes, which were vigorously promoted on-air, on-ground, in print, and on digital platforms, 1,07,58,400 litres of water were successfully saved in just four weeks.



Fig 3: Radio City's 'Ek Balti Sunday' Initiative Poster

Another effective campaign was Hindustan Unilever's "The Shower," a water conservation film that makes an important point about how we all need to do our part to conserve water. Instead of presenting judicious water use in a city, the commercials featured the first sight of a contemporary glass toilet in a drought-stricken village. The sequence conveys the point by affecting your senses and forcing you to realise the frightening concept of how much water we squander. The rallying call asking us to save water compels our hearts to act, which is the film's ultimate goal. As a result, the behavioural science concepts of empathy gap and reciprocity are being used.

Using the behavioural science idea of message framing to change behaviour can be an important aspect of offering water demand solutions. Households who got the information in the form of water-saving tips/strategies were more concerned about water scarcity and more likely to act. Increased households'

capacity (self-efficacy), opportunity, and/or motivation in water-conservation acts mediated the message expressed in terms of specific water-saving tips/strategies, according to mediation analyses.

Self Persuasion & Reducing Addictive Habits

Have you noticed anti-smoking advertisements before movies start in a theatre? If yes, ever wondered are they effective? Conversely the answer is such commercials can help to immunise non-smokers against the influences of film stars' smoking. Anti-smoking advertisements are ineffective, especially if the smoker gains self-esteem from smoking because it "makes them look cool." As a result, messages that emphasise the risk of mortality encourage self-esteem-building behaviours. Anti-smoking messages are assumed to have a simple, direct, and strong impact on individuals by health campaigns, but the indirect approach must be understood.

Thus, research suggests that campaigns succeed not by persuading individuals to avoid tobacco, but rather by assisting in the changing of social norms around smoking, in which the smoker tries to persuade himself or herself to quit smoking in order to conform to the social norms. The message will not be effective unless people pay attention to it, understand it, accept it, and assimilate it into their self-concept. In 2018, the Indonesian government initiated anti-smoking

initiatives aimed at changing people's minds about smoking.

Social norms are beneficial in modifying behaviour and in instilling confidence in persons who want to quit smoking. The commercial actively aims to work on the notion of social norms by advocating the usage of the same money spent on cigarettes to instead purchase sanitary napkins to boost female cleanliness in the Indian context. It seeks to redefine what it means to be "cool" when doing the right things.



Fig 4: Akshay Kumar's 'No Smoking' Campaign

According to previous research, marketers should use six tactics to help individuals form new habits, including creating a stable, supportive environment for

the new habit, making the new behaviour as simple as possible, and allowing people to develop distinctive cues and rewards.



Fig 5: Six Strategies for Building Habits. Source: The Behavioural Architects 2017 based on Neal, D. "The Science of Habit" 2015

Self-persuasion and Healthy Eating

Unhealthy eating habits have evolved into a global health threat that must be addressed. Direct

persuasion is a method of persuasion that uses direct communication to influence people's attitudes or behaviours. People are informed what they should and



should not do immediately. Such an approach has been found to be ineffectual and capable of creating just a temporary shift in attitude, if at all. Furthermore, direct persuasion may have a boomerang effect, resulting in increased unhealthy eating, likely because this direct method tends to elicit psychological reactance and defensive emotions in the listeners of the message

Self-persuasion is a subtler persuasive strategy that involves asking people to deliver a public statement about the benefits of the target behaviour or asking questions that can elicit positive sentiments about the target behaviour. Presenting people with open-ended questions is one of the simplest and least expensive methods.

Self-persuasion tends to be more effective in motivating those with individualistic origins to eat healthier, while direct persuasion appears to be more effective in motivating people with collectivistic backgrounds. People are convinced by their own thoughts in response to the communication, rather than by the message itself, according to this viewpoint. Persuasive appeals that generate predominantly positive ideas about a communication (e.g., if I eat veggies, I'll be smaller and more attractive) elicit more agreement than messages that trigger negative thoughts (e.g., if I eat veggies, I won't have enough energy later) that do not elicit such responses.

Researchers from the University of Birmingham discovered that social-based messages advocating healthy eating can increase fruit and vegetable consumption while decreasing high-calorie snack consumption. People have long been aware that they modify their behaviour to what they believe is socially acceptable in that context, and eating choices are no exception. We may strive to eat more fruits and vegetables if we are taught that other people in our social group do as well. As a result, societal norms and framing principles from behavioural science play a vital role in propagating enhanced healthy eating habits among the public.

Self-persuasion and Financial Investments

Advertisements are used by mutual funds to interact with its investors. According to Jain and Wu (2000), mutual fund advertising and investing decisions have a strong cause-and-effect relationship. Mutual fund businesses rarely use standard advertising strategies like massive ad images, emotional appeals, or celebrity endorsements, which have long been proven to improve ad readership through advertising research.

Many mutual funds advertise and run large advertisements in well-read consumer investment

magazines to attract investment flows by convincing consumers that the mutual funds are successful and good quality through the obvious expense of large advertisements in magazines with high advertisement placement costs, according to a study of behavioural factors. Furthermore, they advertise with a large amount of copy to persuade consumers who, while unlikely to read the entire text, will likely perceive the mutual funds to be honest because they conclude that the large amount of information indicates full disclosure and high quality and that there must be many good things to say about them.

Relevant information that elicits an emotionally favourable response can also be used in effective persuasion. If the loads and management fees to administer a mutual fund are low relative to competing mutual funds, one might expect mutual fund advertisements to include transaction cost information to and try to increase sales to price-sensitive consumers or try to increase sales to consumers using a price-quality heuristic if the loads and management fees to administer a mutual fund are high.

Self-Persuasion strategies to Encourage Healthy Habits

It's crucial for any marketer to be able to have a reliable and effective strategy for building new habits and making them stick. First, we need to develop a complete understanding of the habitual behaviour in focus, and then analyse how it might be built, maintained, broken or changed. Habits are always triggered by a cue, the cue triggers our memory of doing the same action or routine previously and helps to initiate it again. Take an example of a person discharged from rehabilitation for an addictive smoking habit.

They might be cued by a particular time of day, an object in our surrounding environment (Local store where they used buy cigarettes) or being in the environment as a whole (chain-smoking peers), a preceding behaviour (reaching out for a lighter), or even a person or sound (cigarettes fumes). When such an environment is stable and consistent – when we are in the same place at the same time of day - we are more likely to carry out a particular behaviour, deeply embedding a habit.

If we believe we will be rewarded for repeating behaviour, we are more likely to do so. It is this element which can fix behaviour in place so it becomes a habit – to the extent that we might not even need the reward once the behaviour has become automatic. We are motivated by many different types



of rewards – from intrinsic to extrinsic, conscious and subconscious, physical to physiological, short-term or long-term, one-off or a reward that is cumulative and builds up over time. We may build a habit with just a single reward, or with a mix of different types of rewards.

Intervening during a large, permanent life transition, such as a new job or career, moving house, or the start of a new life stage, such as going to university, having a baby, or retiring, is one of the finest ways to promote new habits. These occurrences frequently include changes in the surrounding environment and/or daily routines, implying that established habits are no longer as automatic as they once were.

CONCLUSION

To summarise, the application of self-persuasion extends beyond the inhibition of addictive behaviour to the facilitation of desired consumer behaviour, significantly broadening the scope of this strategy. However, because the focus of these studies was tipping behaviour, caution should be exercised when extrapolating these findings to the broader realm of consumer behaviour.

More study is needed to understand the types of consumer behaviour for which self-persuasion is effective, as tipping behaviour may be influenced by social desirability or customer experiences (Rind and Bordia, 1996), as well as willingness to spend (Kim et al., 2009). Self-persuasion, for example, could be a particularly useful method for persuading highly involved customers.

When it comes to high-involvement products like vacations, vehicles, and insurance, self-persuasion may be most effective (Percy and Donovan, 1991). Furthermore, it has been established that framing arguments as questions and presenting these questions to an audience can be quite powerful in a mass-media context (Glock et al., 2013; Müller et al., 2016).

A new model of consumer behaviour highlights the phenomenon of motivated preference, which has led to a revised view of advertising's role (i.e. self-persuasion). It becomes conceivable to imagine how persuasion might impact rational customers when they want to change their decisions. It's possible that the influence is mutual. As a result, the motivated preference proposition answers a key question about persuasive advertising primitives.

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ASTROLOGICAL STUDY OF THE IMPACT OF VIRGO LAGNA ON DIABETES

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ABSTRACT

The study of astrology encompasses a wide range of categories within oneself. The most prominent of these is medical astrology. In ancient times, astrology was considered highly important for health. The development of medical astrology has been influenced by various factors at different times and in different countries. An ancient art of divination, astrology dates back thousands of years. The astrological art relies on movements of the sun, moon, and planets, as well as the properties of stars in outer space, to predict future events. Physicians would also treat patients surgically, and astrologers, in this case, were the ones who handled the medicine very well. Based on this, they predicted the harm to the country, knew the disease coming through it and treated the medical system accordingly.

KEYWORDS - Navagrahas, Dasa, Buddhi, Andara Nathan, Lagna, Rahu, Ketu.

I. INTRODUCTION

'Diabetes in Medical Astrology' presents a comprehensive review of diabetic patients being treated and medications available in hospitals and using astrology and the structure of the planets, this study seeks to determine which planets cause diabetes by analyzing their horoscopes, as well as how to protect themselves from this disease using astrology. Astrological medicine has been practiced by its practitioners as a way to synthesize the core elements of knowledge of astrology, medical practice, and medical knowledge. The common saying is, "Life without disease is life without wealth." On this basis, no matter how much wealth one has, it is a wealth that will last forever in one's life without disease. Nature has shown us in many ways that every living thing is unique. Although everyone in a family has been following the same diet for many generations, not everyone in the family gets the same disease. This does not mean that diet alone is the root cause of diabetes.

II. NAVAGRAHAS AND GOODNESS

Navagrahas are able to know about one's health depending on where they are located in one's horoscope and their strength. The lord of the zodiac is supreme, and being in a friendly house or being with the auspicious planets or having the vision of the planets is not detrimental to physical health. The

lord of the eighth house will be healthy even if seen by the planets. The presence of the planets in Libra 11th, 12th with the strength of the target. The target is Venus and the planets are in 1st, 2nd and 3rd place. There is health in being Venus in literature. Both sides of the aisle are healthy despite the auspicious planets. A disease-free life if the 12th house is weak and the 8th house is strong and the 10th house is strong. The Moon is in conjunction with the Venus from places 6th, 8th, 12th, and the target is healthy if viewed by the Venus.

III. IMPACT OF MOON, JUPITER, VENUS AND SATURN

A. Moon Planet

Mother, eldest daughter, mother-in-law. Elder sister, travel, change, disappointment, pure water, holy river, food, groceries, foreign trade, foreign travel, sea travel, theft, nurse, depreciation, change of life. Disillusionment in life, intellect, art, all the arts, cost, conversion, Instability, Medical Assistants, Female, Water, White, Awesome, Quiet Park, Rapid Tourism, Improper Sex, Generosity, Imagination, Fluid, Movement, Extreme Speed, Extreme Falls, Theft, Extortion, Migration, Goddess Devotion, meekness.

**B. Jupiter Planet**

Yellow, Minister, Divine Faith, Dignity, Self-Wisdom, Spiritual Texts, Enlightenment, Philosophers, Jasmine, Monk's Location, Betel, Apple Tree, Coconut Tree, Flowering Plants, Elephant, Rice, Cow, Worship, Divine Places, Bungalow, Cancer, Chest Pain, Flatulence, Liver Diseases, Jaundice. Life, Guru, Teacher, Child, Money, Native, Temple, Supreme Court Judge, Priest, Reciter, Treasurer, Respect, Elder, Respectable, Discipline, Culture, Treasury, Banks, Gas, Brain, Fat, Luck, Good Fortune, Higher Education, Charitable Thinking, Counseling, Priests, Law, Religion, Prestige, Male, Heaven.

C. Venus Planet

The secret diseases to be Venus in the 6th house, In hiding places diseases, dizziness, thirst and drought occur. Affected by diseases such as measles. To be in Venus 12th house - Damage to the eyes, damage to the glands in the body. Silk Dresses, Marriage, Silver, Mahalakshmi, field, aunt, elder sister, luxury vehicle. Luxury house, Cinema, Glamour, Awesome, Resort, Sperm, Aesthetics, love, lust, money, homemaking, high quality liquor, Cinema Shed, Automotive Factory, Art, Water, White Color, Brahmin, Decorator, Perfumes, Clever, Luxury lover, curly hair, bridal, cool Anatomy, Medium Height, Quiet Look, High Science, Business, Heaven, Diabetes, Eye Disease, Sexually Transmitted Infections, Diseases like kidney disorder etc.

D. Saturn Planet

Eeswaran, Judge, Iron, Industry, Delay, Temperance, Temperance, Servants, Black, Old, Maturity, Difficulty, Old Building, Famine. Punishment, laziness, fear, addictive thinking, slowness, slowness of action, simplicity, blue, defaulter, firm decision making, cruelty, stubbornness, Gas body, messenger, digestive organ, jaw, hip, nerve, foot, heel, knee, front leg, typhoid, asthma, ulcer, rheumatism, indigestion, flatulence, toothache, neurasthenia, pyrethrum temple, coal, coal, Bear, buffalo, donkey, bamboo, mustard, crushed fruit, tea, tobacco, etc.

IV. ASPECTS IN DIABETES HOROSCOPES

1. The planet in the star of the sixth lord creates or develops the disease of the planet seen with the sixth lord.
2. The sixth house in Lagna brings planetary disease and the planet standing in a star, a planet belonging to, a planet seen or developing disease that develops diabetes.
3. The two hostile planets are in the same zodiac sign or look at the same zodiac sign, the zodiac sign is to be treated for disease or surgery or injury.
4. Dasa, Buddhi brings disease when traveling in the negative zodiac signs in the constellation of the planets standing in the star of Andara Nathan.
5. The most visible planet in a horoscope and the least visible planet can cause or develop disease in the horoscope.
6. Rahu, Ketu, which is close to a lagna, is capable of congenital disease.
7. The planets that saw the sixth lord will get the disease of signfulness or housefulness or the planets who saw the sixth lord will get the disease of signfulness and housefulness.
8. The disease occurs because the planets have a transitional relationship with each other and are associated with six-eighth house interactions.

V. RULES IN DIABETES HOROSCOPE

1. Diabetes is caused by the presence of Venus, Guru, Saturn, Moon planets in the 6th, 8th, 12th house lord.
2. 6th, 8th, 12th house lord if water zodiac sign has 6th lord in it then diabetes will occur.
3. Venus, Guru is one of these 6th, 8th, 12th house lord is in water zodiac so diabetes will occur.
4. Guru, Venus, Saturn planets Two of the three together cause diabetes because another sees them.
5. Guru Venus planets combination Diabetes is caused by being in or seeing the water zodiac.

VI. DIABETES HOROSCOPE TABLES**Example Horoscope : 01**

Date of Birth	: 21.01.1963	Time of Birth	: 10.40 PM
Place of Birth	: Serukalathur	Lagna	: Virgo
Signs	: Scorpio	Star	: Jyeshta - 2
Dasa Bhukthi	: Mercury Dasa 12 Years 02 Month 00 Day		



JUPITER	<u>RASI</u>		RAGU MARS
KETU,SATURN SUN MERCURY			
	MOON VENUS		LAGNA

LAGNA SUN,MARS JUPITER			SATURN
MERCURY KETU	<u>NAVAMSA</u>		
VENUS MOON			RAGU

Rules applied in horoscope table:

Rule 4: Jupiter, Saturn planets together cause diabetes because another sees them.

Example Horoscope : 02

Date of Birth : 27.06.1991

Time of Birth : 01.10 PM

Place of Birth : Thiruvarur

Lagna : Virgo

Signs : Saggitarius

Star : Uthrashaada - 1

Dasa Bhukthi : Venus Dasa 19 Years 08 Month 03 Days

			SUN MERCURY KETU
	<u>RASI</u>		MARS JUPITER VENUS
SATURN			
MOON RAGU			LAGNA

	MERCU RY SATURN	KETU	
VENUS MARS	<u>NAVAMSA</u>		
SUN			LAGNA MOON
JUPITER	RAGU		

Rules applied in horoscope table:

Rule 4: Guru, Venus planets together cause diabetes because another sees them.



Example Horoscope : 03

Date of Birth : 18.03.1994 Time of Birth : 07.10 PM
 Place of Birth : Chennai Lagna : Virgo
 Signs : Taurus Star : Rohini - 1
 Dasa Bhukthi : Moon Dasa 08 Years 03 Month 20 Days

SUN VENUS		KETU MOON	
MARS MERCURY SATURN	<u>RASI</u>		
	RAGU	JUPITER	LAGNA

	JUPITER MOON		LAGNA
MARS	<u>NAVAMSA</u>		RAGU
SATURN KETU			SUN
VENUS	MERCURY		

Rules applied in horoscope table:

Rule 1: Diabetes is caused by the presence of Saturn planet in the 6th house lord.

VII. CONCLUSION

This study, entitled Diabetes in Medical Astrology, provides a comprehensive overview of patients being treated for diabetes in hospitals and the medications available to them. The purpose of this study is to find out how astrologers and planetary systems contribute to the horoscopes of diseased planets by obtaining their horoscopes and to learn about the effects of diabetes on others in the future and how to protect against it.

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BUSINESS PLANNING AND PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES IN ANAMBRA STATE

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ABSTRACT

The growing significance of SMEs cannot be overemphasized in view of its contributions to the economic growth of the State through employment. The major objective of this study is to establish the relationship between Business Planning and the Performance of SMEs in Anambra State. The specific objectives are: to examine the relationship between benchmarking and earned income of the operators of SMEs in Anambra State; to ascertain the relationship between brand identity and deduction for goods returned to SMEs operators in Anambra State and to determine the relationship between accuracy of the action plan and discounts in SMEs in Anambra State. The study was anchored on McClland's theory of needs, goal setting theory, social and recognition theories. Three research questions and Hypotheses which are in line with the objectives guided the study. The study adopted survey research design. Both primary and secondary data were used to carry out the study. A five point Likert scale structured questionnaire was used in collecting data. A sample size of 400 was obtained through the use of Taro Yamane and Pearson's Product Moment Correlation Coefficient was used to test the hypotheses. Findings from the test of hypotheses carried out indicates that there is a strong positive and significant relationship between benchmarking and earned income; that there is a significant relationship between brand identity and deductions for goods returned; finally, there is a significant positive relationship between accuracy of the action plan and discounts in SMEs. Since there is a positive strong relationship between decomposed variables of the independent and dependent variables then we concluded that business planning plays a crucial role in determining the performance of SMEs. The researcher recommends among others that every SMEs need to embrace business planning for effective performance.

INTRODUCTION

Background of the Study

Business in Nigeria has been classified as Small, Medium and large (Ayozie, Oboreh, Unukoro & Ayozie 2013). In both the developed and developing countries the government is turning to small and medium industries as a means of economic development and a veritable means of solving problems. It is also seen as a seedbed of innovations, inventions and employment. Ayozie (2013) states that Small and Medium Enterprises (SMEs) assist in promoting the growth of the country's economy hence the need for business to actively respond to environmental challenges has become imperative as it offers business firms a competitive edge in today's business world. Based on this premises every business organization regardless of its size must have some form of business plan and adherence to its processes in order to overcome every business challenges or pit falls. Business planning process is used by management to

establish goals, schedule activities for achieving those goals and include methods for measuring progress. SMEs are expected to play an increasing role in a country's socioeconomic development and the quality of the SMEs is very critical in the economic development of the state or nation at large.

In view of the above, small and medium scale enterprises operate within the economic environment characterized by volatility, dynamism and competitive markets that may seriously threaten their survival. The operating environment for SMEs is constantly changing in face of a volatile economic environment and a highly competitive market. For SMEs to stand firm inspite of volatility and competitive environment it needs to engage in effective business planning process. Unstable and competitive environments require increased planning capability and comprehensiveness, as well as greater planning flexibility. Business planning is used as a weapon to cushion SMEs against the unstable business



environment in order to ensure their survival and growth. Though, some SMEs operators are ignorant of it, which are reasons for their poor performance as a result of lack of or inadequate business planning. Based on this, this study set out to carry out the research on some selected small enterprises in Anambra State.

Plan will prove the strength or weakness of the organization thereby enabling them to invest/lend money to the SME or refrain from it. Also, information from some of their staff is very important in preparing the business plan. The need for business planning is vital in emerging economies like Nigeria where the business environment seems unstable, business cycles alter and competition is tightening. From the point of view of the changing business environment, planning can also be a continuous process, because changes in business environment are continuous. The idea here is not that plan must be changed in accordance with changing factors of the business environment; rather it means that planning must be continuous because commitments once made become fruitful over a short period of time.

Planning can be conceived as the process by which managers set objectives, assess the future, and develop courses of action designed to accomplish these objectives. The planning processes actually include the determination of appropriate goals and objectives and the optimum timetable for achieving them. Business planning therefore is the process of determining a commercial enterprise's objectives, strategies and projected actions in order to promote its survival and development within a given time frame. An effective business plan supports organization's growth, helps to manage cash flow and develops the course of action. Apart from that it provides honest evaluation of firm's strengths and weaknesses, states clearly the vision and mission and follows the performance (Ashe-Edmunds 2016; Gleeson 2016). An organization's business plan is an overall game plan which management uses to position the business for success in its chosen target market, compete effectively, maximize customer satisfaction and deliver superior value to all its stakeholders over a period of time usually one to five years. In view of this SMEs often implement business planning to improve organizational productivity.

Small and medium enterprises (SMEs) are vital components in economic development in countries around the world. They contribute significantly to economic development, but in some cases they are susceptible to poor performance and ultimately collapse basically because of lack of effective planning before commencing the enterprise (Nkwe 2012). Also, few entrepreneurs who managed to plan before starting their businesses fail to follow the principles as stated in the plan they prepared for their businesses or abandon it entirely. This means that business without a solid plan is bound to fail. Based on the above, business planning in the course of starting-up any business venture or nurturing existing one is very important because business

planning is the life wire of every business to achieve increase profitability, stability, market share and sales growth.

Anambra state is one of the South-Eastern states in Nigeria, is a state highly dominated by business men and women. SMEs assist in promoting the growth of Anambra State's economy and that of Nigeria in general. Presently, according to Ayozie (2013), all the levels of government at different times have policies which promote the growth and substance of SMEs. Despite these policies and the aim for enacting them there still exist failure in SMEs in the state. SMEs have played and continued to play significant roles in the growth, development and industrialization of many economies in the whole world. In the case of Anambra State, SMEs have performed below expectation due to a combination of problems which range from attitude and habits of SMEs themselves to environmental factors, instability of governments and frequent government policy changes and somersaults. The major problem areas of SMEs in Anambra include management, access to finance, infrastructure, government policy inconsistencies and bureaucracy, environmental factors, multiple taxes and levies, access to modern technology, unfair competition, marketing problems, while non-availability of raw materials locally is the least problem.

The potentials and opportunities for SMEs in Nigeria to rebound and play the crucial role of engine of growth, development and industrialization, wealth creation, poverty reduction and employment creation are enormous. The realization of this requires a paradigm shift from laying lip service to a practical radical approach and focus on this all-important sector of the economy by the government realistically addressing the identified problems. While SMEs themselves need to change their attitude and habits relating to entrepreneurship development, the governments need to involve the SMEs in policy formulation and execution for maximum effect. There is also the dire need to introduce entrepreneurship education in our schools and within the business ecosystem.

Promoters of SMEs should thus ensure the availability or possession of managerial capacity and acumen before pursuing financial resources for the development of the respective enterprises.

This study will unveil the secret of business planning and the need for preparing a business plan in order to enhance the performance of SMEs in Anambra State.

Performance simply means how well or badly something is been done. The performance of Small and medium Enterprises (SMEs) is very crucial. This is because it is the backbone upon which every economy relies most for its well-being. Hence SMEs reduces the issue of unemployment, increases revenue generation, reduces poverty, and increases the standard of living of the citizen. SMEs play an important role as a breeding ground for entrepreneurs and a provider of solutions to



address the problems of unemployment, job creation, innovation and long-term economic development (Eniola 2014). The performance of Small and Medium Enterprises in Anambra State seems to be below expectations. Upon this, this study seeks to find out the causes of poor performance of SMEs in the state and the remedies to the causes for effective performance of SMEs in Anambra state just as is obtainable in the states mentioned earlier.

STATEMENT OF THE PROBLEM

The operators/owners of Small and Medium Enterprises in Anambra State are faced with a lot of problems especially in the issues of lack of measures or value evaluation. They seem to be ignorant of the vital roles of measure evaluations in increasing business sustainability and revenue. Thus, they fail to put these variables into consideration in their initial business planning processes. Measures involve norms which should be maintained and monitored in order to guide the day to day activities of the enterprises in attainment of the expected income. Without it the operator(s) will keep doing whatever that pleases them without consideration of its consequences in the life of the business. Measures are taken in order to check-mate actions against expectations. Measures include avoidance of selling of substandard products. When poor quality goods are sold to customers, it affects the progress of such firm by leading to loss of customer(s) to other competitors for not satisfying their need; decreasing the firm's revenue; affecting the cash flow of such firm because the customers will return the product and demand back the cash they paid for such; and will make the firm to be stocked with inferior goods. This may eventually affect the capital of that business thereby affecting its continuity.

The Second measure is the issue of keeping daily records of the business. Some of the SMEs purchase goods without having the record in a purchase book. In the same way they sell without recording what was sold and the amount it was sold on daily basis. This makes it difficult for them to ascertain when they are overstocked with a particular product, the amount of revenue they have acquired, if there is progress or not, and when to expand or invest the money realized in other moving ventures. Another important challenge is punctuality. There is a saying that punctuality is the soul of business - some of the SMEs operators/owners failed to recognize it. They feel that the business is theirs and they can be there at the time that pleases them. This habit affects the progress of the firm because some customers feel it is best to buy goods from the owner and not from the apprentice because customers believe that goods are sold at the right price when they purchase directly from the owner but purchasing from apprentice or shop attendant can make cost of the goods to be on the high side. Based on this, those SME owners that are guilty of such bad habit find it difficult to experience customer retention

which affects the income of the firm. Also, customers need to be treated with care, but some of the SMEs owners/operators treat their customers with disrespect, forgetting that without the customers' patronage their business will collapse. They do not seem to understand that the customer is always right.

Operators/owners of SMEs in Anambra State do not seem to care about the impression they are making. Who do people say they are in terms of business operations? Do people speak negatively or positively about the way they carry out their businesses? Are they mostly known as people who are truthful in business, selling original items, selling at minimum cost, giving bonus for buying in large quantity or during festival period?

They do not seem to care that the behavior one exhibits in business negatively or positively affects the life of such enterprise. If the behavior is negative it scares away customers, but if it is positive it will not only sustain existing customers but draws new ones thereby sustaining the life of such enterprise. All these problems of SME operators in Anambra State have motivated the researcher in carrying out this study.

OBJECTIVES OF THE STUDY

The broad objective of this study is to establish the relationship between business planning and performance of SMEs operating in Anambra state. The specific objectives are:

1. To examine the relationship between benchmarking and earned income of the operators/owners of SMEs in Anambra State.
2. To ascertain the relationship between brand identity and deduction for goods returned to SMEs operators in Anambra State
3. To determine the relationship between accuracy of the action plan and discounts in SMEs in Anambra State.

Research Questions

The following questions guided the study:

1. To what extent has benchmarking influenced earned income of the operators/owners of SMEs in Anambra State?
2. To what extent has brand identity influenced deduction for goods returned to SMEs operators in Anambra State?
3. What is the relationship between accuracy of the action plan and discounts in SMEs in Anambra State

Hypotheses

The following alternative statements of assumption were put forward to help reach a verifiable conclusion on the stated objectives:

- Ha₁ Benchmarking has positive influence on the earned income of the operators/owners of SMEs in Anambra State.



Ha₂ Brand identity has significant positive influence on the deduction for goods returned to operators of SMEs in Anambra State.

Ha₃ There is significant positive relationship between accuracy of the action plan and discounts in SMEs in Anambra State

SIGNIFICANCE OF THE STUDY

This study will be beneficial to some personalities among which are Higher Institutions of learning, Government and its institutions, Business communities and researchers. Students participating in the activities of business planning – Development of business plan can become a new source of funding small business enterprise or give the students opportunities to be employed in firms or become business consultants.

Higher institutions of learning: this study will assist higher institutions in Anambra State in nurturing sound business planning idea for their students and exposing them to great business opportunities. This study will enlighten the institutions on how to design business plan and need for business planning to take care of the students concerned in order for them to become great employers in the SME environment.

Government and its institutions: the governments of every nation always want and look for solution(s) to her socio-economic problems. SMEs have been identified as an element in solving socio-economic issues bedeviling Nigeria which Anambra State is not an exception, and it is evident that SMEs in Anambra State face harsh challenges in the area of policy, economy and knowledge. The study will serve as an eye opener for the government to understand the area(s) SMEs in Anambra deserve her attention and such will ensure that adequate assistance/attention is given to the SMEs to encourage them for effective performance.

Researchers: It will serve as a reference material for future researchers. Also, the recommendations and area for further research put forward by this study will increase the interest of researchers in this area of study.

Business ecosystem: the outcome of this study will serve as a basis for business start-ups and existing businesses to understand the need to plan ahead before commencing business, as well as putting the plans into action (and evaluate the actions taken in order to overcome some of the challenges at hand and achieve positive performance like increased profitability).

SCOPE OF THE STUDY

Since this study is centred on “Business Planning and Performance of SMEs in Anambra State” the study focused on selected SMEs (traders business outlets) from the three Senatorial zones in Anambra State (Anambra North, Anambra South and Anambra Central). Anambra North, comprising of Awka North and South, Njikoka, Dunukofia, Anaocha, and Idemili North and South Local Government Areas; Anambra Central, is made up of Onitsha North and South, Ogburu, Oyi,

Avamelu, and Anambra East and West Local Government Areas; and Anambra South consisting of Orumba North and South, Aguata, Ihiala, Ekwusigo and Nnewi North and South Local Government Areas. The focus is to ascertain the relationship between benchmarking, brand identity, accuracy of the action plan and earned income, discounts, and deduction from returned goods.

LIMITATIONS

The researcher encountered setbacks and limitations due to fear and unco-operative attitude from the respondents. Some of the respondents refused to open-up and rejected the questionnaire due to ignorance and fear. The challenge was mitigated by counseling and convincing them of the benefit they will derive from the study and assuring them that it is not meant for increment in their tax rate. This prompted their assistance in completing the questionnaire and opening up to the researcher.

METHODOLOGY

3.1 Research Design

The study applied survey research design because it is one in which a group of people or items is studied collecting and analyzing data from only a few people or items considered to be representative of the entire group (Onyeizugbo, 2013).

3.2 Sources of Data

The study used both primary and secondary sources of data

3.3 Area of Study

The study was carried out in Anambra State. The focus of this study was limited to the three senatorial zones (Anambra North, Anambra South and Anambra Central) in Anambra State.

3.3 Population of the study

The population of this study comprised of the SMEs owners/managers of the selected SMEs from the three Senatorial zones in Anambra State. The reason for the concentration on the owner/manager is because the variables under study are core strategic functions of the SMEs. The SMEs were chosen because they are accessible in term of generating useful information for this research work. The population of the study is 1,504 Small and Medium Enterprises. (SMEDAN 2017).

Table 1.1 Population of the Study

SENATORIAL ZONES	POPULATION
Anambra Central	416
Anambra North	508
Anambra South	580
Total Population	1,504

Source: SMEDAN 2017

3.4 Sample and Sampling Technique

Taro Yamane was used to determine the sample size. It is denoted by the formula below:



$$n = \frac{N}{1 + Ne^2}$$

where

n = Sample size

N = Population size

e = Sampling Error (0.05)

$$n = \frac{1504/1 + 1504(0.05)^2}{1504/1 + 1504(0.0025)}$$

$$1504/3.76 = 400$$

$$n = 400$$

3.5 Method of Data Collection

Structured questionnaire was used in collecting data. The questionnaire was structured on a five Point Likert Scale (ranging from Strongly Agree = 5, Agree = 4, Disagree = 3, Strongly Disagree 2 to Undecided = 1) which covers the variables of the study as contained in the objectives of the study. Bowley's (1926) formula was used to determine the copies of the questionnaire to be distributed to each senatorial zone. The formula is:

$$N_h = \frac{n(n_h)N}{n}$$

Where N_h = Number of units to be distributed to each group

n_h = Number of respondents in each group

n = Total sample size

N = Total population size

That is,

$$N_h = \frac{400(416)}{1504} = \frac{166400}{1504} = 110.64$$

approximately = 111

111 copies of the questionnaire were randomly distributed to Anambra Central Senatorial zone.

For Anambra South

$$\frac{400(580)}{1504} = \frac{232000}{1504} = 154.26$$

approximately = 154

154 copies of questionnaire were randomly distributed to Anambra South Senatorial Zone.

For Anambra North:

$$\frac{400(508)}{1504} = \frac{203200}{1504} = 131.95$$

approximately = 132

132 copies of questionnaire were randomly distributed to Anambra North Senatorial Zone.

3.6 Validity of the Instrument

To ensure the validity of the instrument the researcher adopted the face and content validity procedure where the instrument (questionnaire) was given to research experts on the research subject to make the necessary inputs and corrections to ensure that the test instrument covered the objectives of the study.

3.7 Reliability of the Instrument

Spearman-Brown Coefficient was used to determine the reliability of the instrument. The formula is:

$$r_t = \frac{2r}{1+r}$$

Reliability Statistics

Cronbach's Alpha	Part 1	Value	.899
		N of items	15 ^a
	Part 2	Value	.950
		N of items	15 ^b
	Total N of items		30
Correlation Between Forms			.988
Spearman-Brown Coefficient	Equal Length		.994
	Unequal Length		.994
Guttman Split-Half Coefficient			.972

a. The Part 1 items are: Benchmarking, Brand identity, Accuracy of the Action Plan

b. The Part 2 items are: Earned income, Deductions for goods returned, Discounts

From the above $r = 0.972$. This shows that there is a strong positive relationship between the variables.

METHOD OF DATA ANALYSIS

Pearson's Product moment Correlation Coefficient with the aid of (SPSS) was used to test the hypothesis to ascertain the nature of relationship that exists between the dependent and independent variables.

The correlation formula is given below:

$$r = \frac{\sum xy - \frac{(\sum x)(\sum y)}{n}}{\sqrt{(\sum x^2) - \frac{(\sum x)^2}{n}} \sqrt{(\sum y^2) - \frac{(\sum y)^2}{n}}}$$

Where :

r = Correlation Coefficient

x = Dependent Variables

y = Independent variables

n = Number of Scores

In this study, r^2 was used to determine the relationship between the sub-variables

Decision rule:

The decision rule was to accept the null hypothesis when the alpha value is greater than the probability values, otherwise reject it.



DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

This chapter is sub-divided into three sections as follows: Section 4.0 Analysis of the each Senatorial Zone; Section 4.1 presents descriptive statistics

(univariate and multivariate properties); Section 4.2 presents the Analysis of questionnaire and test of hypotheses; and Section 4.3 presents the discussion of findings emanating from the study.

Analysis of SMEs in each Senatorial Zones

Specific Analysis

S/N	Senatorial Zone	No. Distributed	No. Returned	No. Analysed
1	Anambra Central	111	110	110
2	Anambra South	154	152	152
3	Anambra North	132	123	123
	Total (Percentage)	400 (100%)	385 (96.25%)	385(96.25%)

Source: Field Survey (2020)

Descriptive Statistics

Univariate Properties of Data

The univariate properties of the data, that is, mean, median, minimum. Maximum, standard deviation, skewness and kurtosis.

Table 4.2 Summary Statistics of Independent Variables

	B	BI	AAP
Mean	16.91429	18.91948	21.11688
Median	14.00000	17.00000	21.00000
Maximum	25.00000	25.00000	25.00000
Minimum	8.000000	13.00000	11.00000
Standard deviation	6.696192	4.365020	2.948225
Skewness	0.182401	0.143425	-0.449752
Kurtosis	1.318933	1.247447	1.971076
Jarque-Bera	47.46838	50.59100	29.96249
Probability	0.000000	0.000000	0.000000
Sum	6512.000	7284.000	8130.000
Sum Sq. dev.	17218.17	7316.504	3337.740
Observations	385	385	385

Source: E-views 9.0

The table presents the descriptive statistics of the independent variables of the study; the mean of Benchmarking (B) is 16.81, which means that the average number of response as to Benchmarking within most of the Senatorial zones is 16.81, the minimum value is 8 and the maximum number is 25. The mean - Brand Identity (BI) is 18.91, which means that the average number of response as to brand identity within the senatorial zones is 18.91, the minimum value is 13 and the maximum number of those with good brand identity is 25. Accuracy of the Action Plan (AAP) the mean is 21.12, which means that the average number of response as to accuracy of the action plan is 21.12, the minimum value is 11 and the maximum number of those who understands it is 25. This indicates that operators/owners of SMEs require the applications of these variables (benchmarking, good brand identity and accurate action plan in their daily business activities).

Multivariate Properties of Data

Table 4.3 Correlation Matrix of Independent

Variables

	B	BI	AAP
B	1.000000	0.843139	0.716784
BI	0.843139	1.000000	0.687134
AAP	0.716784	0.687134	1.000000

Source: E-views 9.0

The table above presents the correlation matrix of the independent variables of the study.

Benchmarking is positively related to brand identity and accuracy of the action plan. Brand



identity is positively related to benchmarking and accuracy of the action plan. Accuracy of the action plan is positively related to benchmarking and brand identity.

Research Question One:

To what extent has benchmarking improved earned income of the operators/owners of SMEs in Anambra State?

Analysis of Research Questions and Test of Hypotheses

Summary Statistics of Investigative Questions

4.4 Range of Scores for Benchmarking

Range of Scores	N	Percentage	Remark
5-14	63	12.4	Poor score on Benchmarking
15-25	322	87.6	Good scores on Benchmarking.
Total	385	100(%)	

Source: Field Survey (2020)

Table 4.4 indicates the range of scores of respondents for benchmarking in the studied SMEs in Anambra State. The table revealed that 63 respondents (12.4%) scored low ranging from 5 – 14 while 322 respondents (87.6%) scored high on the variable ranging from 15 – 25.

Table 4.6 Range of Scores for Earned Income

Range of Scores	N	Percentage	Remark
5-14	198	54.43	Poor Scores on Earned Income
15 – 25	187	45.57	Good Scores on Earned Income
Total	385	100(%)	

Source: Field Survey (2020)

Table 4.6 indicates the range of scores of respondents for earned income in the studied areas. The table revealed that 198 respondents (54.43%) scored high ranging from 5-14 while 187 respondents (45.57%) scored low on earned income ranging from 15-25 in the studied SMEs in Anambra State.

Correlation Analysis for Benchmarking and Earned Income in the selected SMEs in the three Senatorial Zones in Anambra State.

Table 4.7 Correlation Analysis for Hypothesis One

Correlation		B	EI
Benchmarking (B)	Pearson Correlation	1	.954**
	Sig. (2-tailed)		.000
	N	385	385
Earned Income (EI)	Pearson Correlation	.954**	1
	Sig. (2-tailed)	.000	
	N	385	385

** Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Version 23.

Table 4.7 shows the correlation analysis done on benchmarking and earned income in the studied SMEs in the three Senatorial Zones in Anambra State. From the result, it showed that the Pearson's r^2 is .954 signifying a high and positive relationship between the variables.

Test of Hypothesis

Test of Significance for Hypothesis One

Ha: Benchmarking has significant improvement on earned income of the operators/owners of SMEs in Anambra State.

Table 4.8: Significance Test for Hypothesis One

N	Cal. R	DF	Crit. r.	Remark
385	0.983	383	0.116	Significant

Source: Field Survey (2020)



Table 4.8 shows the result of significance done on hypothesis one in the selected SMEs in the Senatorial zones in Anambra State. The table showed that at 5% level of significance and at 383 degrees of freedom, that the critical r is .116 while the calculated r is .983. By the virtue of the calculated r being greater than the critical r , the research hypothesis is thus accepted and it stated that Benchmarking makes a significant improvement on earned income of the operators/owners of Small and Medium Enterprises in Anambra State.

Research Question Two

To what extent has brand identity influenced deduction for goods returned to SMEs operators/owners in Anambra State?

Table 4.9 Range of Scores for Brand Identity

Range of Scores	N	Percentage (%)	Remark
5 – 14	17	3.30	Poor Scores on Brand Identity
15 – 25	83	96.70	Good Scores on Brand Identity
Total	385	100 (%)	

Source: Field Survey (2020)

Table 4.9 shows the range of scores of respondents for Brand identity in the selected SMEs in the Senatorial zones in Anambra State. The table showed that 17 respondents (3.35) scored low ranging from 5 – 14 while 83 respondents (96.70%) scored high on the variable ranging from 15-25 in the SMEs in Anambra State.

Table 4.10 Range of Scores for Deductions for Returned Goods

Range of Scores	N	Percentage (%)	Remark
5 – 14	196	50.01	Poor scores on deductions for returned goods
15 – 25	189	49.09	Good scores on deductions for returned goods
Total	385	100 (%)	

Source: Field Survey (2020)

Table 4.10 shows the range of scores of respondents for deductions for goods returned to the operators/owners of the selected SMEs in Anambra State. The table revealed that 196 respondents (50.01%) scored low ranging from 5-14 while 189 respondents (49.09%) scored high on the variable ranging from 5-14.

Correlation Analysis for Brand Identity and Deductions for Goods Returned to the operators/owners of the selected SMEs in Anambra State.

Table 4.11 Correlation Analysis for Hypothesis Two

Correlations			
		BI	DRG
Brand Identity (BI)	Pearson Correlation	1	.882**
	Sig. (2-tailed)		.000
	N	385	385
Deductions for Goods Returned (DRG)	Pearson Correlation	.882**	1
	Sig. (2-tailed)	.000	
	N	385	385

**Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Version 23.

Table 4.11 showed the correlation analysis done on Brand identity and deductions for returned goods in the selected SMEs from the Senatorial Zones in Anambra State. From the result, it showed that the Pearson's r^2 is .882 meaning that a high and significant influence exists between the variables.

Test of Significance for Hypothesis Two

H_2 Brand identity has significant influence on deductions for goods returned to operators/owners of SMEs in Anambra State.

Table 4.12 Significance Test for Hypothesis Two

N	Cal. R	DF	Crit. R.	Remark
385	0.882	383	0.116	Significant

Source: Field Survey (2020)



Table 4.12 indicates the result for test of significance done on hypothesis two in the selected SMEs in Anambra State. The table showed that at 5% level of significance and at 383 degrees of freedom, that the critical r is .116 while the calculated r is .882. Because the calculated r is greater than the critical r , the research hypothesis is therefore accepted and it is stated that Brand identity has significant influence on the deductions for goods returned to operators/owners of SMEs in Anambra State.

Research Question Three

What is the relationship between accuracy of the action plan and discounts in SMEs in Anambra State?

Table 4.13 Range of Scores for Accuracy of the Action Plan

Range of Scores	N	Percentage (%)	Remark
5 – 14	3	0.60	Poor scores on Accuracy of the Action Plan
15 – 25	382	99.40	Good scores on Accuracy of the Action Plan
Total	385	100(%)	

Source: Field Survey (2020)

Table 4.13 indicated the range of scores of respondents for accuracy of the action plan in the selected SMEs in Anambra State. The table revealed that three (3) respondents (0.60%) scored low while 382 respondents (99.40%) scored high on the variable.

Table 4.14 Range of Scores for Discounts

Range of Scores	N	Percentage (%)	Remark
5 – 14	180	46.75	Poor scores on Discounts
15 – 25	205	53.25	Good scores on Discounts
Total	385	100(%)	

Source: Field Survey (2020)

Table 4.14 shows the range of scores of respondents for Discounts in the selected SMEs in the Senatorial Zones in Anambra State. The table showed that 180 respondents (46.75%) scored low while 205 respondents (53.25%) scored high on Discounts in the selected SMEs in Anambra State.

Correlation Analysis for Accuracy of the Action Plan and Discounts in the selected SMEs in Anambra State.

Table 4.15 Correlation Analysis for Hypothesis Three

Correlations			
AAP	D		
Accuracy of Action Plan (AAP)	Pearson Correlation	1	.727**
	Sig. (2-tailed)		.000
	N	385	385
Discounts (D)	Pearson Correlation	.727**	1
	Sig. (2-tailed)	.000	
	N	385	385

** Correlation is significant at the 0.01 level (2-tailed)

Source: SPSS Version 23.

Table 4.15 shows the correlation analysis done on Accuracy of the Action Plan and Discounts in the selected SMEs in the Senatorial zones in Anambra State. The result showed that the Pearson's r^2 is .727 signifying a high and positive relationship between the two variables.

Test of Significance for Hypothesis Three

H₃: There is significant positive relationship between accuracy of the action plan and discounts in SMEs in Anambra State.

Table 4.16 Significant Test for Hypothesis Three

N	Cal. R	DF	Crit. r.	Remark
385	0.727	383	0.116	Significant

Source: field Survey (2020)



Table 4.16 shows the result of test of significance done on hypothesis three in the selected SMEs in Anambra State. The Table showed that at 5% level of significance and at 383 degrees of freedom, that the critical r is .116 while the calculated r^2 is .727. By the virtue of the calculated r being greater than the critical r , the research hypothesis that stated that there is significant positive relationship between accuracy of the action plan and discounts in Small and Medium Enterprises in Anambra State was accepted.

DISCUSSION OF FINDINGS

The results of the tests carried out from SMEs in the three Senatorial zones in Anambra State are discussed below. From the analysis of correlation for hypothesis one, it revealed that there is a high and positive relationship between benchmarking and earned income ($r^2 = .954$) in the studied enterprises. From the test of significance done, it revealed that the relationship is statistically significant as the observed coefficient was higher than the critical coefficient (at 5% level of significance and at 383 degrees of freedom, critical $r = .116$ while calculated $r^2 = .983$). This showed that benchmarking makes a significant improvement on earned income of the operators/owners of Small enterprises. This result is consistent with the results obtained by previous researchers such as Unam., Akinola, Olagbenia & Aladeraji (2015) who stated that strategic management has significant effects on the profitability and operational performance of the selected manufacturing firms.

From the analysis of correlation between brand identity and deduction for goods returned to SMEs operators, the result revealed that a high and significant influence exists between brand identity and deductions for goods returned to the owners of SMEs ($r^2 = .882$). Testing the significance of the relationship observed showed that the relationship was Significant; it was not due to chance or error. This is because the calculated correlation coefficient was greater than the critical correlation coefficient at appropriate degrees of freedom and alpha level (at 5% level of significance and at 383 degrees of freedom, the critical $r = .116$ while the calculated $r^2 = .882$). This result signifies that brand identity has significant influence on the deductions for goods returned to operators/owners of small and medium enterprises. This is in line with the result obtained from previous research by Johanudin L., Nur S. R, and Noraslina M. (2015), who stated that brand image strengthens the understanding of what customers really want when choosing a product and influence their satisfaction;

customers satisfaction helps to drive repeat business thereby increasing the profit of the firm.

The correlation analysis carried out on accuracy of the action plan and discounts (received and allowed) in Small Enterprises in Anambra State, the result showed that there is a high and positive relationship between accuracy of the action plan and discounts in SMEs ($r^2 = .727$). The test of statistical significance of the relationship observed in the correlation analysis came out positive (at 5% level of significance and at 383 degrees of freedom, the critical $r = .116$ while the calculated $r^2 = .727$). That is, the relationship was statistically significant. This finding aligns with that of Donkor & Kwarteng (2018) who examined the interacting effect of market dynamism and strategic planning on the performance of Small and Medium Enterprises in Ghana. The findings revealed that a consistent application of strategic planning methodologies contributes to the advancement of SMEs performance in Ghana. It also indicated that market dynamism has a significant positive relationship with firm performance.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The following findings were made from the test of hypotheses carried out in the study:

1. Test of hypothesis one indicates that there is a strong positive and significant relationship between benchmarking and earned income ($r^2 = 0.954$).
2. Test of hypothesis two indicates that there is a positive significant relationship between brand identity and deductions for goods returned ($r^2 = 0.882$).
3. From the test of hypothesis three, it shows that there is a positive relationship between accuracy of the action plan and discounts ($r^2 = 0.727$).

CONCLUSION

The research work concludes that Business planning plays a crucial role in determining the performance of SMEs. This is as a result of the positive relationship observed between: benchmarking and earned income; brand identity and deductions for goods returned; and accuracy of action plan and discounts in small and medium enterprises.

Since there is a positive strong relationship between decomposed variables of the independent and dependent variables then we concluded that there is a significant relationship between business



planning and the performance of SMEs in Anambra State.

Recommendations

From the listed findings of the study the following recommendations were made respectively:

1. Since there is a strong positive and significant relationship between benchmarking and earned income. It is recommended that every small and medium enterprises needs to embrace business planning for effective performance. Find out the enterprises weaknesses and identify the secret behind other progressing enterprises in the same line of business and apply such in their own business in order to sustain the life of their businesses and achieve increased income.
2. Based on the finding that there is a positive significant relationship between brand identity and deductions for goods returned. There is need for the operators/owners of SMEs to understand that maintaining good brand identity (image) is very vital to the life of the business. SMEs operators/owners need to understand that creating good image/identity depends on their ability to supply their customers with genuine products to satisfy their taste. This will enhance positive brand identity (image) of the enterprise, enhance customers' satisfaction, attract new customers and pave way for customers' retention. Therefore, the operators of SMEs need to avoid selling of substandard products to customers and ensure that they supply exactly what customers demanded, always treat customers with fairness in order to create a good image of the enterprise and minimize the existence of returned goods.
3. There is a significant positive relationship between accuracy of the action plan and discounts. From this finding every organization needs to be involved in business planning which will aid them identify the right strategic measures to apply in their day to day business affairs. It will assist them in the collection of useful or needed data from other organization, perfectly analyse the data and present the best business proposal that can lead the organization to achieve positive results/increase productivity; in order to boost their ability to receive discounts from their suppliers as well as allow discounts to their customers for increased turnover and good business performance. Equally, owners of SMEs need not neglect keeping records of

their daily business transactions because it will help understand if the business is progressing or not. SMEs owners needs to be punctual always, this will help them attain to their customers and not leaving them to the mercy of their apprentices/office attendants.

Equally, there is need for the owners/operators of SMEs to ensure that the business plans are formulated and strictly adhered to achieve the desired goal.

Also, Stakeholders in SMEs should be involved in policy formulations and implementation for them to be effective and yield expected results.

Thus, in order to achieve the vital roles of SMEs (economic growth, employment generation, and poverty reduction etc) in the Anambra State there must be measures set out by the owners/operators to monitor and maintain the daily operations of their respective businesses. These measures will enable them to sustain the life of the businesses and achieve the forecasted objective(s).

Finally, to achieve a sustainable business (better business) and increased income, there must be better regulations, better products and services.

Contributions to Knowledge

The study's contributions to knowledge is in the areas of exposing the relationship between benchmarking and earned income; brand identity and deduction for goods returned; and accuracy of the action plan and discounts. Hence such findings have not been observed in the enterprises in Anambra State before, it is a tool to be used by operators/owners of SMEs to understand the need to improve their brand identity, identify progressive firms to benchmark, and improve their action plan in order to perform better amidst competitive market environment.

Area for further studies

Since little work was carried out on material resources and growth of SMEs further studies should be carried out to ascertain the relationship between material resources and growth of Small and Medium Enterprises. This is to assist the owners/operators of Small and Medium Enterprises acquire in-depth understanding of the intricacies of business planning and performance of their businesses.



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ACQUISITION OF ENGLISH AND ODISIA ADVERBIAL CLAUSES THROUGH CONTRASTIVE ANALYSIS WITH EASE AND COMFORT

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ABSTRACT

This study is an attempt at making an analysis of major Adverbial Clauses in English and Odia for their easy acquisition through Contrastive Analysis (CA). In this paper, CA has been used as a linguistic tool to explore the similarities and differences between these languages by way of description, juxtaposition, comparison and contrast. It has been assumed that Odia can be treated as an ally in the process of English as Second Language (ESL) teaching since it has been supported by research that students do not construct rules in a vacuum; rather they work with the first language information at their disposal to understand, learn and use the Second Language (SL) rules. The L1 (Mother tongue) thus, is viewed as a kind of 'input from inside' (Ellis, 2003). The L1 serves as an inbuilt mechanism to promote the process of transfer while learning English.

The similarities between the two languages quickly facilitate the learning process while those which are different are thought to cause difficulty in SL learning. But a slight carefulness in understanding their differences can help in the transfer of data to the learning of the L2. Many researchers, e.g. Dulay, Burt and Krashen (1982) have proposed that, when students use first language structures in second language performance, they, in effect, plug lexical items of the first language into the surface structure of the second language. In other words, they think in the first language and use words from the second language, as much as one would handle word-for-word translation. In recent years, most SL learning research endorses the use of the first language as it facilitates the learning process of the second language (Cummins 2007, García 2008 and Kang 2012).

The use of L1 often makes the students free from psychological inhibitions like embarrassment or nervousness that accrues out of a forced use of only SL structures. In this regard, the first language support offers them a level of comfort, and creates a better rapport between the teacher and the students. The students feel motivated to interact with the teacher when they are allowed to use the first language structures.

One of the main assumptions of my research is that the first language of the student is an important factor in the second language acquisition, which cannot be eliminated from the process of learning an SL.

The first language of the students used to be considered a hindrance in SL learning, and as a source of errors in SL production. This view is now being criticized because ESL teachers have become aware of the significance of L1. Vivian Cook (2001) writes about the first language in ESL classes as "a door that has been firmly shut in language teaching for over a hundred years". When students come to the classroom they don't come carrying a blank slate in their heads; they come loaded with their native language and its structure that is a shared commodity in the Universal Grammar. The utility of this knowledge for SL learning can neither be denied nor underestimated. So, instead of looking at the students' native language and as a source of errors, they must be used as a tool to maximize second language teaching (Cook, 2001)

The present study is an attempt at making a contrastive analysis of major adverbial clauses which are essential to the formation of complex sentences; fundamental to the expository, scientific and analytical texts of English and Odia. This study has been planned to make a contrastive analysis of the Adverbial clauses of English and Odia by exploring the similarities and differences in their structural patterns with the help of CA.

KEY WORDS: *Contrastive Analysis (CA); Nominal Clause (NC); English as*

Second Language (ESL), First Language (L1); Second Language (L2)

Odia transcriptions: [ɸ]: Alveolar consonant variant of English RP /t/
[ɮ]: Velar consonant variant of English RP /l/
[ã]: Vowel variant of English RP /a:/



1.0 INTRODUCTION

The present study tries to explore the similarities and differences between the English and Odia Adverbial Clauses (AC) with the help of a linguistic tool called Contrastive Analysis (CA). It has been assumed that the L1 (Mother tongue) can be treated as an ally in the process of English as Second Language (ESL) teaching since it has been supported by research that students do not construct rules in a vacuum; rather they work with the first language information at their disposal to understand, learn and use the Second Language (SL) rules. The L1 thus, is viewed as a kind of 'input from inside' (Ellis, 2003). The L1 serves as an inbuilt mechanism to promote the process of transfer while learning English.

Researchers like Dulay, Burt and Krashen (1982) have proposed that when students use first language structures in second language performance, they, in effect, plug lexical items of the first language into the surface structure of the second language. They think in the first language and use words from the second language, as much as one would handle word-for-word translation. In recent years, most SL learning research endorses the use of the first language as it facilitates the learning process of the second language (Cummins 2007, García 2008 and Kang 2012).

The use of L1 often frees students from psychological barriers like embarrassment or nervousness that accrues out of a forced use of only SL structures. First language support offers them a level of comfort, and creates a better rapport between the teacher and the students. The students feel motivated to interact with the teacher if allowed to use the first language props. The first language provides a new dimension to the class and makes it pupil-friendly and lively.

This study is an attempt at making a contrastive analysis of major AC of English and Odia. The AC are the building-blocks of a language and are essential to the formation of complex sentences, which are fundamental to the expository, scientific and analytical texts. Odia speakers often feel it urgent to learn the English subordinate clauses for a fair understanding of such texts. To meet such requirements, they can understand the English AC structures well enough with the help of CA.

1.1 Research Assumption

One of the main assumptions of my research is that the first language of the student acts like a catalyst to facilitate the SL learning. The L1 is an important factor in the second language acquisition, which cannot be eliminated from the process of learning an SL. The ESL teachers have now become aware of the significance of L1. Vivian Cook (2001) writes about the first language in ESL classes as "a door that has been firmly shut in language teaching for over a hundred years". When students come to the classroom they don't come carrying a blank slate in their heads; they come *loaded* with their native language and its structure that is a shared commodity in the Universal Grammar. The utility of this knowledge for SL learning can neither be denied nor underestimated. So, instead of looking at the students' native language and as a source of errors, they must be used as a tool to maximize second language teaching (Cook, 2001)

1.2 Research Objectives

The research objectives of this study are to find out:

- i. The structural similarities and differences between the adverbial clauses (AC) in English and Odia.
- ii. The usefulness of CA for ESL teachers and students while dealing with English and Odia AC?

1.3 Theory of CA

CA is a linguistic tool used to make a systematic study of a pair of languages for identifying their structural similarities and differences. Fisiak (1978) defines CA as "a subdiscipline of linguistics concerned with the comparison of two or more languages or subsystems of languages in order to determine both the differences and similarities between them (Fisiak, 1978)." According to Wardhaugh (1970), "The claim that the best language-teaching materials are based on a contrast of the two competing linguistic systems has long been a popular one in language teaching".

Historically, Contrastive Linguistic Analysis is said to have developed in the 19th and 20th centuries in Europe out of Comparative Philology which was the system in place when linguists pre-occupied themselves with studies aimed at unveiling the historical and genetic relationships between languages. Such studies led to the establishment of language families (Olaoye, 2008).

According to Olaofe (1982) in Olaoye (2008), the first extensive application of structural linguistics to contrastive linguistic analysis was in connection with investigations of bilingualism. In relation to this, Weinreich's (1953) conceptual framework for understanding the ways by which languages in bilingual situations affect each other phonetically, grammatically and semantically becomes interesting. CA has the primary



objective of establishing the historical and genetic connections between languages on the basis of their manifest similarities or differences Olaoye (2008) in Sebele (2014)

The publication of Lados' book *Linguistics Across Cultures* in 1957 set the corner stone of the modern applied CA. Lado (1957) claims, "...those elements which are similar to (the student's) native language will be simple for him and those elements that are different will be difficult" for the student to learn. While this was not a novel suggestion, Lado was the first to provide a comprehensive theoretical treatment and to suggest a systematic set of technical procedures for the contrastive study of languages. He introduced CA as an instrument of identifying areas of difficulty for language students that could then be handled with suitable and appropriate exercises. For Lado (1957), the fundamental goal of CA is the improvement of language pedagogy which unveils how a monolingual becomes a bilingual. Lado's principles were used to prepare materials to enhance foreign language teaching and learning.

CA as a linguistic technique created a great sensation, and enjoyed a wide acceptance among scholars, researchers, second language teachers and students. But, the great enthusiasm which it evoked initially faced a setback when behaviourism went out of fashion. It however soon reappeared in Second Language Acquisition linguistics and language teaching.

1.4 Review of literature

Patnaik (1976) studies the importance of complementation in both English and Odia based on the Chomskyan model, the findings of which may be exploited for writing of modern Odia grammar. He is one of the few initial scholars who have worked on the contrastive studies of English and Odia. He has not done any analysis of subordinate clauses in English and Odia.

Mishra (1988) brings out a comparative study of modification in English and Odia Noun Phrases. In her study, she has explored the similarities and differences between the English and Odia Noun Phrases. She has not done any analysis of subordinate clauses in English and Odia.

Thakur (1998) researches on the grammatical and lexical cohesions in English and Odia grammatical structures through contrastive study. He has juxtaposed and analyzed students' writings and educated writings. He has studied both Grammatical Cohesion and Lexical Cohesion in English and Odia languages.

Samantray (2000) elucidates the structure of the Odia tense system in the theoretical framework of the new Reichenbachain-Hornstein system (proposed by Hornstein 1990), drawing comparisons with the English tense system and contrasting with it as well. Although she discusses the Odia tense system, she does not analyse the subordinate clause structures in English and Odia.

1.5 Method of data analysis

As this research is based on contrastive study, the data presentation and analysis is through comparison and contrast. Adverbial clauses in Odia along with their English counterparts are presented through description, juxtaposition and comparison with a view to bringing out the similarities and differences in the structural patterns of both the languages to facilitate their learning process. The method of data analysis of Adverbial Clauses (AC) of English and Odia will be as follows:

se jāñe äme ehä jebhali karu

He know-pres we it how do-pres

(He knows *how we do it.*)

Each example in the analysis has three lines. The first line is the Odia language transcription. Its part in the normal font is the Main Clause (MC) and the other part in the italics is the Adverbial Clause. The second line contains English words representing Odia equivalent. The third line represents the English version of its Odia counterpart.

1.6 Adverbial clauses in English and Odia

The Adverbial Clauses in both English and Odia are essential to the formation of complex sentences. They are fundamental to the expository, scientific and analytical texts. A Main Clause (MC) and one or more than one Subordinate Clause (SC) can make a sentence in both English and Odia. Here, Adverbial clauses (AC) are taken as the Subordinate Clauses (SC) in different sentences.

The following table shows the English adverbials and their Odia equivalents which are used in their respective adverbial clauses:



English adverbials	Their Odia equivalents
<i>how</i>	<i>jebhali</i>
<i>where</i>	<i>jeu~thi</i>
<i>when</i>	<i>jete-bele</i>
<i>before</i>	<i>purba-ru</i>
<i>after</i>	<i>pare</i>
<i>if</i>	<i>jađi</i>
<i>although</i>	<i>jađio</i>
<i>as</i>	<i>jemiti</i>

1.6.1 Adverb of manner

Jebhali

Example:

se jāñe äme ehä jebhali karu
He know-pres we it how do-pres
(He knows *how* we do it.)

Jemiti

Example:

jemiti chāhu~cha kara
how like do
(Do *as* you like.)

1.6.2 Adverb of place

Jeu~Thi

Example 1:

eitā sehi biđyālaya jeu~thi mu padh-uthi-li
this that school where I study-past perf
(This is the school *where* I had studied.)

Example 2:

se jeu~thi upakāra pä-ilā galā
he where benefit get-past go-past
(He went *wherever* he got benefit.)

1.6.3 Adverb Of Time

Jete-Bele

Example:

mu jete-bele äs-e se mote ðekhākar-e
I when come-pres he me meet-pres
(*When* I come, he meets me.)

purba-ru:

kichhi kah-ibā purba-ru se duithara bhābe
something speak-nf before he twice think-pres
(He thinks twice *before* he speaks something.)

pare

Example:

bapa äs-ibā pare äme khāu
father come-nf after we eat-pres
(We eat *after* father comes.)

kāli

Example:

se kahichanti je kāli äsibe (Adverb of time precedes verb)
he tell-pres-perf that tomorrow come-fut
(He has said *that he will come tomorrow.*) (Adv. of time follows verb)



1.6.4 Adverb of condition

Jadi

Affirmative:

Example:

jadi se kathina parishrama kare, tähele se saphala heba
if he hard toil do then he successful become-fut
(If he toils hard, he will be successful.)

Negative:

Example:

a. *jadi se kathina parishrama na-kare, tähele se saphala heba-ni*
if he hard toil not-do he successful become-fut-neg
(If he does not toil hard, he won't be successful.)
(Unless he toils hard, he won't be successful.)

1.6.5 Adverb of concession

Jadio

Example:

jadio se dhani, se kichhi dāna karanra-nti nāhin
although he rich he something give-pres not
(Although he is rich, he doesn't give anything.)

1.7 Findings from the adverbial clauses

The analysis of the Adverbial Clauses in English and Odia brings out the following similarities and differences which have been explored in the form of findings with the help of CA.

1.8 Structural similarities

Similarities between the structural properties of Adverbial Clauses (AC) in English and Odia languages are brought out with the help of CA. Their syntactic patterns have many things in common. Although emerged from different roots, both the languages share a lot of structural similarities in their linguistic properties.

The AC of both English and Odia languages share some structural similarities that are as given in the table below:

Structural similarities in Odia and English Adverbial Clauses	<p><i>se jāne āme ehā jebhali karu</i> He know we it how do-pres (He knows how we do it.)</p> <p><i>eitā sehi biḍyālaya jeu~thi mu padh-uthi-li</i> this that school where I study-past perf (This is the school where I had studied.)</p> <p><i>mu jete-bele ās-e se mote ḍekhākar-e</i> I when come-pres he me meet-pres (When I come, he meets me.)</p> <p><i>kichhi kah-ibā purba-ru se ḍui-thara bhāb-e</i> something speak-nf before he twice think-pres (He thinks twice before he speaks something.)</p> <p><i>bapa ās-ibā pare āme khāu</i> father come-nf after we eat-pres (We eat after father comes.)</p> <p><i>jadi se kathina parishrama kare, tähele se saphala heba</i> if he hard toil do then he successful become-fut (If he toils hard, he will be successful.)</p> <p><i>jadi se kathina parishrama na-kare, tähele se saphala heba-ni</i> if he hard toil not-do he successful become-fut-neg (If he does not toil hard, he won't be successful.) (Unless he toils hard, he won't be successful.)</p> <p><i>jadio se dhani, se kichhi dāna karanra-nti nāhin</i> although he rich he something give-pres not (Although he is rich, he doesn't give anything.)</p>
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	<i>jemiti chāhu~cha kara</i> how like do (Do as you like.)
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From the samples in the table above, the following similarities can be drawn:

- The AC of manner in English take adverbials like *as, how*. Similarly, adverbial clauses of manner in Odia, take adverbials such as *jemiti, jebhalii*.
- The AC of place in English take adverbials such as *where, wherever*. Similarly, adverbial clauses of place in Odia take adverbials such as *jeu~thi, jeu~thi-bi*.
- The AC of time in English take adverbials like *after, before, when* etc. Similarly, adverbial clauses of time in Odia take adverbials such as *pare, purba-ru, jete-bele* etc.
- The affirmative AC of condition in English take adverbials like *if*. Similarly, adverbial clauses of condition in Odia take adverbials like *jaḍi*.
- The negative AC of condition in English take adverbials like *unless (if not)*. Similarly, negative adverbial clauses of condition in Odia take adverbials like *jaḍi* along with a negative marker *na* before the verb.
- The AC of concession in English take adverbials like *although*. Similarly, the adverbial clauses of concession in Odia take adverbials such as *jaḍio*.

1.9 Structural Differences

The structural analysis of this study presents the following differences between the structural patterns of AC in English and Odia in the table below:

Structural differences in Odia and English Adverbial Clauses	<p>se <i>jeu~thi upakāra pā-ilā galā</i> (Reversal of clauses is possible) he where benefit get-past go-past (He went <i>wherever he got benefit</i>.) (Reversal of clauses is not possible)</p> <p>se <i>jeu~thi upakāra pā-ilā gal-ā</i> (Subject can be dropped) he where benefit get-past go-past (He went <i>wherever he got benefit</i>.) (Subject cannot be dropped)</p> <p><i>jaḍi se kathina parishrama kar-e, tāhele se saphala heba</i> (Present) if he hard toil do then he successful become-fut (<i>If he toils hard, he will be successful.</i>) (Present)</p> <p><i>jaḍi se kathina parishrama kal-ā, tāhele se saphala heba</i> (Past) if he hard toil do then he successful will-past become-nf (<i>If he toiled hard, he would be successful.</i>) (Past)</p> <p><i>jaḍi se kathina parishrama kar-iba, tāhele se saphala heba</i> (Future) if he hard toil do then he successful become-fut (<i>If he toils hard, he will be successful.</i>) (Present)</p> <p><i>jaḍi se kathina parishrama kara-ntā tāhele se saphala huat-ā</i> if he hard toil do-hypo then he successful become-hypo (<i>If he toils hard, he would be successful.</i>) (Past)</p> <p><i>se jaḍi kathina parishrama kar-e, tāhele se saphala heba</i> (<i>if free</i>) if he hard toil do then he successful become-fut (<i>If he toils hard, he will be successful.</i>) (<i>if not free</i>)</p> <p>se <i>jāñe āme ehā jebhali karu</i> (Adverb of manner precedes verb) He know we it how do-pres (He knows <i>how we do it</i>.) (Adverb precedes subject)</p> <p>se <i>kahichanti je kāli āsibe</i> (Adverb of time precedes verb) he tell-pres-perf that tomorrow come-fut (He has said <i>that he will come the next day.</i>) (Adv. of time follows verb)</p>
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The following differences are found in the above AC in English and Odia:

- i. Reversal of MC and SC in English is impossible whereas reversal of MC and SC in Odia is possible. The user is free to start either with MC or SC in Odia whereas such a freedom cannot be exercised by the user of English.
- ii. In an English adverbial clause of place, it is essential to place a subject before a verb. As such, it cannot be dropped or omitted whereas in an Odia adverbial clause of place, the subject is omitted. The adverbial clause of place rather has an implied subject which is reflected by the subject of the MC. Such a subject is not mandatory to mention. In Odia, *se* is the implied subject which is not essential before *gala* (Sentence 2). Contrastively, in an English AC, the subject is essential.
- iii. English has two tenses because it has two distinct verb forms such as *present* and *past* whereas Odia has four tenses such as *present*, *past*, *future* and *hypothetical* form. The ACs above in English and Odia (with *if* and *that*) show how they occur with two and four tenses respectively.
- iv. In English, *if* cannot appear in more than one place of an adverbial subordinate clause of condition whereas in Odia, *jaḍi* is versatile enough to appear in more than one place of an adverbial subordinate clause of condition. In Odia, *jaḍi se kathina parishrama kar-e* can be rewritten as *se jaḍi kathina parishrama kar-e* whereas in English, shifting of *if* is not acceptable. *If* goes only initially in the subordinate clause of condition in English.
- v. In English, in case of imaginary condition, the verbal inflections are not so versatile whereas in Odia, the verb pattern in imaginary condition is: MV (past) in SC with MV-*nti/-nte/-ntu/-ntā/-ntā*/ as inflections in MC depending on the number and person of the subjects.
- vi. In English, the adverb that introduces an adverbial subordinate clause precedes the subject whereas the adverb precedes the verb in an Odia adverbial clause. In the AC in English, the adverb *how* that introduces adverbial subordinate clause *how we do it* precedes the subject *we* whereas in Odia, the adverb *jebhali* precedes the verb *karu* (Sentence 8).
- vii. Adverb of time in English follows the verb whereas the adverb of time goes before the verb in the AC in Odia. The adverb of time *the next day* in English as in sentence 9, follows the verb *will come* whereas in Odia, the adverb of time *kāli* goes before the verb *āsibe* in the AC (Sentence 9).

1.10 Conclusion

Major Adverbial Clauses in English and Odia have been analysed and their similarities and differences have been explored to show how these similarities and differences can provide positive transfers to the Odia learners for the acquisition and use of English AC and vice versa. It can be safely assumed that CA has not lost its value either as an analytical or a pedagogic tool.

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DISEASES RELATED TO DIABETES AND SCORPIO LAGNA BASED ON MEDICAL ASTROLOGY

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ABSTRACT

In astrology one can study a wide variety of categories within oneself. In ancient times, astrology was highly valued for its health benefits. The most prominent of these is medical astrology. Medical astrology has developed in different ways in different countries and influenced by many different factors. Thousands of years ago, astrology was practiced as a means of divination. In astrology, the sun, moon, planets, and outer space stars are used to predict future events. Astrologers were the ones who handled the medicine very well here, while physicians also offered surgical treatment to patients. Based on this, they predicted the harm to the country, knew the disease coming through it and treated the medical system accordingly.

KEYWORDS - Navagrahas, Dasa, Buddhi, Andara Nathan, Lagna, Rahu, Ketu.

I. INTRODUCTION

Generation to generation the genealogical symptoms are carried out biologically. Natal planetary configuration give an impression on the symptoms of the genetical factors brought down to a native as well as the symptoms being carried out to the next generation. Crucial points that are responsible for transmission of genetical factors are lagna, moon and 5th bhava and / or seventh bhavas from thereon of father or mother's birth charts. Astro genetical Influence is the ability of a parental sign to appear as the lagna / chandra lagna in the chart of the child. Such ability depends on the frequency of its appearance as 'crucial point' in the ancestral charts i.e., of parents/grandparents / great grandparents. Influences of transiting planets on the crucial sign at the time of birth of the child also indicate genetical influence. Astrogenetical factor has an embedded influence in any chart to influence the next generation. Nature has shown us in many ways that every living thing is unique.

Although everyone in a family has been following the same diet for many generations, not everyone in the family gets the same disease. This does not mean that diet alone is the root cause of diabetes. Our focus is to establish and confirm the theories concerning diabetes, the impact of the six - eight - twelve houses that cause diabetes, as well as the effect of the planets Venus, Jupiter, Saturn, and

the Moon, which are also believed to be factors causing diabetes. 'Diabetes in Medical Astrology' presents a comprehensive review of diabetic patients being treated and medications available in hospitals and using astrology and the structure of the planets, this study seeks to determine which planets cause diabetes by analyzing their horoscopes, as well as how to protect themselves from this disease using astrology.

II. TO IDENTIFY CONGENITAL DISEASES

Study of divisional charts, along with Rasi chart give important indications of the diseases and more so of congenital diseases. For a study of the divisional charts –

- 1) Analyze Navamsha and Shashtamsa chart like a normal chart, look at the lagna, lagna lord, the 6th house and its ruler.
- 2) Analyze rasi lagna lord and see how it is placed on the navamsa, shashtamsa or other vargas.
- 3) Analyze karakas, significators of the body organs and see their positions in the Vargas.
- 4) Analyze dasha and bhukti lord and its placement in the Vargas.
- 5) Analyze the Moon and its placement or affliction in the Vargas.

Every human body has some immaturity in their body anatomy. Such immature zones lead to



various diseases. Lesser the immature zones better the health condition. Congenitally immature parts of the body become the principal factors of death in the long run. Congenital immaturity is such a natural phenomenon which can't be resisted by any means. Hence the life is dependent on the planetary influence. The reasons for Congenital immaturity were attributed to the strength of the birth star i.e., natal moon position. Congenital disease is a disease or disorder that is inherited genetically from immediate parents or some grandparents in the family dynasty. This can be either paternal side or maternal side. These symptoms of disease may be controlled in a generation, by medicines / by any other curative methods. Still the recurrence of such symptoms cannot be ruled out in any of the next generations in the family.

III. ASPECTS IN DIABETES HOROSCOPES

1. The planet in the star of the sixth lord creates or develops the disease of the planet seen with the sixth lord.
2. The sixth house in Lagna brings planetary disease and the planet standing in a star, a planet belonging to, a planet seen or developing disease that develops diabetes.
3. The two hostile planets are in the same zodiac sign or look at the same zodiac sign, the zodiac sign is to be treated for disease or surgery or injury.
4. Dasa, Buddhi brings disease when traveling in the negative zodiac signs in the

constellation of the planets standing in the star of Andara Nathan.

5. The most visible planet in a horoscope and the least visible planet can cause or develop disease in the horoscope.
6. Rahu, Ketu, which is close to a lagna, is capable of congenital disease.
7. The planets that saw the sixth lord will get the disease of signfulness or housefulness or the planets who saw the sixth lord will get the disease of signfulness and housefulness.
8. The disease occurs because the planets have a transitional relationship with each other and are associated with six-eighth house interactions.

IV. RULES IN DIABETES HOROSCOPE

1. Diabetes is caused by the presence of Venus, Guru, Saturn, Moon planets in the 6th, 8th, 12th house lord.
2. 6th, 8th, 12th house lord if water zodiac sign has 6th lord in it then diabetes will occur.
3. Venus, Guru is one of these 6th, 8th, 12th house lord is in water zodiac so diabetes will occur.
4. Guru, Venus, Saturn planets Two of the three together cause diabetes because another sees them.
5. Guru Venus planets combination Diabetes is caused by being in or seeing the water zodiac.

IV. DIABETES HOROSCOPE TABLES

Example Horoscope : 01

Date of Birth	: 20.11.1987	Time of Birth	: 08.00 AM
Place of Birth	: Tiruvallur	Lagna	: Scorpio
Signs	: Libra	Star	: Swathi - 4
Dasa Bhukthi	: Rahu Dasa 02 Years 00 Month 06 Days		



JUPITER RAGU			
	<u>RASI</u>		
	LAGNA SUN,SATURN VENUS	MERCURY MARS MOON	KETU

LAGNA MOON, SATURN JUPITER			
VENUS MERCURY KETU	<u>NAVAMSA</u>		RAGU SUN
	MARS		

Rules applied in horoscope table:

Rule 1: Diabetes is caused by the presence of Moon planet in the 12th house lord.

Rule 3: Venus is 12th house lord is in water zodiac so diabetes will occur.

Example Horoscope : 02

Date of Birth : 07.06.1991

Time of Birth : 05.30 PM

Place of Birth : Kumbakonam

Lagna : Scorpio

Signs : Pieces

Star : Uthrabhadra - 4

Dasa Bhukthi : Saturn Dasa 02 Years 06 Month 21 Days

MOON		SUN MERCURY	KETU
	<u>RASI</u>		MARS JUPITER VENUS
SATURN			
RAGU	LAGNA		

	SATURN MERCURY		KETU
	<u>NAVAMSA</u>		SUN
RAGU	JUPITER MOON	MARS	VENUS LAGNA

Rules applied in horoscope table:

Rule 3: Venus is 12th house lord is in water zodiac so diabetes will occur.

Rule 4: Guru, Venus planets Two of the three together cause diabetes because another sees them.

Rule 5: Guru Venus planets combination Diabetes is caused by being in or seeing the water zodiac.



Example Horoscope : 03

Date of Birth	: 28.09.1996	Time of Birth	: 11.30 AM
Place of Birth	: Thiruvarur	Lagna	: Scorpio
Signs	: Pieces	Star	: Revathi - 3
Dasa Bhukthi	: Mercury Dasa 04 Years 03 Month 20 Days		

KETU			
MOON			
SATURN			
	<u>RASI</u>		VENUS
			MARS
			MERCURY
JUPITER	LAGNA		RAGU
			SUN

LAGNA	SUN	RAGU	
VENUS			
MOON	<u>NAVAMSA</u>		
			JUPITER
MARS	KETU	SATURN	
	MERCURY		

Rules applied in horoscope table:

Rule 2: 8th house lord if water zodiac sign has 6th lord Mars in it then diabetes will occur.

Rule 3: Venus is 12th house lord is in water zodiac so diabetes will occur.

V. CONCLUSION

This study, entitled Diabetes in Medical Astrology, provides a comprehensive overview of patients being treated for diabetes in hospitals and the medications available to them. The purpose of this study is to find out how astrologers and planetary systems contribute to the horoscopes of diseased planets by obtaining their horoscopes and to learn about the effects of diabetes on others in the future and how to protect against it.

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COMMUNICATING GLOBALIZATION TO THE GRASSROOTS: EDUCATION BARRIERS IN SOUTHEASTERN – TANZANIA

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ABSTRACT

Globalization has been considered as an eye-opener to socio-cultural developments due to the benefits gained from multi-national interconnectedness. However, its impact to rural communities is still minimal. Education which no doubt is a driving force to enhance penetration of globalization across borders is itself still unrealized in most areas of southern Tanzania, especially in rural areas. This is due to the high shortage of schools, teachers and other teaching facilities but mainly caused by cultural rooted factors. This paper discusses the state of affairs with regard to how education barriers also emerge as barriers towards communicating important national and global issues for the sake of socio-economic development of rural communities particularly that of Mtwara region in Tanzania. The paper unveils the current situation with regard to both education and globalization and the way indigenous communities in Mtwara region respond to globalization pressure. In its conclusion the paper suggests the possible measures to be taken in order to promote education for the betterment of not only intellectual development but get to a better way of accommodating the pressure of globalization.

Keywords: *Globalization, Development, Education, Illiteracy, Literacy, Human rights, Colonialism*

INTRODUCTION

Globalization, a term that relatively connotes interconnectedness among multinational relations, be it politically, economically or socio-culturally rooted, has unavoidably linked the world nations. Africa is caught up in a world revolution which is so dynamic that it has almost got out of human control. John Mbiti (1971) calls this a revolution of man as a whole, and therefore no people or country can remain unaffected by this new rhythm of human history. Without warning and without physical or psychological preparation, Africa has been invaded by a world revolution that has been taking place across historical epochs from colonial to post-colonial times. Now a new and rapid rhythm is beating from the drums of science and technology, modern communications and mass media, schools and universities, cities and towns but also economic investments and trade networks.

Some scholars (e.g. Rugumamu 2005, Alphonse 2006) argue that while colonialism was justified by rationale such as “the white man’s burden” and civilizing missions”, the current phase of capitalist expansion (globalization) is justified by such slogans as “the end of history”, “universal civilization” and the “inevitability of capitalism”. Africa is, thus, not a new

comer into the modern world capitalist system but has been an integral part from the mercantilist capitalism to the present phase; from the slave trade, through colonialism to neocolonialism. Africa’s development trajectories have by and large depended on the wishes and demands of the economies of the North.

This paper presents some reflections on the state of education in Mtwara region in response to unavoidable waves of globalization through ongoing economic investments by foreigners in natural and cultural resources sectors. The treatises and sentiments contained in the paper are basically the results of my own experience as a researcher but also my familiarity to the community under discussion (Mtwara region community). My PhD fieldwork that focused most on ‘Community Archaeology and Cultural Heritages in Mtwara region’ has exposed me to the really situation on devastating illiteracy and massive poverty to the indigenous majority amid unstoppable speed of global influences in the region. It is this fact which has brought on surface a thirsty to make some reflections on this situation from which this paper is its product.



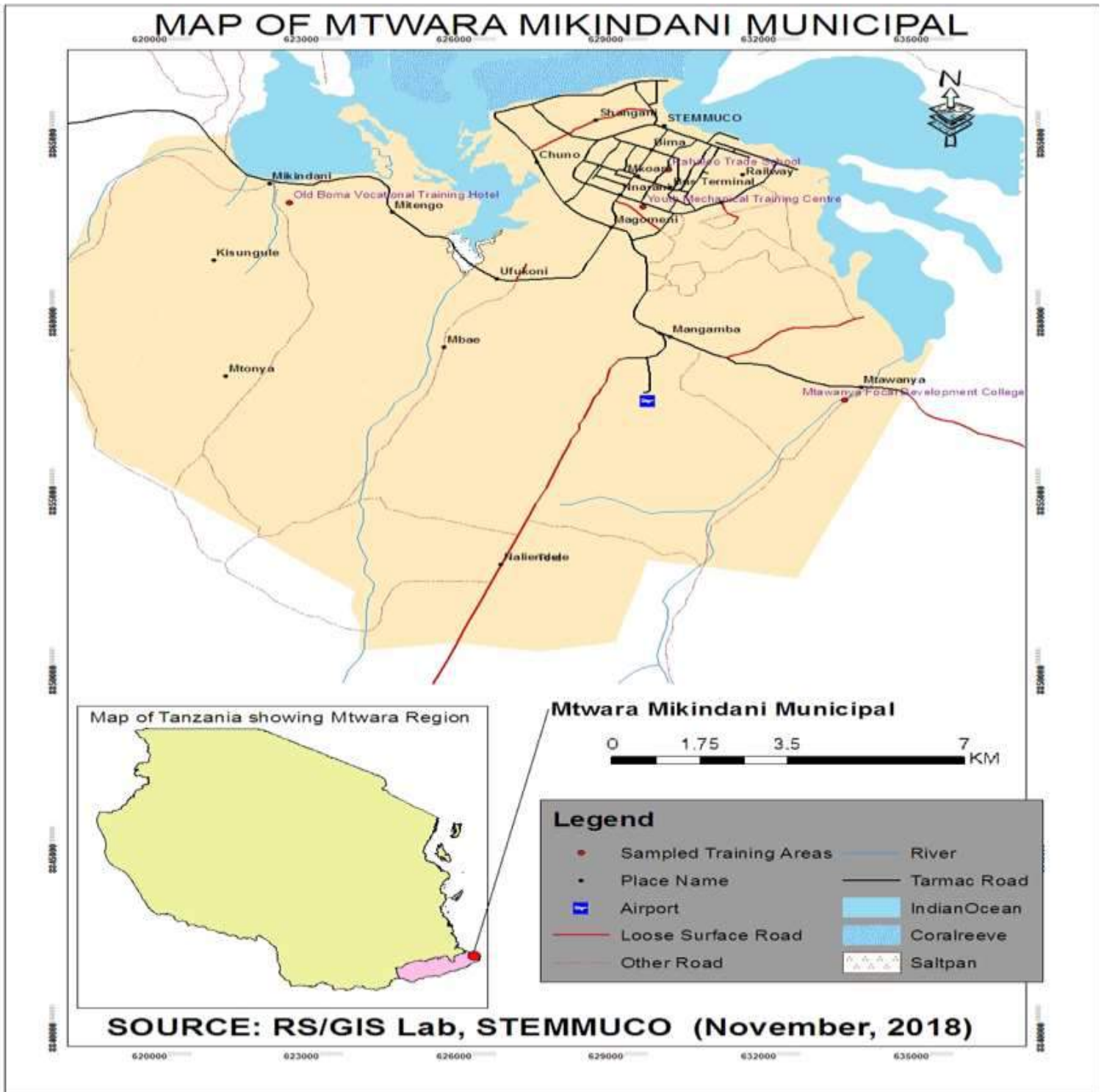
CONTEXTUALIZATION OF THE STUDY AREA AND GLOBALIZATION INDICATORS

Mtwara region is located along the Southeast Coast of Tanzania between 8°S and 10°30'S (Kwekason 2011). It forms a part of the Swahili coast that stretches from Sofala in Mozambique to Mogadishu in Somalia. The Swahili coast also includes the offshore islands of Comoro, Zanzibar and Pemba as well as northern parts of Madagascar (Chami 2005). The indigenous ethnic groups of Mtwara region are to a great percentage Makonde groups though the region is also shared with other ethnic groups such as; the WaMakua, WaMwera, WaYao and WaMatambwe and Swahili communities on the coast.

The pressure of globalization has been quite evident in Mtwara region in recent years especially in this 21st century. There are a number of socio-economic far from political aspects which can be recalled as being among indicators of globalization in the region. Mtwara region (Fig. 1) was expected to be one of the fastest growing regions in Tanzania given plans by the government to transform it into an industrial region especially after the discovery of gas and oil deposits in the region. The influence of these new developments in the region cannot be separated from the whole concept

of globalization. This can be evidenced by the inflow of multi-national companies venturing for investment especially in the gas sector. A number of development projects are being directed in the region by the government in collaboration with foreign investors. These developmental initiatives are less conceived by the indigenous communities who are the primary custodians of the economic development of region.

Apart from its wealth in gas and oil resource which have attracted attention of multinational companies, Mtwara region is becoming attractive to many other industrial and infrastructural investments. These include; Dangote Cement Industry Tanzania Ltd, the Mtwara Development Corridor Spatial Development Initiatives (SDI) aiming at promoting trade and investment in the Region. The initiatives would potentially transform the Southern Tanzania and Northern Mozambique. The SDI is being promoted by the governments of Tanzania, Mozambique, Malawi, Zambia and South Africa and hinge on the development of deep-water port of Mtwara and the road to Mbamba Bay on Lake Nyasa/Malawi. Recently, the present of Tanzania, Honorable Samia Suluhu Hassan showed a need to develop the Mtwara Port so that transportation of all cashew nuts from southern Tanzania should use the Mtwara Port.



African youths culturally confused (Alphonse 2006).



Those attending schools also became vehicles of carrying the new changes and introducing them to their villages (Mbiti 1997). This was possible due to the knowledge and skills that people acquired from missionary schools. Regardless of the initiatives made by early missionaries in the southern part of Tanzania to promote education through building schools and other training centers, illiteracy remains among predominant diseases to the indigenous people of Mtwara region.

Over the past few decades there has been no other concept in social, political and educational theory as widely and passionately debated as globalization. Not only globalization has become a buzzword, it has also divided theorists and practitioners alike along highly ideological lines. Deep disputes have emerged surrounding the historical and cultural origins of globalization, as well as its political consequences (Rizvi 2004). Little consensus exists with respect to not only definitions and explanations of globalization but also its implications for policy, and prescriptions for a 'new world order'. Globalization has been linked to almost every purported social change in recent years, from an emergent knowledge economy, the declining authority and the demise of the traditional cultural practices to the spread of neo-liberal economic regimes and the advent of the postmodern consumer culture. In normative terms, some have viewed globalization as a major new source for optimism in the world, while others have seen it in entirely negative terms.

Globalization has been much debated in comparative education, with respect to the ways in which it has affected different policy communities, as well as its implications for the direction and politics of educational change (Burbules and Torres 2000). Communities worldwide have different responses upon the pressure of globalization. Some would perceive global interconnectedness as intending to exploit the targeted destinations but others would take it as a mutual way of economic gains among the participating parties. The later is also my position that if each party plays 'a fair game' which is nowhere else rooted but in education, there would be mutual though not necessarily equal gains from globalization between the globalizing and the globalized parties.

It is obvious that education has been and will continue to be a fundamental tool in the expansion of globalization worldwide as it needs both creative and technological skills. But it is also undeniable fact that the same education is an important tool that can be used to philosophically harmonize the pressure of globalization by getting some benefits from it rather than surrendering and considering it as an exploitative form of relation.

Therefore, there is a mutual relationship between globalization and education given that both globalizing and globalized ones cannot survive without education.

THE STATE OF ART AND BARRIERS TO EDUCATION IN MTWARA REGION

Tanzania under the leadership of Mwalimu Julius Kambarage Nyerere put in place education policies generally aiming at equipping a good number of citizens with at least the ability to read and write. What owes more to the imprint of Nyerere himself, as a thinker, reader and crusader, was his policy of Education for Self-Reliance (ESR), a micro-level idea introduced in March 1967; a treatise that bore the philosophical stamp of a national leader intent on making a country's education system part of the larger socio-economic machine aimed at benefiting everyone (Legum and Mmari 1995). It is unfortunate that this good will from the Late Mwalimu Julius Kambarage Nyerere famously known to the people of his nation as '*Baba wa Taifa*' (The Father of the Nation) was not equally implemented in the country.

Compared to many other regions in the country, Mtwara region falls among the regions whose investment in education is qualitatively and quantitatively "a drop in a sea". When viewed from the low levels (primary schools) to the higher levels (colleges) Mtwara region is disadvantaged in almost every level of education. Currently, the region experiences a big shortage of schools – both primary and secondary schools. For example, there are villages which do not have even one primary school and the situation is worse to secondary schools. Even the few available schools, both primary and secondary schools have a terrible shortage of teachers but also other education facilities. This has created a massive illiteracy accompanied by devastating poverty to the community in the region to the point that it has been difficult to march with the pace of globalization. Consequently, the community finds itself in a bulldozed situation as globalization unlimitedly blurs across every sphere of life.

EDUCATION LIMITATIONS AND CONSEQUENCES TO THE COMMUNITY

The new era of educational imperialism in contemporary Africa is still designed to exalt the image of Europeanism, just as the colonial path prevented Africans from developing intellectual skills consistent with the local mindset and indigenous learning. This form of educational policy has created horrific inequities and unspeakable poverty, and, in re-ordering the world's socio-political, educational and cultural relationships, it continues to interfere in nation-building and state legitimacy, economic development and



productivity as well as in social and cultural development – the (re) production of ‘Traditional Culture’ (Babaci-Wilte and Geo-JaJa 2011).

It is argued that human rights are key to human development (Dachi 2006) and education is both a right to individuals and a necessity for society’s development. The two are considered indivisible, but more so, primary education and human development (UNICEF, 1999a). In that recognition, article 26 of the 1948 United Nations Declaration of Human Rights points out that, ‘education shall be free, at least in the elementary and fundamental stages’ (UNICEF, 1999b). Principle 7 of the 1959 Declaration of the Rights of the Child states that, ‘the child shall be entitled to receive education, which shall be free and compulsory at least, in the elementary stages’ (Dachi 2006). As far as adult education is concerned Tanzania made provision to start an institute to cater for it. The government also instituted a legal and policy framework for adult learning.

Regardless of the policies instituted to promote education in Tanzania the implementation part of the agenda remained uneven in the country’s more than 28 regions. That unevenness of education distribution in the country has created a state of despair among the disadvantaged people hence affecting them in combating social problems that would need education solutions. For example, given the on-going establishment of foreign investments in Mtwara region as previously noted, the opened opportunities for employment are not benefiting the illiterate indigenous communities of Mtwara but mostly favouring literate people from outside the Mtwara region. As a result, the people in Mtwara region have developed negative attitudes towards these investments taking place in the region as they do not seem to have direct benefit to the indigenous communities.

GLOBALIZATION CHALLENGES AND THE FUTURE OF EDUCATION IN MTWARA REGION

There is a mismatch between the speed and influence of globalization in relation to the state and speed of education provision in the southeastern part of Tanzania particularly the Mtwara region. According to Babaci-Wilthite and Geo-JaJa (2011), education that has become an *elusive human right as regards equity* is enshrined in the declaration that; “everyone has right to education. Education shall be free...Education shall be directed to...the development of human personality and to the strengthening of human rights and fundamental freedom (Universal Declaration of Human Rights, 1948, Article 26)”. Regardless of the goodwill of this

declaration, its realization remains a nightmare given that the current education system has basically been commercialized. This has made it unaffordable to poor people in the peripheries of the country especially the indigenous majority of Mtwara region.

Globalization and its challenges have at least ignited education-loving spirit among the people of Mtwara who as noted before have been lagging behind other regions of the country in terms of development. People have realized that the only way to survive amid globalization pressure is to have formal educational skills. Few people who are economically healthy now see the need of investing in education by taking their children to schools. The number of schools is slowly increasing although students’ performance is not yet encouraging. The establishment of the University institution in Mtwara region (Stella Maris Mtwara University College – *A Constituent College of St. Augustine University of Tanzania*) has been another catalyst and new hope to the future of education in Mtwara region. Being established in 2009, STEMMUCO¹ provides an important contribution to the development of education in the southern part of Tanzania particularly Mtwara and Lindi region. To a great extent the college has reduced the problem of shortage of teachers in these regions by itself being a cooking pot of teachers but also allocating student-teachers in almost every school in Mtwara and Lindi for teaching practice which is done every year. More still, many graduates from this college have shown their interest to seek employment in Mtwara and Lindi schools. Therefore, the presence of this university college which is the only university in the southeastern part of Tanzania (with exception of the Open University of Tanzania) and the efforts currently being made by the government to promote education in Mtwara region is a green-light to the future development of education in the region in few years to come.

CONCLUSION

Globalization is our present life as well as our tomorrow’s expectations. It is some thing we can not attempt to abandon but to have prepared mindset built on the roots of education to face it. Education should be part of the struggle against the colonial past and its on-going legacy of globalization. The reflections presented in this paper show that for African societies including those of Mtwara region to survive the waves of globalization, investment in education is a must. Therefore, collective efforts are needed among

¹ Stella Maris Mtwara University College



education stakeholders in Mtwara region and the country at large to promote education sector. This can be done through community awareness programmes, building of schools in villages where there are no schools, but also establishing conducive teaching and learning environment to both teachers and students. The aim of all these initiatives is not to fight globalization but to create an environment whereby communities can harmoniously accommodate the pressure of globalization instead of continuing taking it as a threat. It is only through education that globalization can be easily understood and communicated to the grassroots communities.

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STRENGTHENING THE PRINCIPLES OF INHERITANCE LAW IN THE VERSES OF THE QUR'AN AND HADITH

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**Қуръон оятлари ва ҳадисларда мерос ҳуқуқи тамойилларининг
мустваҳкамланиши**
**Укрепление принципов наследственного права в аятах Корана и
хадисах**

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ANNOTATION

In this article, the subject of inheritance law, which is one of the basic sciences of Islamic law, is covered by Qur'anic verses and hadiths. In the article, Niso, Anful, verses related to the inheritance of the Ahzab Sura, Sunani Termiziy and a number of hadiths come from Sahihi Bukhari. 2 decrees on the issue of the community and the situation related to it are also stated.

Аннотация. Мазкур мақолада ислом ҳуқуқининг асосий илмларидан бири бўлмиш мерос ҳуқуқи Қуръон оятлари ҳамда ҳадислар орқали мавзу ёритилган. Мақолада Нисо, Анфул, Аҳзоб сураларидаги меросга оид оятлар, Сунани Термизий ва Саҳиҳи Бухорийда келган бир қанча ҳадислар келтириб ўтилган. Ижмо масаласига оид 2 та фатво ва унга боғлиқ ҳолат ҳам баён этилган.

Аннотация. В данной статье предмет наследственного права, являющегося одной из основных наук исламского права, освещается в стихах Корана и хадисах. В статье Нисо, Анфул, стихи, связанные с наследованием Ахзоб Суры, Сунани Термизий и ряд хадисов исходят от Саҳиҳи Бухари. 2 указы по вопросу об общине и ситуации, связанной с ней, также изложены.

Таянч иборалар. Фароиз, Қуръони карим, ворислик ҳуқуқи, ижмо, ҳадис, оят, мерос, саҳоба.

Base phrases. Faraiz, Quran, inheritance legal, community, Hadith, verse, inheritance, companions.

Базовые фразы. Фараиз, Коран, закон о наследовании, община, хадис, стих, наследование, сподвижники.

The purpose of Faraiz's science is to ensure that each person receives his or her legally appropriate share, this is called the distribution of inheritance. In Faraiz science, the main sources of inheritance distribution are Koran Karim, Sunnah and Ijma.

On the solution of any issue of inheritance, the principle of "comparison" and "Ijtihad" are not addressed.

The Holy Quran, which plays an important role in the life of Muslims, is the main source of



religious guidelines, moral, spiritual norms, all the laws of Muslims, in their social lives.

Legal norms are given in the Sura "Bakara", "Niso", "Maida", "light", "Anful". They covered activities such as fasting, prayer, Hajj, as well as debt, testament, inheritance, marriage and annulment, as well as issues related to them.

The norms of inheritance are also explained mainly in the Qur'an, in which the right of inheritance is revealed as a fullness.

Norms of inheritance the verses 7, 8, 11, 12, 176 of Surah Nisa are given in verse 75 of Surah Anfal and verse 6 of Surah Ahzab.

These verses can be divided into two groups in general.

The first group of verses sets out the basic principles of the right to inheritance, these are the following verses:

"For men, a share of the inheritance left by their parents and relatives. For women (too) their parents, relatives left a share (from inheritance). These shares are the share that is prescribed by the majority." [1; 78 p.]

"Then come to believe that those who emigrated and fought with you are (also) of you. And relatives are closer to each other in the book of Allah. Surely Allah knows all things." [1; 186 p.]

"The prophet is more truthful to the believers than themselves, and his women are their mothers. In the book of Allah, relatives (in reconciliation) are more righteous than believers and reporters to one another (non-relatives). Except that you (Religious) do good (permissible) to your friends (by making them heirs for yourself). It is inscribed in the book (that is, in the Lavhul Mahfuz)." [1; 418 p.]

"If, in the division of inheritance, distant relatives, orphans and needy are also present, make them enjoy the same inheritance and say good words." [1; 78 p.]

If in verse 8 of Surat Nisa it is stated that women and children have the right to inherit as well as adults and men, then in the remaining two verses, that is, Surah Anfal 75-verse and Surah Ahzab 6-verse, it is stated that they have more right to inherit than others. The reason for this would be on the basis of friendship, piety, to receive inheritance among Muslims until these verses are revealed.

This is not a custom of ignorance, it was one of the rules that Islam introduced at the first moment after the hijra. In order to preserve their religion, Muslims left their homeland, possessions, relatives and migrated to the Medina Munawwara. At this time, the Prophet (p.a.v.) promoted religious unity relations between the emigrant and the Ansar. From this, the sung emigrant had the right to obtain the heritage of the Muslim brother – in-law Ansar, as well as the inheritance of the emigrant brother-in-law

Ansar. At the same time, the inheritance on the basis of kinship was temporarily destroyed, this situation lasted until a certain period of time, the revelation of verses denying the issue of inheritance in the early days of the hijrah, the conquest of Mecca and religion began to gradually introduce the rules of law on the formation, strengthening of the individual, family and society.

When these verses were revealed, they noted that there is an important role in the issue of inheritance in strengthening family ties, it is considered an important factor for the perception of mutual responsibility among relatives, family members, therefore, the inheritance should be among the believing relatives.

In the second group of verses, the legal shares of each person who has the right to inherit are determined, they are as follows:

"Allah will bequeath to your children a share of two daughters for a son on inheritance. If there are more than two women (heirs), then two-thirds of what is left to them (the deceased), if there is a single girl, then half of it (inheritance) (touches). If he (the deceased) has a child, then one-sixth of the (inheritance) left by each of his parents touches. If, without a child, only his parents are heirs, then one-third (right) touches his mother. If there are brothers (of the deceased), then one sixth (of the truth) touches his mother. (These distributions are made after the will or debt (granted) by the deceased (executed). You do not know which of your parents and children are more useful to you. (hence the inheritance tax) is prescribed by Allah (Himself) (determined and). Of course, Allah is knowledgeable and judge." [1; 78 p.]

Here it is natural that the question arises whether the Will is executed in the first place or the debt is paid. In practice it is put forward even if the debt in the verse is mentioned after the testament. Because Islam dinida is given great attention to debt. Therefore, even after the death of the debtor, the responsibility of the debt will not be neglected. And before the funeral of the deceased person is read, he is asked whether he has a debt.

Imam Termizi came to the Sune: the Prophet (PBUH) said: a.v.) brought a deceased to read the funeral prayer before him. UI-Zeeb: "read the funeral of your brothers to yourself, as long as he has a debt." then Katoda (r.a.): "O Messenger of Allah, I will take his debt to my neck." Ol zat (s.a.v.): "With Fidelity?" they asked. Katada (r.a.): "With Fidelity", he said. After that, the paychamber (P.a.v.) read his funeral" [2; 435 p]. So, if a person dies, then from the remaining inheritance from him, first of all, debt is deducted. The increased debt is used according to intent and divided into heirs.

And in the second verse it is called so:



From what your wives left (inheritance) to you – if they do not have children – half (tegur). If you have their children, you will touch a quarter (share) from what they left (inheritance). (This distribution) he (the deceased) after the will or debt (adosi) (executed). To those (wives) you left (inheritance) if you do not have children – one quarter (share) touches. If you have a child, touch them one-eighth of what you left (inheritance). (This is a division) after the will or debt (adasi) you have made (is executed)". [1. 79 p]

The continuation of this verse is about the legacy of "kalola", which is a person who does not have parents and children, but only (by the mother) has a brother or brother or sister or sister. In the course of the verse, it is mentioned about such an inheritance.

"If a (deceased) man or woman has one brother or sister or sister left (not by the mother) without both parents, then each of the two has a sixth (share). If (they) are more than one of these (adad, i.e.), they (inheritance) become equal partners in one third (contribution). (This distribution is made according to the will of Allah (execution) after the will or debt ADOS made without harm (execution). Allah is knowledgeable and knowledgeable" [1. 79 p].

In the course of the verses on the regulation of the distribution of this inheritance, verses highlighting them are mentioned:

"These are the regions (borders) of Allah. Whoever obeys Allah and his messengers will be admitted to the gardens beneath which rivers flow. (They are) there forever (they will be). This is a huge achievement" [1. 79 p].

"Whoever disobeys Allah and his messengers and goes beyond the regions, he will cause him to enter Hell (to stay) forever and suffer for him." [1; 79 p].

"(O Muhammad), they ask you for a fatwa. Say, " God gives you a decree (so) on a man who has neither a father nor a child: if a man without a child dies (dies), if his sister (the rest), take half of the inheritance of the inheritance left. If the sister does not have children, then she will inherit him (brother). If there are two (sisters), then two-thirds of what is left to them (Brother) (touches). If there are (heirs) brothers and sisters, then two female contributions (will be given) to each male. Allah will make clear to you (the truth of) your inheritance, that you may not go astray. Allah knows everything" [1; 106 p].

In these verses, the state of the person's right to inherit and the deprivation of it, as well as the obligatory way when he inherits from the cause of a relative bond, when he is deprived of the right to take all inheritance and when to take part, is very clearly

indicated by the amounts of shares of all heirs in general.

In these verses of the miracle, the basic principles of the science of faroism in itself, the judgments of inheritance and the totality of its pillars, in which no one's right, whether large or small, be it male or female, is unitized, but their share is determined to all.

Even before the solution of the issue of inheritance, the Koran is addressed to Karim, if he does not find a solution to this issue, then the Prophet (SaaS) will be asked to answer the question.a.v.) will be addressed to the circumcision of. Because the Sunnah is in three different positions in relation to the Qur'an in the right of Islam.

First, it comes to strengthening and highlighting the norms that come from the Qur'an.

Secondly, by interpreting the norms and terms that come in the Qur'an, understanding tirib comes.

In the third, it applies a new norm that is not in the Qur'an [3. 90 p].

On the issue of inheritance, too, the Sunnah has been in these three different approaches, with support in some places, commenting on some of its areas, and in some places applying new norms.

About the knowledge of inheritance and its Grace also come from many hadiths, one of them:

He is the son of Allah.a.will be narrated from):

"Nabiy (s.a.v.): "Knowledge is three-fold, and another is Grace: an excellent verse, and the Sunnah of Qaim, and the pharisah of Justice."

Narrated by Abu Dawud and the governor [4. 8 p].

This is the most important verse in the Hadith.a.v.) sunnats and just Pharisees are the knowledge of the division of inheritance with Justice.

It is necessary for a Muslim to study the Qur'an and the Sunnah and to follow it, as well as to study the science of inheritance. Therefore, it is necessary to pay great attention to this science.

Abu Huraira (r.a.) DN is reported:

"Nabiy (s.a.v.): "Learn the Quran and faroizni and teach people. Because I am a receipt taker, " they said" [4. 12 p].

The Prophet Muhammad (PBUH)a.v.) what they say "I am a receipt "means" I am a deceased", and they did not strongly propagate this to other sciences.

Imam Bukhari Jabir ibn Abdullah (may Allah bless him and grant him peace)a.in the narration he made from: "the messenger of Allah (PBUH) (PBUH) (PBUH)"a.v.) know Abu Bakr (r.a.) the two of them came to the tribe of Bani Salama in the pony, who saw me. Satellite (s.a.v.) seeing that I was lying in a strange sleep, they were cleaning asking for water, and when they scattered me from that water, I



came to myself and said, "O Messenger of Allah, what do you command me to do with my property?", I said. Then he said, "Allah has sent down to you a verse that commands you to bequeath about your children and to grant two daughters to one son." [5. 22 p].

"Faroizni (inheritance) hand over to their owners, and the rest are the closest ones" [6. 279 p].

"We do not leave an inheritance, what we leave is sadaqadur" [6. 279 p].

"I am more caring (closer) to believers than they are. Whoever died and remained in debt, to pass it is on our neck, and whoever left the goods after himself, it is the heirs" [6. 279 p].

"Whoever leaves the goods after himself, it is the heirs of the goods. I am the heir of the non-heir. I will inherit by paying his Khun. The mountain is the heir of a person without an heir. By paying khunini, he becomes his heir" [6. 279 p].

Such hadiths also make up a lot in the books of Suna. The third source after the Quran and Sunnah on the issue of inheritance is the "community".

"Ижмо" is an Arabic word, which means to act as an alliance, that is, to convene the mujtahideen (Muslim jurists) in the solution of a legal issue that is not clearly stated in the Qur'an and Hadiths and to issue a judgment upon coming to a single opinion.

Some issues of inheritance law in Islamic law have also been addressed by the community and they have been resolved on the following issues:

1) if there is no mother, then the grandmother alone will receive 1/6 share of the inheritance, according to which two and three grandmothers will be equal among themselves, this share is fixed by the community of companions and subordinates [7. 50 p].

Abu Bakr (may Allah bless him and grant him peace)a.) in the period of caliphate, this issue is discussed. A woman (some narrators say that the mother is the mother, some say that the father is the mother) Abu Bakr (r.a.) asked dan about the share that belongs to him from the inheritance. Shunde Abu Bakr (r.a.) "You are right, both in the book of Allah and in the Prophet (PBUH).a.v.) circumcision also does not say anything, so I will ask others about this issue," he said and asked. Thus, Muğiyra bin şuba said: "The Messenger of Allah (may peace be upon him) said:a.v.) who assigned them a share of 1/6", - he said. Abu Bakr (may Allah bless him and grant him peace)a.) "Who else besides you will confirm this?"when asked by Muhammad bin Maslama (r.a.) stand up, Mughiyra bin branch (r.a.) returned the sentence of. After that, Abu Bakr (r.a.) with all companions, the council determined that whether the mother, mother, father, mother or both, their share is 1/6 of the contribution . This share is obtained only when they are absent from the mother [2, 499 p].

2) the right of inheritance arises between the parties who have entered into a civil marriage relationship. In Bunda it does not matter whether the couple live together or separately. If after marriage suddenly the husband dies, the wife is the heir to him, if the wife dies, then of course the husband is his heir, even if they have not yet lived together. This issue has also been resolved through the community [5. 21 p].

Neither son nor daughter of someone who died, nor when the daughter of his son was a lonely heir, He (the granddaughter) received half of the inheritance, was also resolved through the community [8. 7731p].

In the system of Islamic law, the sphere of inheritance law is one of the most important and perfect institutions. The right to inherit Islam requires compliance with certain rules. This is due to the fact that the inheritance is mainly distributed to the heirs in the main sources of Islamic law, depending on their level. Its norm is determined mainly in the Koran Karim, partly in the Hadiths and Ijma. No matter how studied and tasted the right to inherit Islam, it still attracts people with its vital, important laws.

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A STUDY ON CUSTOMER'S SATISFACTION ON HEALTHCARE SERVICES WITH SPECIAL REFERENCE TO THE SENIOR CITIZEN'S OPINION ON PRIVATE HOSPITALS, CHENNAI

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ABSTRACT

Due to the changes in life style, the life expectancy of an individual got increased. The individual's average life span is around 70 years, which was 60 earlier. This causes the old age patients more in number. The health care sector is in the position to keep them as a separate segment and serve. The nuclear family culture in many families made these old age people to take care of themselves. Hence an attempt is been made to understand about this age group customer's satisfaction on health care services. The descriptive research design was adopted and 120 respondents were selected based on the judgemental sampling technique. Simple percentage analysis and one way ANOVA tools were utilised to analyse and interpret the data. Based on the findings of the study the suitable recommendations were made.

KEY WORDS: *Old age, Judgemental, satisfaction, patients and hospitals.*

INTRODUCTION

In a life span of an individual, the old age phase is toughest as it demands the hospitalisation of elders frequently. This old age people are tired and helpless both physically and mentally. In recent days, we could see a lot of societal changes like elders are alone at home and their children are in abroad due to their career and personal demands, both men and women are working etc.,. The dependency of these aged population on health care sector is very high and it need a special attention in coming days.

REVIEW OF LITERATURE

Gulcin Buyukozkan and Gizem cifci (2012) says that service sector is in the position of delivering continuous performance and improving its quality while being customer focused. The web based or electronic service quality improvement creates a further demand in higher quality. Now it has become important to be able to monitor and enhance electronic service quality too. Therefore, the research examined the electronic service quality concept and determine the key components of electronic service quality and provides few valid recommendations too.

Md. Muslem Uddin Chowdhury(2009) focused in customer expectations on socio economic factors that affect the health care sector. They took 1900 samples and they selected respondents randomly from the group of patients and management personnel. They adopted the service

quality measurement scale SERVQUAL to identify the customer expectations on healthcare sector. This study was carried out in Bangladesh. The researchers recommended the strategies to fill the service quality gaps in health care sector.

Dr. Ranajit Chakraborty, Anirban Majumdar(2011), focused on the measurement of patient satisfaction of service quality provided by hospitals. In this regard, a review of literature on the application of SERVQUAL model has been considered to investigate the relevance of the same in measuring patient satisfaction in health care sector in today's competitive environment.

Scotti, Dennis J.; Driscoll, Alfred E.; Harmon, Joel; Behson, Scott J.(2007) focused on a high-involvement approach to the work environment of healthcare employees may lead to exceptional service quality, satisfied patients, and ultimately to loyal customers. They studied the high performance work system's event with the sample of 113 Veterans Health Administration ambulatory care centres. They found that high performance work system's event is able to deliver the high quality service delivery and employee perceptions of customer service are linked to customer perceptions of high-quality service and perceived service quality is linked with customer satisfaction.

Muhammad Butt, M. and Cyril de Run, E. (2010), studies about the Malaysian private health care sector with the help of service quality measuring



instrument SERVQUAL. This study consists of 340 randomly selected participants visiting a private healthcare and the collected data were analyzed using means, correlations, principal component and confirmatory factor analysis to establish the modified SERVQUAL scale's reliability, underlying dimensionality and convergent, discriminant validity. Results indicate a moderate negative quality gap for overall Malaysian private healthcare service quality. Results also indicate a moderate negative quality gap on each service quality scale dimension. However, scale development analysis yielded excellent results, which can be used in wider healthcare policy and practice.

This research work adopted descriptive research design with 120 respondents as samples. The judgemental sampling technique was adopted and the respondents got selected carefully by the researcher. Both primary and secondary data were utilised and to collect the primary data, the structured questionnaire was used. The pilot study was conducted and the questionnaire was reframed accordingly. The collected data were analysed with simple percentage analysis and one way ANOVA. The major aspects considered for the study are ease to fix appointment, courtesy of the hospital staff, communication, professional efficiency of service providers and the facilities availability in hospitals.

METHODOLOGY

ANALYSIS AND INFERENCES

The major considered aspects were analysed here by using simple percentage analysis and one way ANOVA.

Table 1- Age group of the respondents

Age group	Frequency	Percentage
60-70	72	60
71 and above	48	40
	120	100

The above table shows the age group of the respondents. It shows that 60% of the respondents are in the age group of 60 to 70 and others are 71 and above aged.

Table 2 – Respondents opinion on ease of fixing appointments with doctors

Opinion	Frequency	Percentage
Highly Dissatisfied	2	1.6
Dis satisfied	6	5
Neutral	20	16.6
satisfied	50	43.3
Highly satisfied	40	33.3
	120	100

For the aged patients fixing the appointment with the doctors is a challenge as many of them not much familiar with recent technologies. So this was considered as a main criteria while assessing their satisfaction. Majority opined as satisfied about ease of fixing appointments.

Table 3- Respondents opinion on Courtesy of Hospital staff

Opinion	Frequency	percentage
Highly Dissatisfied	1	1
Dis satisfied	11	9
Neutral	24	20
Satisfied	44	37
Highly satisfied	40	33
	120	100

The service providers' interpersonal relationship and their approach and attitude on service receivers is considered as very important in-service sector. Health sector falls under service sector. Hence the courtesy of doctors, nurses, technicians, lab assistants and others are considered as an important aspect and majority of them expressed their positive opinion on the statement.

**Table no 4- Respondents opinion on comfort on communication**

Opinion	Frequency	percentage
Highly Dissatisfied	2	2
Dis satisfied	8	7
Neutral	42	35
Satisfied	38	32
Highly satisfied	30	28
	120	100

While communicating with the hospital staff, majority of the old aged people felt satisfied. They found quite comfortable while communicating with the staff members.

Table no 5- Respondents opinion on Professional efficiency of the staff members

Opinion	Frequency	Percentage
Highly Dissatisfied	1	1
Dis satisfied	4	3
Neutral	7	6
Satisfied	89	74
Highly satisfied	19	16
	120	100

Around 80 percentage of the respondents found the professional efficiency of the doctors as satisfactory.

Table no 6 - Respondents opinion on overall facilities provided by the hospital

Opinion	Frequency	percentage
Highly Dissatisfied	0	0
Dis satisfied	0	0
Neutral	12	10
Satisfied	31	26
Highly satisfied	77	64
	120	100

Only 10 percentage of the respondents felt that the overall facilities as neutral. Remaining 90 percentage of the old aged customers found the overall facilities as satisfactory and highly satisfactory.

To assess further the association between the age group of the respondents and the dimensions above discussed, the one way ANOVA analysis was carried out.

Table no 7- Table shows the difference between customer's age group and their satisfaction with ease to fix appointment with doctors, courtesy of hospital staff, communication, professional efficiency and overall facility of the hospital.

Ho: There is no significance difference between the age group of the respondents and their satisfaction with the dimensions of health care sector

Ha: There is a significance difference between the age group of the respondents and their satisfaction with the dimensions of health care sector

Factors		Sum of squares	df	Mean square	F value	sig
Ease of fixing Appointment	Between groups	1.031	1	1.031	3.800	.054
	With in groups	32.026	118	0.271		
	Total	33.058	119			
Courtesy of staff	Between groups	0.612		0.612	2.095	.150
	With in groups	34.498	118	0.292		
	Total	35.116	119			
Comfort of	Between	0.015	1	0.015	0.074	0786



communication	groups					
	With in groups	23.352	118	0.198		
	Total	23.367	119			
Professional efficiency	Between groups	0.327	1	0.327	1.007	.000
	With in groups	32.281	118	0.324		
	Total	38.607	119			
Overall facilities	Between groups	0.719	1	0.719	1.557	.275
	With in groups	54.487	118	0.462		
	Total	55.206				

The above table indicates that the significance value for customer satisfaction with respect to ease of fixing an appointment is 0.054 which is greater than 0.05. The null Hypothesis is accepted. Hence there is no Significant Difference between the age group and customer satisfaction towards ease of fixing an appointment. The Significance Value for Customer satisfaction with respect to courtesy of Hospital staff is 0.150 which is greater than 0.05. The Null Hypothesis is accepted. There is no significant difference between the age group and customer satisfaction towards the hospital staffs.

The Significance Value for Customer satisfaction with respect to comfort of Communication is 0.786 which is greater than 0.05. The Null Hypothesis is accepted. There is no Significant Difference between the age group and customer satisfaction towards the Professional efficiency of the medical staffs. The Significance Value for Customer satisfaction with respect to Facility is 0.215 which is greater than 0.05. The Null Hypothesis is accepted. There is no Significant Difference between the age group and customer satisfaction towards the overall facility of the hospital. The Significance Value for Customer satisfaction with respect to professional efficiency is 0.000 which is less than 0.05. The alternative Hypothesis is accepted. There is a Significant Difference between the age group and customer satisfaction towards the Professional efficiency of the medical staffs. They felt that few technical staff are lacking with their efficiency level.

FINDINGS AND RECOMMENDATIONS

Majority of the respondents are in the age group of 60 to 70 and they felt ease to fix appointment in hospitals and they are satisfied with the courtesy of hospital staff and they found comfortable in communication with the hospital staff. The old age patients are satisfied with the overall facilities of the hospitals and the professional efficiency of the staff. The further analysis revealed

that the 71 and above age group of the people are not very highly appreciated the professional efficiency of the staff members, which need some immediate action of the health care sector.

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A STATISTICAL ANALYSIS OF DIABETES IN MEDICAL ASTROLOGY BASED ON SAGGITARIUS LAGNA

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ABSTRACT

Astrology encompasses many divisions within oneself. The most notable of these is medical astrology. Medical astrology has been given much importance since ancient times. Various measures have been taken for the advancement of medical astrology in different times and in different countries. It is said that in the past, if a person became ill, the doctor would hold his hand and feel that the disease would go away in a matter of days or so. Medical astrology has been practiced as having the essential principles of knowledge of astrology, medical practice and medical knowledge within itself. Our focus is to establish and confirm the theories concerning diabetes, the impact of the six - eight - twelve houses that cause diabetes, as well as the effect of the planets Venus, Jupiter, Saturn, and the Moon, which are also believed to be factors causing diabetes. 'Diabetes in Medical Astrology' presents a comprehensive review of diabetic patients being treated and medications available in hospitals and using astrology and the structure of the planets, this study seeks to determine which planets cause diabetes by analyzing their horoscopes, as well as how to protect themselves from this disease using astrology.

KEYWORDS - Navagrahas, Dasa, Buddhi, Andara Nathan, Lagna, Rahu, Ketu.

I. INTRODUCTION

In astrology one can study a wide variety of categories within oneself. In ancient times, astrology was highly valued for its health benefits. The most prominent of these is medical astrology. Medical astrology has developed in different ways in different countries and influenced by many different factors. Thousands of years ago, astrology was practiced as a means of divination. In astrology, the sun, moon, planets, and outer space stars are used to predict future events. Astrologers were the ones who handled the medicine very well here, while physicians also offered surgical treatment to patients. Based on this, they predicted the harm to the country, knew the disease coming through it and treated the medical system accordingly.

II. THE CAUSALITY OF THE DISEASE OF THE ZODIAC

The twelve zodiac signs are responsible for many parts of the human body. These twelve zodiac signs also cause disease to the organs in the human body.

ARIES - Headaches, Nervousness, Unnatural Deep Sleepiness, Loss of Complete Anesthesia, Fainting, Loss of Age, Fascination, Brain and Brain Diseases, Insomnia, Symptoms of Swelling, Pain.

TAURUS - Cough and bronchitis, epilepsy (inability to count, perceive, and move due to brain disease), inflammation of the larynx, and cerebral palsy that regulate thought-provoking body movements. So they can also cause sexually transmitted diseases, hemorrhoids, constipation, irregular menstruation and so on.

GEMINI - Pulmonary diseases, dry cough, pneumonia, pneumonia, tuberculosis (inflammation of the lining of the heart, inflammation of the membranes of the hands, and osteoporosis)

CANCER - Abdominal pains, flatulence, indigestion, cough, hiccups, dehydration (depression of the body)

LEO - Vomiting, heart palpitations, nervousness due to continuous physical or mental work, dizziness, lightheartedness, spinal meningitis, spinal curvature, partial depletion of blood tissue from the heart, severe heart disease, anemia.



VIRGO - Tapeworm, roundworm, hookworm, malnutrition, typhoid, vomiting, intestinal, diarrhea, vitamin-B deficiency.

LIBRA - Some types of natural urinary tract infections, such as constipation, uterine inflammation, pelvic pain, rheumatic pains, dandruff, cloudiness, dermatitis, intestinal obstruction, hernia, kidney, intestinal tail disease.

SCORPIO - Damage to the bladder, rectum, large glands, part of the colon, nasal congestion, ovaries, sexually transmitted diseases, menstrual disorders, fractures, kidney stones.

SAGGITARIUS - Rheumatic pains in the hips, thighs, hips, lung problems, fractures of the neck bones, nerves, veins leading to the heart, edema.

CAPRICORN - Affects the circular bone, skin, knee joint, knee and abdomen of the knee. Dandruff, Cloudy, Jaundice, Arthritis, Nervousness, Depression, Anemia, Leprosy, Indigestion, Rheumatism.

AQUARIUS - Inflammation of the ankles, limbs, and arteries that carry blood to the heart.

PIECES - Diseases of the feet and nails, which also affect the intestines. Foot irregularities, hydrothorax, edema, paranoia, alcoholism, alcoholism and so on.

III. ASPECTS IN DIABETES HOROSCOPE

1. The planet in the star of the sixth lord creates or develops the disease of the planet seen with the sixth lord.
2. The sixth house in Lagna brings planetary disease and the planet standing in a star, a planet belonging to, a planet seen or developing disease that develops diabetes.

IV. DIABETES HOROSCOPE TABLES

Example Horoscope : 01

Date of Birth	: 09.08.1971	Time of Birth	: 04.30 PM
Place of Birth	: Tiruvarur	Lagna	: Saggitarius
Signs	: Aquarius	Star	: Poorvabhadra - 3
Dasa Bhukthi	: Jupiter Dasa 05 Years 03 Month 28 Days		

3. The two hostile planets are in the same zodiac sign or look at the same zodiac sign, the zodiac sign is to be treated for disease or surgery or injury.
4. Dasa, Buddhi brings disease when traveling in the negative zodiac signs in the constellation of the planets standing in the star of Andara Nathan.
5. The most visible planet in a horoscope and the least visible planet can cause or develop disease in the horoscope.
6. Rahu, Ketu, which is close to a lagna, is capable of congenital disease.
7. The planets that saw the sixth lord will get the disease of signfulness or housefulness or the planets who saw the sixth lord will get the disease of signfulness and housefulness.
8. The disease occurs because the planets have a transitional relationship with each other and are associated with six-eighth house interactions.

IV. RULES IN DIABETES HOROSCOPE

1. Diabetes is caused by the presence of Venus, Guru, Saturn, Moon planets in the 6th, 8th, 12th house lord.
2. 6th, 8th, 12th house lord if water zodiac sign has 6th lord in it then diabetes will occur.
3. Venus, Guru is one of these 6th, 8th, 12th house lord is in water zodiac so diabetes will occur.
4. Guru, Venus, Saturn planets Two of the three together cause diabetes because another sees them.
5. Guru Venus planets combination Diabetes is caused by being in or seeing the water zodiac.



		SATURN	
MOON	<u>RASI</u>		SUN VENUS KETU
MARS RAGU			MERCUR Y
LAGNA	JUPITER		

	SATURN		MOON
	<u>NAVAMSA</u>		RAGU
SUN KETU			MERCURY MARS JUPITER
VENUS		LAGNA	

Rules applied in horoscope table:

Rule 1: Diabetes is caused by the presence of Saturn planet in the 6th house lord.

Rule 3: Venus is 6th house lord is in water zodiac so diabetes will occur.

Example Horoscope : 02

Date of Birth : 08.03.1967

Place of Birth : Thanjavur

Signs : Capricorn

Dasa Bhukthi : Moon Dasa 05 Years 00 Month 26 Days

Time of Birth : 02.50 AM

Lagna : Saggitarius

Star : Sharaavan - 2

SATURN VENUS	RAGU		
SUN MERCURY	<u>RASI</u>		JUPITER
MOON			
LAGNA		MARS KETU	

	SUN	MOON	
MERCURY KETU	<u>NAVAMSA</u>		JUPITER
VENUS			RAGU
MARS	LAGNA		SATURN

Rules applied in horoscope table:

Rule 3: Diabetes is caused by the presence of Jupiter planet in the 8th house lord.

Example Horoscope : 03

Date of Birth : 27.12.1999

Place of Birth : Chennai

Signs : Leo

Dasa Bhukthi : Ketu Dasa 01 Years 06 Month 11 Days

Time of Birth : 07.30 AM

Lagna : Saggitarius

Star : Makha - 4



	JUPITER SATURN		
	<u>RASI</u>		RAGU
MARS KETU			MOON
LAGNA SUN	VENUS MERCURY		

MERCURY	KETU JUPITER		
	<u>NAVAMSA</u>		SUN MOON VENUS
	LAGNA	RAGU	MARS SATURN

Rules applied in horoscope table:

Rule 2: In 12th house if water zodiac sign has 6th lord Venus in it then diabetes will occur.

V. CONCLUSION

This study, entitled Diabetes in Medical Astrology, provides a comprehensive overview of patients being treated for diabetes in hospitals and the medications available to them. The purpose of this study is to find out how astrologers and planetary systems contribute to the horoscopes of diseased planets by obtaining their horoscopes and to learn about the effects of diabetes on others in the future and how to protect against it.

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EFFECTS OF LEADERSHIP STYLE ON ORGANIZATIONAL PERFORMANCE: CASE STUDY OF COLLEGE OF EDUCATION, HONG, ADAMAWA STATE

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ABSTRACT

More than half a century the term leadership has been a topic of discussion and research especially in the field of management and organizational development. More often than not, such discussions and or research work focuses on the issue of quality of leadership, ability of leader or leadership effectiveness or leadership styles. The main objective of this study is to examine the effect of leadership style on organizational performance of college of education Hong, Adamawa State. The study adopted survey research design, the total population of the study is 220, while sample size was 138 determined using Tero Yemani formula. The instrument used for collecting data from the respondents is the questionnaire, and the data collected from the respondent was analyzed and tested using regression analysis at 0.05 level of significance. The results revealed that democratic, autocratic, laissez faire and transformational leadership styles has significant effect on organizational performance in the study area ($\beta = 0.843$, $\beta = -0.961$, $\beta = -0.968$, $\beta = 0.380$, $P < 0.05$). The analysis revealed that there is significant relationship between democratic leadership style and organizational performance. Since employees will exercise self-direction if they are committed to the objectives, the leaders share power with employees in the college, also is been noted that employees helps the leaders in framing the rules, regulations and guidelines for the college and the leaders often asked employees for their vision regarding their job and then use their vision in appropriate place. Democratic leadership style has been the best practicing leadership style in College of Education, Hong due to the responses gathered from the responded. The study therefore, recommends that since most of the respondents affirmed that democratic leadership style is the most frequently used leadership style practice in College of Education, Hong. Therefore, there is need for the management to continue practicing democratic leadership in their day-to-day operations, nevertheless other forms of leadership style should also be applicable where and when necessary.

KEYWORDS: Effects, leadership style and organizational performance.

INTRODUCTION

Leadership and its style has been identified as one of the numerous factors that can enhance or impede organisational performance, that is to say that the importance of leadership in achieving optimum organisational performance cannot be overemphasized. The word leadership and leadership styles has been used in various aspects of human endeavour with diverse definitions. According to Ogbeidi (2012), leadership is defined as a body of people who lead and direct the activities of a group towards shared goal. It refers to the ability to lead, direct and organise a group. Leadership as a type of guidance where a person could give to a particular group, he manages relations in a way as to impact another individual's or group's behaviour.

Leaders determine values, culture, tolerance for change, and motivation for employees. They shape organizational approaches, including their efficacy and implementation. It must be emphasized that leaders could be seen at any organizational level

and aren't exclusive to management (Igbaekemen, 2015). A style of leadership is the method that managers use to practice their leadership role, according to Armstrong Sofi, (2015). It is seen as a specific behaviour employed by a leader in a company to empower staff to achieve the organization's set of goals. Leadership style plays a vital role in today's businesses. Leadership style is the manner in which a director or boss wants to behave with his or her staff or colleagues and the manner in which they exercise the leadership role (Xenikou, 2017).

According to Michael (2011) leadership has a direct cause and effect relationship upon organizations and their success. Leaders determine values, culture, change tolerance and employee motivation. They shape institutional strategies including their execution and effectiveness. Leaders can appear at any level of an institution and are not exclusive to management. Successful leaders do, however, have one thing in common. They influence



those around them in order to reap maximum benefit from the organization's resources, including its most vital and expensive.

In past years, scholars have proposed many different styles of leadership as there is no particular style that can be considered universal and also Oyetunji, (2006) equally said that for more than half a century the term leadership has been a topic of discussion and research especially in the field of management and organizational development. More often than not, such discussions and or research work focuses on the issue of quality of leadership, ability of leader or leadership effectiveness or leadership styles (Adlam, 2003). According to (Adlam, 2003), leadership is a rather complex concept. This is especially true because several approaches have been employed to provide meaning to the term leadership and its effectiveness. Therefore, this study will review relevant literature on the topic in order to find simple conceptual definition of leadership which captures the key elements and relationship so that it could be generally understood. Despite of the numerous styles of leadership, an effective leader inspire, motivates and directs activities to help achieve organizational goals and objectives, yet no single style is universally accept as the best, it is widely known that leadership plays an important role in all organizations, although, progresses have been made by scholars in understanding the traits of leadership. However, there exist the needs to realize that much was not known about these activities, i.e. how to effectively apply the leadership style in organization to enhance performance.

Though, several studies on leadership style has shown consistent relationship with various performance indicators across different cultures (Rejas, Ponce, Almonte and Ponce 2006; Pradeep and Prabhu 2011; Paracha, Qamar, Mirza, Hassan and Waqas, 2012; Muterera, 2012). But when compared to other parts of the world, relatively few studies have considered it in Nigeria. Even with the present knowledge of leadership, some organizations administrative phenomenon reflects the contingency of leadership, and style, situation of performance criteria have been left to suffocate on their own. As a result workers performance was affected due to lack of proper direction and application of strategic leadership style in managing daily duties adequate motivation, suitable work environment, compensation, efficient communication between management and subordinates which plays an important in promoting goals. Among all the studies reviewed, none of them focused on the four leadership styles being neither studied nor researched on colleges of Education and this is one Area this study intends to address. Furthermore, there are missing links in understanding the relationship

between leadership and performance which some studies have suggested for inclusion and this research intends to address these gaps by examining the effect of leadership styles surrogates i.e. Democratic (DL); (Autocratic (AL) and Laissez-faire (LL) on the organizational performance of College of Education Hong, Admawa State, Nigeria.

Following research hypotheses were formulated to guide the study;

- H₀₁ Democratic leadership style does not have significant effect on organizational performance in College of Education, Hong
- H₀₂ Autocratic leadership style does not have significant effect on organizational performance in College of Education, Hong
- H₀₃ Laissez faire leadership style does not have significant effect on organizational performance in College of Education, Hong.

LITERATURE REVIEW

Leadership Style

According to the Investopedia, "Leadership is the ability of a company's management to set and achieve challenging goals, take swift and decisive action, outperform the competition, and inspire others to perform well." Leadership is the life blood of any organization and its importance cannot be underestimated. According to Armstrong (2012), a leadership style is the approach used by managers to exercise their leadership function. This is seen to be a particular behavior a leader in an organization employs to motivate employees towards the achievement of a defined objective of the organization (Haque et al., 2015; Igbaekemen & Odivwri, 2015; Ng'ethe et al., 2012). Leadership style plays an important role in the organizations of today. As defined by Mullins (2000), leadership style is the way and manner in which a manager or supervisor chooses to act towards his employees or subordinates and the way the leadership function is being carried out by them (Xenikou, 2017).

Organizational Performance

According to Daft (2000), organisational performance is defined as an organisation's ability to attain its goals by using resources in an efficient and effective manner. Organizational performance can also be used to view how an enterprise is doing in terms of level of profit, market share and product quality in relation to other enterprises in the same industry. Accordingly, it is a reflection of productivity of members of an enterprise measured in terms of revenue, profit, growth, development and expansion of the organization (Kehinde, Jegede & Akinlabi, 2012). Organizational performance is a complex and multidimensional phenomenon in the business literature. Organizational performance



comprises of the results of an organization or the actual outputs of an organization, which can be measured against intended outputs, goals and objectives. The organizational performance involves three areas associated with the organization – financial performance (return on investments, profits etc.), shareholder return (economic value added, total shareholder etc.) and the product/service market performance (market share, sales etc.) (Gavrea, et al., 2011).

Democratic Leadership Style

Democratic leadership, also referred to as participative leadership, is a type of leadership style in which members of the group take a more participative role in the decision-making process. This style of leadership dwells on performance and people (Bhargavi & Yaseen). Democratic leadership style encourages employees to participate in the decision making process of the organization (Nwokocha & Iheriohanma, 2015). Democratic leadership yields a lot of benefits. Subordinates are encouraged to share their thoughts; it can lead to better ideas and more creative solutions to problems (Sadia & Aman, 2018). Employees also feel more involved and committed to projects, making them more likely to care about the end results. It is perceived that democratic leadership style leads to higher productivity among group members.

Autocratic Leadership Style

An autocratic leader is often seen as someone that is well aware of his status and has little faith or trust in the subordinates. Autocratic rulers in nature are classic and bossy. Those leaders need their subordinates to function as they dictate (Al Khajeh, 2018). In general, autocratic rulers like them reserve the right to take decisions (Longe, 2014). Longe (2015), indicates that autocratic leadership might be helpful in cases of emergency, where there is a homogeneous workforce included, in which the leader is smart, rational, and has a significant understanding of the followers. Special initiative might be required in these situations to avoid a potential incident. Among many of the weaknesses of autocratic leadership is the unwillingness of the subordinates to cultivate the satisfaction of achievement, rejection of individual development and self-actualization gratification, as well as antagonizing people and wiping the organization of lifelong allegiance and cooperation. Nevertheless, in some cases, an autocratic approach is acceptable. It is important when the organization faces a crisis or if there is an urgent issue that requires an instant response (Bhargavi & Yaseen, 2016). In addition to bullying, there is no common goal and hardly any encouragement. Autocratic leadership usually

reduces engagement, innovation and creativity (Al Khajeh, 2018).

Laissez- Faire Leadership Style

Laissez faire is a French term that means "let it be" and is also referred to as "hands off style" (Nwokocha & Iheriohanma, 2015). It means putting fellow employees throughout the manner they like without compliance to any strict rules or protocols to complete projects and jobs. The laissez-faire leader avoids managing his staff, according to Puni et al. (2014), and therefore depends only on the few available staff that are committed to the job. Laissez faire leaders were argued not to invest in the advancement of staff as they assume that staff should take good care of themselves (Puni et al., 2014). Robbins (2007), explained the laissez-fair style as "Abdicates responsibilities avoid making decisions". Similar Luthans (2005), defined laissez- fair style as "Abdicates responsibilities avoids making decisions". Laissez- Fair is uninvolved in the work of the unit.

EMPIRICAL REVIEW

Tareq (2016), conducted study on the impact of transformational leadership style on organizational performance: evidence from Jordan. International Journal of Human Resource Studies. A total of 249 surveys were distributed with 213 returned and 171 eligible for use. The data was analyzed using multiple regression with a significance level of $p < 0.05$. The results indicate that while transformational leadership and three of its components—inspirational motivation, intellectual stimulation, and individual consideration—did contribute to 81.6 percent of the variance in organizational performance; idealized influence was not a significant factor contributing to this outcome. The study was carried out only on one surrogates of leadership style i.e. transformational leadership style, ignoring other forms of leadership style their significant impact on organizational performance. Also his study was not based on Nigerian context.

Augustine, (2017) carried out study on effects of leadership styles on organisational performance in Ahantaman Rural Bank Limited, the study adopted a total population sampling approach to data collection. Among the leadership styles investigated, transformational leadership style obtained the highest raw score of 350 representing 22 percent of the total population investigated. $P < 0.05$, the finding revealed that the most dominant and preferred leadership style in the Bank was transformational leadership style. This leadership style led to improved and consistent performance of the Bank. His finding was based on banking sector rather than educational institutions, also his study was not conducted based on Nigerian



context. The result may probably differs is same study was carried out using Nigerian context.

Raed, Mubarak, Mohammed, Nasser and Osama (2018) carried out study on the effect of leadership style on organizational performance: organizational commitment as a mediator variable in the manufacturing sector of Yemen using the quantitative method was adopted based on the response of questionnaires in data collection, while the hypothesis was tested based on the EFA and CFA structural equation models and were carried out using SPSS Amos 21.0. $P \leq 0.05$, the results indicated significantly positive effect of leadership on the organizational performance and indicated the significantly the strength of an indirect or a mediating effect of organizational commitment on organizational performance. This study failed to identify what forms of leadership style is more appropriate to apply in organizations in order to achieve high organizational commitment, also their findings are based on manufacturing sector.

Similarly, Akparep, Jengre, and Mogre, (2019), conducted study on the influence of leadership style on organizational performance at Tuma Kavi Development Association, Tamale, Northern Region of Ghana, using qualitative case study design was employed. Purposive sampling was adopted to sample a total sample size of 11 respondents representing 65% of the total staff population. $P \leq 0.05$, the results of this study also revealed that there is strong relationship between leadership style and organizational performance of TKDA. As the strength of the organization dwells much on democratic style of leadership, it is recommended that management. Their finding succeeded in establishing the relationship between leadership style and organizational performance, but failed to make it clear that other forms of leadership style other than democratic also have their own strength in decision making depending on the situation at hand.

THEORETICAL FRAMEWORK

For a better understanding of our subject matter, we shall adopt the eclectic approach and draw from three theories which include the democratic, the system, and the need theory of individuals. The reason for this is that each theory reinforces the other.

The Democratic Theory

Though this theory has been largely associated with government, it has become in evitable to relate it to organizations for proper conduct and effectiveness. As Besse (1957) puts it, the theory is informed two thousand years ago, participation in the religion which has come to

dominate the World. Two hundred years ago we put this essential element in our political and social structure. We are just beginning to realize that we ought to put participation in business as well. The theory is informed by the works of classical and neo-classical theorists such as Aristotle, Plato, Thomas Hobbes, John Locke, Jean Jacques, Rousseau, Edmund Burke, James Madison, John C. Calhoun to mention a few (Baradat, 1979). The core issue about democracy is the importance it attaches to human personality (Appadorai, 1975). It assumes civic capacity on the part of individuals. This capacity involves intelligence, self-control and conscience. Its essence is the right of every man bound by the decision of a government (organization) to contribute (what ever is in him to contribute) to the making and remaking of those decisions. This right is integral to democracy because it makes possible free discussion and the continuous participation of the people (individuals) in the government (organization). This implies the obligation to respect the other man, to listen to his arguments and to take into account his point of view. It is through participation that individuals (subordinates) contribute ideas towards the solution of problems affecting their organization and jobs. Participation can create an asset in morale so that when necessary orders are given, people will respond more co-operatively because they are participating in the affairs of the organization.

For the purpose of this study, democratic leadership theory was adopted, the reason for chosen this theory is because the theory emphases that a good leader should be intelligence, self-control and conscience. Its essence is the right of every man bound by the decision of organization to contribute (what ever is in him to contribute) to the making and remaking of those decisions. This right is integral to democracy because it makes possible free discussion and the continuous participation of the people (individuals) in the government (organization), and these ideas are in line with the subject matter under study.

RESEARCH METHODOLOGY

Survey research design was used in this study, the area of study of this research has been on the effects of leadership styles on the performance of College of Education Hong in Adamawa State, Nigeria. The population of the study covers (42) Administrative staff, (65) Academic departments, (75) other employees and the total number of staff of college available at the time of study which stand at about (220). Whereas, Yamani (1964) formula was used to draw the sample size for the study, which is calculated as follows:



$$n = \frac{N}{1 + N(e)^2}$$

$$N = 220$$

$$n = \frac{220}{1 + 220(0.05)^2}$$

$$n = \frac{220}{1 + 220(0.0025)}$$

$$= \frac{220}{1.6}$$

$$= 137.5$$

Therefore, the sample size for this study is 138.

For the purpose of this research work both primary and secondary data were information and also to enhance information and also to enhance appropriate cross-checking of data collected. Majority, the source of data collected is primary data and this could be done through the questionnaire administration. The data for this study was obtained through the primary and secondary sources. Close ended questionnaire was an instrument designed to

gather primary data that have direct relevance with the research questions to ensure a fair reconciliation of the ideas already contained in the questionnaire. Books, magazines, journals, periodicals, articles, and other paper presentation relevant to the topic were used as secondary data. A pilot study was carried out to determine the reliability of the questionnaires. The pilot study involved the sample of 30 respondents from the target population.

Table 1: Reliability Tests of the factors

Scale	Cronbach' Alpha	Comments
Democratic leadership style	0.742	Accepted
Autocratic leadership style	0.816	Accepted
Laissez Faire leadership style	0.785	Accepted
Organizational performance	0.882	Accepted

Source: (Researcher's Computation, 2019)

Data analysis is one of the major steps in any research work. The data collected for this study were presented in table form. The researcher however, would use Statistical Package for Social Sciences (SPSS) and frequency table and percentage analysis method in analysing the data obtained. The formula

for calculating percentage is given thus: $\frac{n}{N} \times 100$,

where n = total number of respondents from the given option in the question, while N = total number

of respondents sampled for the study analysis. While hypotheses will be tested using correlation and regression analysis at 0.05 level of significance.

DATA PRESENTATION, ANALYSIS AND FINDINGS

One hundred and thirty eight (138) questionnaires were administered. A questionnaire is the primary data tool that was used in the presentation and analysis of the data collected.

Rate of Return

S/No	Questionnaire distribution	Returned	Unreturned
	138	118	20
%	100	85.5	14.5

(Source: Field Survey, 2020)

Out of 138 questionnaires administered;

Returned $\frac{118}{138} \times 100 = 85.5\%$

Unreturned $\frac{20}{138} \times 100 = 14.5\%$

118 were successfully returned and valid, while 20 were not returned.



Hypotheses Testing

Hypothesis One

H₀₁ Democratic leadership style does not have significant effect on organizational performance in College of Education, Hong

Table below: Model Summary of Model effect of democratic leadership style on organizational performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.843 ^a	.711	.708	1.48272

a. Predictors: (Constant), DLS

b. Dependent Variable: OP

(Source: Field Survey, 2020).

Table above shows there is a linear relationship between the test results scores of the perceived response on the relationship between democratic leadership style and organizational performance. Coefficient shows a positive linear relationship between both test scores ($r = .84$) that is significantly different from zero ($p < 0.05$). This implies that there is significant relationship between democratic leadership style and organizational performance. The model summary in Table above reveals that the values of the coefficient

of determination for models of independent and dependent variable are $R = 0.84$, the R^2 statistic of .711 (71.1%) shows that the model is a good predictor of the dependant variable. This shows that the model explain about 84.3% variations in the dependant variable, while the remaining 15.7% is attributed to variables not captured by the regression model. The model shows that democratic leadership style has positive effect on organizational in College of Education, Hong.

Table below: Analysis of Variance Statistics of Model on the democratic leadership style on the organizational performance

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	626.955	1	626.955	285.181	.000 ^a
	Residual	255.020	116	2.198		
	Total	881.975	117			

a. Predictors: (Constant), DLS

b. Dependent Variable: OP

The result on the ANOVA Table above shows that model one had an F (1, 117) of 285.181 and a p-value = 0.000. This meant that the two variables were both significant (p-value less than 0.05) at 0.05 level of significance in explaining that there is relationships

between democratic leadership style and organizational performance of College of Education, Hong.

Table below: Coefficients of Model Effect of Democratic Leadership Style on Organizational Performance

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	7.954	.721		11.034	.000		
	DLS	.612	.036	.843	16.887	.000	1.000	1.000

a. Dependent Variable: OP



The model in table above show that the coefficients of the effect democratic leadership style on organizational performance is statistically significant ($b = .843$, $t(117) = 11.034$, $p = .000$). This means that

there is significant relationship between democratic leadership style and organizational performance of College of Education, Hong.

Hypothesis Two

H₀₂ Autocratic leadership style does not have significant effect on organizational performance in College of Education, Hong

Table below: Model Summary of Model on the Autocratic Leadership Style on Organizational Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961 ^a	.923	.922	.76647

a. Predictors: (Constant), ALS

b. Dependent Variable: OP

(Source: Field Survey, 2019).

Table above shows there is a linear relationship between the test results scored on the perceived response on the relationship between autocratic leadership style and organizational performance. Pearson's bivariate correlation coefficient shows a positive linear relationship between both test scores ($r = .961$) that is significantly different from zero ($p < 0.05$). This implies that there is significant relationship between autocratic leadership style and organizational performance of College of Education, Hong. The model summary in Table above reveals

that the values of the coefficient of determination for models independent and dependent variable are $R = 0.961$, the R^2 statistic of 923 (92.3%) shows that the model is a good predictor of the dependant variable. This shows that the model explain about 96.1% variations in the dependant variable, while the remaining 3.1% is attributed to variables not captured by the regression model. The model shows that autocratic leadership style has positive effect on organizational performance of College of Education, Hong.

Table below: Analysis of Variance Statistics of Model on the Autocratic Leadership Style on Organizational Performance

ANOVA ^b						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	813.827	1	813.827	1.385E3	.000 ^a
	Residual	68.147	116	.587		
	Total	881.975	117			

a. Predictors: (Constant), ALS

b. Dependent Variable: OP

The result on the ANOVA Table above shows that model one had an F (1, 117) of 1.385 and a P - value = 0.000. This meant that the two variables were both significant (P - value less than 0.05) at 0.05 level of

significance in explaining that there is a relationship between autocratic leadership style and organizational performance of College of Education, Hong.

Table below: Coefficients of Model on the Effect of Autocratic Leadership Style on Organizational Performance Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	26.747	.197		135.865	.000		
	ALS	-.473	.013	-.961	-37.219	.000	1.000	1.000



		Coefficients ^a				Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients			
Model		B	Std. Error	Beta	t	Sig.	
1	(Constant)	26.747	.197		135.865	.000	
	ALS	-.473	.013	-.961	-37.219	.000	Tolerance 1.000 VIF 1.000

a. Dependent Variable: OP

The model in table above show that the coefficients of effect autocratic leadership style on organizational performance is statistically significant ($b = -.961$,

$t(117) = 135.865$, $p = .000$. This meant that there is significant relationship between autocratic leadership style and organizational performance.

Hypothesis Three

H₀₃ Laissez faire leadership style does not have significant effect on organizational performance in College of Education, Hong.

Table below: Model Summary of Model on the Effect of Laissez faire leadership style on Organizational Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.968 ^a	.937	.936	.69305

a. Predictors: (Constant), LLS

b. Dependent Variable: OP

(Source: Field Survey, 2019).

Table above shows there is a linear relationship between the test results scored on the perceived response on the relationship between laissez faire leadership style and organizational performance. Pearson's bivariate correlation coefficient shows a positive linear relationship between both test scores ($r = .968$) that is significantly different from zero ($p < 0.05$). This implies that there is significant relationship between laissez faire leadership style and organizational performance of College of Education, Hong. The model summary in table above reveals

that the values of the coefficient of determination for models independent and dependent variable are $R = 0.968$, the R^2 statistic of 0.937 (93.7%) shows that the model is a good predictor of the dependant variable. This shows that the model explain about 96.8% variations in the dependant variable, while the remaining 3.2% is attributed to variables not captured by the regression model. The model shows that laissez faire leadership style has effect on organizational performance of College of Education, Hong.

Table below: Analysis of Variance Statistics of Model Laissez Faire Leadership Style on Organizational Performance

ANOVA ^b						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	826.258	1	826.258	1.720E3	.000 ^a
	Residual	55.717	116	.480		
	Total	881.975	117			

a. Predictors: (Constant), LLS

b. Dependent Variable: OP

The result on the ANOVA table above shows that model one had an F (1, 117) of 1.720 and a P - value = 0.000. This meant that the two variables were both significant (P - value less than 0.05) at 0.05 level of

significance in explaining that there is a relationship between laissez faire leadership style and organizational performance of College of Education, Hong.



Table below: Coefficients of Model on the Effect of Laissez Faire Leadership Style on Organizational Performance
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	23.938	.116		205.907	.000		
	LLS	-.309	.007	-.968	-41.476	.000	1.000	1.000

a. Dependent Variable: OP

The model in table above show that the coefficients of laissez faire leadership style on organizational performance is statistically significant ($b = -0.968$, $t(117) = 205.907$, $p = .000$). This meant that there is significant relationship between laissez faire leadership style and organizational performance of College of Education, Hong.

SUMMARY OF FINDINGS

The following findings were derived from the hypotheses tested above;

- i. Finding revealed that are significant relationship between democratic leadership style and organizational performance in College of Education, Hong since coefficient shows a positive linear relationship between both test scores ($r = .84$) that is significantly different from zero ($p < 0.05$) and the result on the ANOVA table 4.4 shows that model one had an F (1, 117) of 285.181 and a p-value = 0.000. This meant that the two variables were both significant (p-value less than 0.05) at 0.05 level of significance in explaining that there is relationships between democratic leadership style and organizational performance of College of Education, Hong.
- ii. It was also revealed that shows there is a linear relationship between the test results scored on the perceived response on the relationship between autocratic leadership style and organizational performance, because Pearson's bivariate correlation coefficient shows a positive linear relationship between both test scores ($r = .961$) that is significantly different from zero ($p < 0.05$). This implies that there is significant relationship between autocratic leadership style and organizational performance of College of Education, Hong. And the result on the ANOVA Table 4.7 shows that model one had an F (1, 117) of 1.385 and a P - value = 0.000. This meant that the two variables were both significant (P - value less than 0.05) at 0.05 level of significance in explaining that

there is a relationship between autocratic leadership style and organizational performance of College of Education, Hong.

- iii. The model summary in Table 4.9 reveals that the values of the coefficient of determination for models independent and dependent variable are $R = 0.968$, the R^2 statistic of 0.937 (93.7%) shows that the model is a good predictor of the dependant variable. This shows that the model explain about 96.8% variations in the dependant variable, while the remaining 3.2% is attributed to variables not captured by the regression model. The model shows that laissez faire leadership style has effect on organizational performance of College of Education, Hong.

CONCLUSION

This study concludes that there is significant relationship between democratic leadership style and organizational performance. Since employees will exercise self-direction if they are committed to the objectives, the leaders share power with employees in the college, also is been noted that employees helps the leaders in framing the rules, regulations and guidelines for the college and the leaders often asked employees for their vision regarding their job and then use their vision in appropriate place. Democratic leadership style has been the best practicing leadership style in College of Education, Hong due to the responses gathered from the responded.

The study further concludes that autocratic leadership style on the other hand has effect on organizational performance of the college, despite the fact that employees are forced to carry their unfinished college work home. Though, as a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives and unreasonable deadlines are not imposed on them in the College.

Conclusively, the study concludes that laissez faire leadership style has both positive and negative effect on organizational performance of College of Education, Hong. It is a fact that the leaders didn't



give freedom to employees' staff to decide the course of action at all the times. Leaders sometimes delegate the power to employees for implementation of new rules and regulations.

Recommendations

The study recommends the following to assist in alleviation the problems identified in the course of this study as follows;

- i. Since most of the respondents affirmed that democratic leadership style is the most frequently used leadership style practice in College of Education, Hong. Therefore, there is need for the management to continue practicing democratic leadership in their day-to-day operations, nevertheless other forms of leadership style should also be applicable where and when necessary.
- ii. The management is advice not to adopt autocratic leadership style as a way of managing the institution's affairs, because it has many negatively on the welfare of employees and the organizational performance of the institution as a whole. Except, if the situations at hand warrant the use of authoritarian power to achieve the stated goals, without any options, then is advice the management can implement autocratic leadership style.
- iii. Despite the shortcomings associated with laissez faire leadership style, the management should sometimes practice this form of leadership style, employees should be giving freedom to decide the course of action attached to their responsibilities, and this will provides them with sense of belongingness to discharge their duties in more efficient and effective manner.

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CLIENTS' AWARENESS AND ACCESS TO SERVICES PROVIDED BY IMPROVED COMMUNITY HEALTH FUND SCHEME IN MASEREKA VILLAGE LUSHOTO DISTRICT IN TANZANIA

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ABSTRACT

Tanzania government through Ministry of Health Community Development Gender Elderly and Children has introduced Improved Community Health Fund (iCHF) scheme following operational and financial management challenges which were facing the previous Community Health Fund (CHF) scheme. This study assessed clients' awareness and access to services in iCHF in Masereka village Lushoto District. A cross-sectional survey design was adopted to collect data using questionnaire. The study used stratified random sampling to select 104 head of households from four hamlets namely Masereka, Ludende, Tanda and Yatanga. Descriptive statistical analysis was applied using SPSS version 16 to generate mean, standard deviation, frequencies and percentages. Results showed that few community members are aware of the criteria used to enroll new members to iCHF (50.5%) and other few community members are familiar with health facilities accredited to iCHF scheme (44.7%). The study also revealed that the quality of healthcare services provided through iCHF scheme are perceived to be reliable in respect to fast treatment (Mean score=3.5, SD=1.165), availability of medicines (Mean score=3.3, SD=1.211), accurate medical examination (Mean score=3.4, SD=1.327), accurate treatment (Mean score=3.1, SD=1.336) and easy contact with health workers (Mean score=3.6, SD=1.148). More findings showed that in comparison to health services provided through iCHF accredited health facilities, the community perceived that the costs of enrolment to iCHF is relatively lower (Mean score=3.5, SD=1.066), premium is relatively fair (Mean score=3.8, SD=1.104) and health staff provide good care to clients (Mean score=3.5, SD=1.126). Community members who are non-iCHF members reveal that their reasons for not being enrolled to iCHF were still prefer and trust in traditional medicine (59.2%), and other community members (26.3%) do not afford the iCHF premium. The study recommends that iCHF management and health sector development partners such as Tanzania Social Action Fund (TASAF) and non-governmental organization should increase their efforts in providing clear information to the rural communities and support poor households to enroll to iCHF especially in Masereka village. Clear information and support can motivate many households to enroll to iCHF and leave away their high dependence on traditional medicine which usually lack clear scientific basis in prevention and treatment of diseases.

KEYWORDS: community health fund, improved community health fund, awareness, reliability

1. INTRODUCTION

Universal health coverage (UHC) is one of the United Nations' Sustainable Development Goals (SDGs) which has given a major priority by the government of Tanzania. The UHC agenda aims at increasing mobilization of domestic resources through the initiation of sustainable financing mechanisms for healthcare services (Lee et al., 2018). The UHC will help to end up fragmentation of health insurance coverage, increase healthcare resources, provide all people a minimum benefits for all, and increase the efficiency of health spending (Lee et al., 2018). Community Based Health Financing (CBHF) which contributes to the fulfillment of UHC has emerged in

developing countries following existing challenges in the health financing system including low economic growth, constraints on the public sector and low organizational capacity (Carrin, 2003). The CBHF such as Improved Community Health Fund (iCHF) is a mechanism whereby community members at household level finance or co-finance costs associated with health services, and highly participate in the management of community financing scheme and organization of health services (Carrin, 2003).

Tanzania faced economic crisis between 1970s and 1980s which contributed to the failure of national economy to provide essential services like education, water and health services. In order to overcome this



situation, the government decided to introduce user fees (cost sharing) so that people can assist the government efforts in meeting their needs on health service (Bennett et al., 2004). The introduction of user fees caused many people to rely much on out of pocket payment to acquire health services (Bennett et al., 2004). Later, out of pocket payment had harmful impact to the poor households which are not able to use cash payment for healthcare services. This led Tanzania government to find out a new option of financing the health sector so as to enhance access to basic healthcare services to all citizens particularly the poor (Hinju, 2017).

The government through Ministry of Health Community Development Gender Elderly and Children introduced and operating two major health insurance schemes namely National Health Insurance Fund (NHIF) which mostly covers employees from public sectors and formal private sectors, and Community Health Fund (CHF) which mostly enrolls people working in informal sector from both, urban and rural areas. The CHF has recently undergone a reform and now is known as Improved Community Health Fund (iCHF). The iCHF has extended its healthcare services to regional government hospital level from district level as it was for CHF. Another health scheme known as Social Health Insurance Fund (SHIB) was introduced and operated by National Social Security Fund (NSSF) whereby SHIB members can voluntarily join the fund by allowing deductions of their monthly NSSF contributions. The NHIF was established by the Act of Parliament No.8 of 1999 and began its operation in June 2001.

The CHF was introduced in Tanzania as part of the Ministry of Health's initiatives to make healthcare services affordable and available to the rural population and the informal sector. The scheme was established by Community Health Fund Act, 2001. In the financial year 2016/17, the CHF had an enrollment of over 2.1 million households, covering roughly 12.6 million beneficiaries (Lee et al., 2018). The CHF achieved to pool funds at the district level while iCHF plans to pool funds at the regional level (Lee et al., 2018; URT, 2018). In order for beneficiaries to get access to iCHF services in district and regional hospitals, they are required to have a referral from primary health facilities. There are different premiums which are charged to iCHF members based on locations. For instance, in Dar es Salaam, premiums are set per beneficiary at TZS 40,000 or TZS 150,000 per household of six. In all other urban areas in the country, premiums are set per beneficiary at TZS 30,000. In rural areas, premiums are set per household of six maximum members at TZS 30,000. Each additional adult is set at TZS 30,000 and each additional child is

set at TZS 10,000. Alternatively, a household with more than six (6) members can form two iCHF households (URT, 2018).

The reform of CHF was done by the government of Tanzania following various challenges which were constraining its implementation including unclear reporting system, poor management of fund collected and expenditure, poor management by CHF committees of health facilities, little revenue collection, relying on enrolling sick people and lack of access to referrals among CHF members (URT 2018). Based on these challenges, three main operational areas including governance, enrolment and benefit package were included in the reform to iCHF in order to improve the quality of service provided (URT, 2018). In Lushoto District Council iCHF started its operation in 2019. Until May in 2021, the households enrolled to iCHF were less than 5% of 742 total households of Masereka village. However, achievement in the enrolment of members to iCHF in the village depends on community awareness about the fund and service quality offered by accredited health facilities.

The SERVQUAL model developed by Parasuraman et al. (1985), Riono (2017) explained the perceived reliability in service quality of health facilities in providing healthcare to fund members (such as iCHF members). Access to service quality from accredited iCHF health facilities was assessed through clients' perceived reliability using service quality indicators which include; having fast, and accurate examination and treatment services; the patient's examination schedule is performed appropriately; the service procedure is not complicated; and easy to contact the medical staff. The awareness of community members on iCHF scheme has been explained by Theory of Diffusion of Innovation (DOI) pioneered by Rogers (2003). The DOI theory asserts that in order to use new practice such as iCHF, the community should be aware such practice through clear information provided by government and health sector partners such as non-governmental organization (NGOs). Community awareness can be extended through dissemination of iCHF information by using various communication strategies conducting community meetings, seminars and use of media (such as radio stations, television, magazines and newspapers) (Rogers, 2003). Before community members enroll to iCHF services, they usually seek information about the fund operations such as costs, service coverage, benefit packages and management of the fund so that they can be aware about the quality of service provided to relate with alternative healthcare services they are already using. Therefore, the iCHF services are supposed to be less expensive and socially acceptable in comparison to alternative approaches



payments of healthcare or alternative health care services.

Studies have already been in Tanzania focusing on existed CHF services particularly with respect of packages offered, and implementation and operational challenges (Mtei and Mulligan, 2007; Lee et al., 2018; Hinju, 2017; Mkumbo and Masbayi, 2014). Yet, there is scant information regarding community awareness and service quality offered by improved community health fund scheme in Lushoto District especially for Masereka village. It's through adequate information on community awareness and service quality of the fund, the government and other health sector stakeholders can continue improving iCHF services. In order to address the uncertainty of information, the current study assessed community awareness and perceived service quality in iCHF scheme in Lushoto District Tanzania and Masereka village in particular.

2. METHODOLOGY

2.1 Research design

The study used a cross-sectional design which allowed the collection of data at a single point in time. Hence, each respondent participated once in the study as a source of information. Through this design, quantitative approach was employed in gathering quantitative data.

2.2 Methods of data collection

Survey was a method of data collection used whereby structured questionnaire was an instrument of data collection which administered to the respondents (household heads). The structured questionnaire comprised of open and close ended questions.

2.3 Data analysis

The study used SPSS version 16 to run descriptive statistical analysis with regard to community awareness, reliability of iCHF services and relative advantage. The analysis revealed descriptive statistics including means, frequencies, percentages and standard deviations which presented in tables and figures.

2.4 Reliability test

Reliability test by using Cronbach's alpha was conducted to verify if there is internal consistency of the measurement instrument. The test revealed that there was internal consistency of measurement instrument with regard to perceived reliability and relative advantage of iCHF service since the Cronbach's alpha values for perceived reliability to iCHF quality services was 0.83. Basing on different studies, the acceptable values of alpha which justify internal reliability are ranging from 0.70 to 0.95

(Nunnally and Bernstein, 1994; Bland and Altman, 1997; DeVellis, 2003). Therefore, the test results of Cronbach alpha revealed in this study justified that there is internal consistency because items of measurement of the instrument generated the same construct or concept.

3. SAMPLING DESIGN

The study used simple random sampling to select four hamlets from seven total hamlets that form the Masereka village. The hamlets selected were Masereka, Yatanga, Ludende and Tanda. The survey population from four hamlets was 345 households. Nard (2003) and Newman (2007) recommend that in a quantitative research, if the population is smaller, the sampling ratio should be larger for the sample to be true representative. For population under 1,000, a minimum ratio of 30% is advisable to ensure representativeness of the study sample (Nard, 2003; Newman, 2007; Suskie, 1996). Basing on Nard (2003), Newman (2007) and Suskie (1996), this study used 30% of survey population to obtain the sample size of 104 households. The sample size was selected by using simple random sampling from four selected villages.

4. GEOGRAPHICAL AREA

The study was conducted in Masereka village, which is one of villages of Lushoto District. The village is located in the West Usambara Mountains. Administratively, the village is found in Mbaru ward within the Lushoto District Council. It comprises seven hamlets including Masereka, Yatanga, Ludende, Tanda, Kweromo, Chambogho, Ngomei and Kisiwani. The village has a total of 742 households with average household size of 5 and estimated population of 3710 people. Masereka village was chosen because it has very low iCHF household enrolment below 5%, and hence justified the need for research study. Information from this study may help to implement strategies which may help to increase enrolment of community members to iCHF scheme in Masereka village and Lushoto District as a whole.

5. RESULTS AND DISCUSSION

5.1 Demographic characteristics of respondents

The survey assessed demographic characteristics of respondents such as sex, marital status, education, household size and occupation as shown in Table 2. Results revealed that there was almost equal proportion of males (52%) and females (48%) who participated in the study. Most of respondents were married (48.1%) and those who were not yet married (39.4%). Few respondents constituted females who were widow and divorced. The average household size identified by the survey was 5 members whereby majority households



had 4 to 6 members (55.2%). Such average number of people per household justifies a need to enroll households to iCHF in order to save cash payment which cannot be available especially to poor people when a household member demand healthcare. Based on education levels, most of survey participants had primary education (64%). Other respondents completed secondary school (19%) and few participants attended

tertiary education (2%). Therefore, majority of respondents were literate except 15% who had never attended formal education. The type of occupation which employ many people is agriculture (53.2%) followed by small business (38.3%). Some respondents had no employment because they are either very old or housewives engaging in domestic works.

Table 2: Distribution of respondents basing on demographic characteristics

Demographic characteristics		Frequency	Percent
Sex :	Male	54	52
	Female	50	48
	Total	104	100
Marital status:	Married	50	48.1
	Single	41	39.4
	Divorce	6	5.8
	Widow	7	6.7
	Total	104	100
Household size:	1-3	25	26
	4-6	53	55.2
	7-10	18	18.8
	Total	97	100
Education:	Never attended school	14	15
	Primary education	60	64
	Secondary education	18	19
	Tertiary education	2	2
	Total	94	100

According to their age groups, many respondents (39.6%) were belonging in the age group of 40-49 years (Figure 1). The mean age was 46.6 years with a standard deviation of 10.63. In overall, most of respondents were belonging to the age below 60 years and above 20 years and hence, such community members are obliged to pay the cost of health services through iCHF or other mode of payment in government hospitals, health centres and dispensaries or private health facilities. Only 14.6% of respondents comprised of elderly people who are automatically offered cost exemptions from government health services including dispensaries, health centres and hospitals. In spite of

large proportion of community members who can enroll to iCHF based on their age groups, only 23.1% of respondents are iCHF members in Masereka village. These iCHF households belong to poor households which are supported by Tanzania Social Action Fund (TASAF) phase III. The households supported by TASAF III were sufficiently informed, highly sensitized and very much encouraged to enroll to iCHF as program strategy of enhancing social safety net to beneficiaries. Therefore, more effort is required to promote the enrollment of community members who are not TASAF beneficiaries to iCHF scheme in Masereka village.

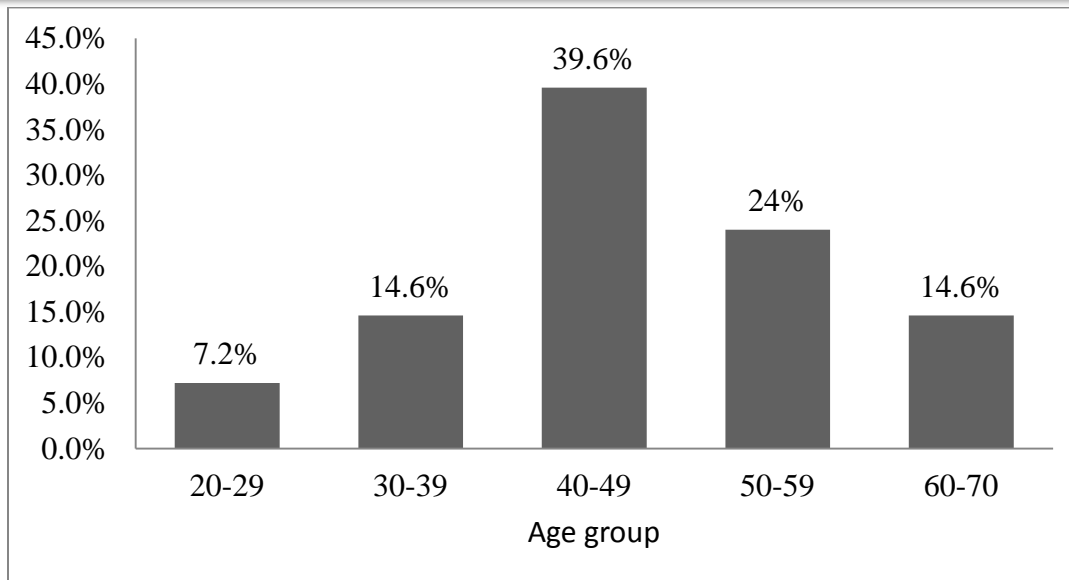


Figure 1: Age group distribution of respondents (n=104)

5.2 Awareness of community on improved community health fund

The community awareness regarding the criteria of enrolment to iCHF was assessed in order to

understand if clients in Masereka village are familiar with iCHF scheme. The findings regarding community awareness on iCHF services are presented in Table 3.

Table 3: Community awareness of improved community health fund

Item of measurement of community awareness	Yes	No
For a household to enroll to iCHF, it should comprise a maximum of 6 members.	(47)50.5%	(57)49.5%
The premium of iCHF for a household of 6 maximum members is Tanzania shilling 30,000 per year.	(71)75.5%	(33)24.5%
Hospitals, health centres and dispensaries owned by government within administrative region are iCHF accredited health facilities.	(42)44.7%	(62)55.3%
Overall awareness of the community on iCHF	(53)56.9%	(51)43.1%

Note: Numbers in brackets are frequencies

The study found that a half of people (50.5%) are aware about the criteria of 6 people as maximum number of members for each household which can be enrolled to iCHF (Table 3). More findings revealed that most of the respondents (75.5%) are aware enough about the premium of 30,000 Tanzania shillings required for a household of maximum of 6 household members to be enrolled to iCHF. Many people ask about the cost for household to enroll to iCHF when they attend to the village dispensary and visit to village office. However, few residents (44.7%) were aware of health facilities which are accredited to iCHF scheme. In fact, health facilities where iCHF members can obtain health services are hospitals, health centres and dispensaries owned by the government within a particular administrative region. Many other respondents were not familiar with health facilities which are accredited to iCHF. In this case, members of iCHF have direct access to healthcare services from

government dispensaries. They can move to health centre, district hospital and regional hospital when given referral from a particular lower health facility. Lack of awareness among community members about the coverage of iCHF can be a reason of low iCHF enrolment in Masereka village. The overall community awareness based on average response (56.9%) revealed that residents are somewhat familiar with improved community health fund (iCHF) in Masereka village. Therefore, lack of awareness among the residents is one of the reasons which contributed to low enrollment of households to iCHF in Masereka village.

6.3 Perceived reliability of service quality provided by improved community health fund scheme

The study assessed perceived reliability of service quality provided by government health facilities accredited to iCHF scheme in Masereka village. The study revealed the findings regarding the reliability of



dispensaries, health centres and hospitals to perform the promised services to clients dependably and accurately. The perceived reliability of quality services in health facilities accredited to iCHF scheme was assessed by measurement items which include timeliness and accuracy of health examination and treatment services; whether the patient's examination schedule is performed appropriately; if the health service procedure

is not complicated; and whether clients find easier to contact the medical staff. The items of measurement of perceived reliability of service quality were measured by using a 5-point likert scale comprised of the following indicators; 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, and strongly agree.

Table 4: Residents' perception on reliability of improved community health fund (iCHF)

Reliability item of measurement	Number of respondent	Mean score	SD
A member of iCHF has access to fast treatment services when attend health care facility.	104	3.5	1.165
A member of iCHF has access to appropriate medications when attend health care facility.	103	3.3	1.211
A member of iCHF has access to accurate medical examination services.	104	3.4	1.327
A member of iCHF has access to accurate treatment.	101	3.1	1.336
A member of iCHF has access to easier contact with health worker or assigned medical officer in accredited health facilities.	104	3.6	1.148
Overall community perceived access to iCHF services		3.4	1.237

Note: SD=standard deviation

Before rating, the minimum and maximum rating score was 1 for strongly disagree and 5 for strongly agree. The mean score of the rating scale was supposed to be 2.5 to represent the choice of neither agree nor disagree. The findings are presented in Table 4. Majority of respondents perceived that members of iCHF are treated in time when attend accredited healthcare facilities (Mean score=3.5, SD=1,066). The findings demonstrated that community members satisfy with reliability of service quality from accredited health facilities as they provide treatment. In regard to access to accurate medication provided to iCHF members, most of respondents perceived that iCHF members are provided medicines which are appropriate to their sickness (Mean score=3.3, SD=1.211). They are

provided appropriate medications when attend healthcare facilities including their village dispensary and neighbouring dispensaries located in adjacent villages.

More findings revealed that majority of respondents perceived agreed that iCHF member has access to accurate health examination services (Mean score=3.4, SD=1.327) and promised treatment services (Mean=3.1, SD=1.336). According to findings, the community agreed with iCHF services since members have access to health examination services provided by health workers in accredited health facilities where they attend for healthcare services. Also, respondents perceive that iCHF members have access to treatment which they deserve from accredited health facilities.

Table 6: Residents' perception on relative advantage of improved community health fund (iCHF)

Relative advantage item of measurement	Number of respondents	Mean score	SD
When you are a member of iCHF you minimize the cost of health services in comparison to when you rely on cash payment.	104	3.5	1.066
Membership premium for iCHF is fair in with regard to the healthcare services provided to clients.	101	3.8	1.104
Members of iCHF are cared by medical staff like non-iCHF members.	104	3.2	1.209
Overall community perceived relative advantage of iCHF services		3.5	1.126

Note: SD=standard deviation

In spite the respondents have agreed that reliability of service quality offered in iCHF accredited health facilities, still there are many households which have not yet enrolled to iCHF scheme in Masereka village. The study found that relying on traditional

medicine was the main reason for most residents not to enroll to iCHF. The findings indicated that about a half of non-iCHF members (59.2%) who participated in the survey had not enrolled to iCHF because they believe traditional medicine (Figure 2). The more rely on



traditional medicine including medicinal plants for prevention and treatment of diseases roots than conventional medicine. This attitude of relying on alternative medicines such as extracts of medicinal plants which are not well researched, tested and lack proper dosage creates health risks to the community members.

The other reason given by some respondents (26.3%) for not being members of iCHF was high cost of premium which makes them not able to afford

paying the amount of Tanzania shilling 30,000 per household of maximum 6 members per year (Figure 2). The community perceived the premium to be high due to the fact that they do not afford getting money to pay for premium offered by iCHF because they have low income. They depend on smallholder agriculture and petty business which cannot generate sufficient income for the households. Therefore, poverty of households constrains access to quality health services and makes community more susceptible to health related risks.

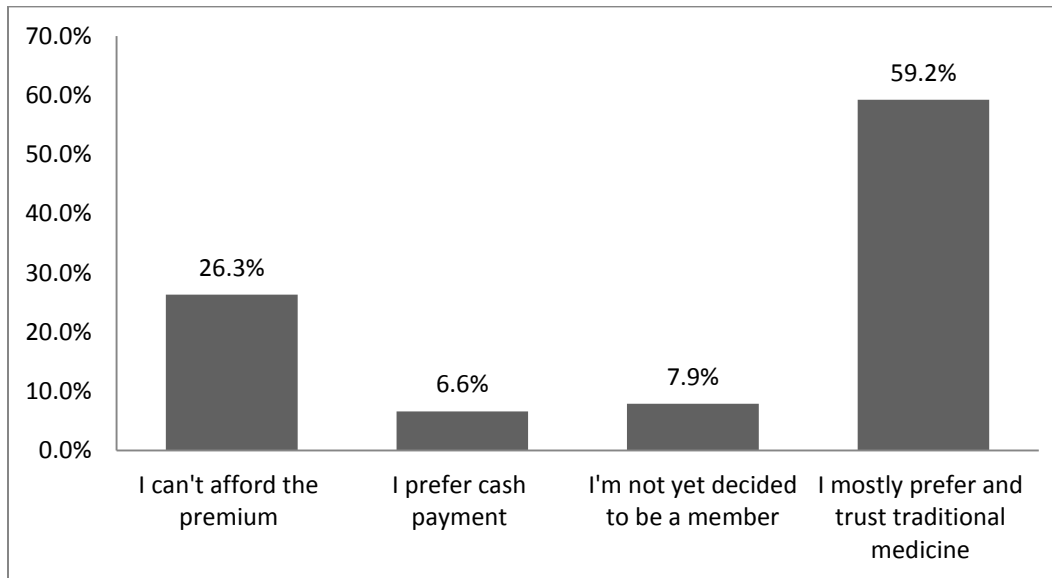


Figure 2: Responses regarding the reasons of not enrolled to iCHF (n=80)

Other findings revealed that some few respondents (6.6%) prefer cash payment in health services when they attend to health facilities while 7.9% of survey participants said that they have not yet decided to be iCHF members (Figure 2). Hence, community members who are not ready to make decision of enrollment to iCHF and those depending on cash payment might be lacking clear information regarding iCHF operation and advantages of packages offered.

7. SUGGESTIONS

The study provides the following suggestions to iCHF management and health sector stakeholders:

- i. The iCHF management, Lushoto district council and partner organizations should implement interventions which can create more awareness of iCHF operations, its service coverage and relative advantage of the fund so as to motivate clients to enroll to iCHF in Masereka village.
- ii. The governmental of Tanzania through iCHF management and health sector stakeholders including Tanzania Social Action Fund (TASAF) and non-governmental organizations should

increase their support of paying for iCHF premium to households which are extremely poor. Supporting the poor to pay for iCHF premium will escape them from risk of health related problems including communicable and non-communicable diseases.

- iii. Community members particularly in Masereka village should be provided with health education so that they can understand about the importance of using conventional medicine as the most preference healthcare in Tanzania so that they can be motivated to enroll to iCHF scheme.

8. CONCLUSION

The government of Tanzania has recently made a reform to the Community Health Fund (CHF) scheme by addressing operational and financial management challenges which existed. Now, the Improved Community Health Fund (iCHF) scheme is implemented especially in rural areas. The CHF has existed since 2002 while providing access to health services to community members particularly those who are working in informal sectors especially in rural areas



including farmers and market vendors. In Lushoto District, Improved Community Health Fund began its operation in 2019 while providing healthcare services to all 134 villages including the Masereka village. However since it was started, still there is low enrollment of households to iCHF scheme despite the effort which have been done by the government through iCHF management and coordination team.

The fact is that many residents in the village are not aware of the criteria required for enrolment of new members to iCHF. Also, they are not familiar with health facilities accredited to provide healthcare services. Through iCHF scheme, members of improved community health fund of not more than six have access to government health facilities including dispensaries, health centres, district hospitals and regional hospitals within their regions. The referral from primary health facility is given to iCHF member to get access to healthcare services in higher level health facilities. However, most of residents of Masereka village are familiar with a premium of thirty thousand per year for a household of maximum six members. The health facilities providing healthcare services through iCHF were perceived by residents of Masereka village as being offering reliable quality of services. They provide fast and accurate examination and treatment services, perform appropriate health examinations as promised, their service procedures are less complicated and easy to contact the medical staff. However, residents who are not members of iCHF scheme prefer using traditional medicine from plant and animal extracts in steady of using conventional medicine. Some residents are not able to afford the premium of iCHF because of being extremely poor. Therefore, more strategies are required in raising community awareness while keeping on improving the managerial and operational performance of iCHF scheme in Lushoto District particularly for Masereka village so as to enhance enrolment members.

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THE IMPORTANCE OF TIME MANAGEMENT FOR THE SUCCESSFUL OF TEENAGERS' IN EDUCATION: AN OVERVIEW

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ABSTRACT

This study examined the dynamic relationship between the time management skills and the that impact on teenagers' academic achievement. Time management is the key valuable factor and it may actually affect individual's overall performance and achievements. However, all of these are related by how individuals manage their time to suit their daily living or to make it flow steadily with their routines. Encouraging settings and environment will surely promote positive outcomes to teenager, besides having good lectures. Nevertheless, good time management is vital for teenagers to shine, however, some of the teens do not have good time management skills that have negatively affected their lives and their academics. The usage of time by teenagers in higher education institutions is related to their daily routines and activities. Their time management can also affect stress levels as they need to cope with their tasks and their personal achievements. In this regard, the hypothesis was analysed that how effectively, they are managing their time for achieving their academic standards. Meanwhile, there were significant factor in behaviour and attitude impact in time management into positively related to academic achievement of teenager although the relationship is weak. Time planning is the most significant correlated predictor.

KEYWORDS : *Time Management, Strategy, Teenager, Successful, Attitude, Education*

INTRODUCTION

Time is a priceless resource and continues to pass by without coming back therefore, the secret to achieve success in life is effectively managing this resource that everyone possesses equally and paying sufficient emphasis to plan. Time management is an important tool and capabilities that brought to solve any problem to achieve any success or to have the maximum benefits after putting in minimum inputs. Among modern era, time is very precious and its proper management of time is the key to success. The

high performance required by competitive conditions forces teenagers to use time effectively and stipulates the search to control time. The challenging environment explores nowadays that encourages people to plan and manage time effectively as early as to start from their elementary education. Surprisingly, the term "time management" became familiar in the 1950's and 1960's as referring to a tool to help people make better use of available time. The strategy defined time management as self-management with an explicit focus on time in



deciding what to do, on how much time to allocate to activities, on how activities can be done more efficiently and when the time is right for precise activities. The analyst defined that time management as “behaviours” that aim to achieve an effective use of time while performing certain goal-directed activities. Potentially they were three surfaces of time management behaviours which are short range planning, long range planning and time attitudes. Short-range planning strategy performs to encompass a variety of items that require planning in the short run, either within the day or within the week.

Time attitudes are more attitudinal in nature. Long range planning competence is to handle everyday tasks over a longer time perspective by keeping follow of significant dates and setting objectives by putting adjournment. To each one these behaviours of time management emerge to have obvious and straightforward meaning for effective performance. Thus, academic performance is measures ability and achievement level of a learner in academic, subject or particular skills. On the other hand, mostly they often complaint doesn't have enough time to complete all the tasks assigned to them even trying to read all the books and chapters assigned, meet paper deadlines, and participate in extracurricular activities. Hence, they become overwhelmed with feelings that there is not enough time to complete all their work adequately.

Time is a priceless resource and continues to pass by without coming back. The secret to achieve success in life is effectively managing this resource that everyone possesses equally and paying sufficient emphasis to plan [1]. The high performance required by competitive conditions forces organizations and directors to use time effectively and stipulates the search to control time [2]. The rival environment nowadays encourages people to plan and manage time effectively as early as to start from their elementary education.

The term “time management” became familiar in the 1950's and 1960's as referring to a tool to help managers make better use of available time. The concept of time management comes from Frederick Winslow Taylor for early analysis of motion and time studies of workers with purpose to reduce unproductive work tasks and time wasting. [3] defined time management as self-management with an explicit focus on time in deciding what to do; on how much time to allocate to activities; on how activities can be done more efficiently and on when the time is right for particular activities [3],[4] defined time management as “behaviours” that aim to achieve an effective use of time while performing certain goal-directed activities. There are basically three surfaces of time management behaviours which are short range planning, long range planning and time attitudes [5]. Short-range planning appears to

encompass a variety of items that require planning in the short run, either within the day or within the week.

The aim of this study is to determine the relationship between the time management and academic achievement of the teenagers. The analysis identified an important element result as showed in three main factors associated with time management, which can be classified as time planning, time attitudes and time wasting. Time management is a skill that everyone should not only know, but also apply perhaps most teenagers complain about running out of time when asked to do a certain task, perhaps they develop frustrated because they are not able to make it before the deadline. Time management is extremely important, especially when it comes to the higher level of academy because it will boost their grades and enhance their productivity (Laurie & Hellsten, 2002). However, most of the time they face problems like task aversion and uncertainty, so they start to procrastinate because they lack organizational skills. As a result, they will not be able to organize duties according to their priorities, so they get distracted easily, ending up delay. As we can see, time management is quite essential to anyone and it is one of the keys to higher academic achieving (Kelly, 2004).

An important element among these strategies is the introduction of academic studies focusing on the relation to time management that review academic achievements. The related showed that the time management attitude and skill levels of teenagers and the effects of these skills on their academic achievement. The research revealed that a majority teenager possesses moderate level time management skills and only a significantly small portion has high level time management skills (Yilmaz, Yoncalik & Bektaş, 2006). This also emphasizes teenagers should start to acquire time management senses on their own reading materials on the issue or via the framework of psychological counselling and guidance studies applied in academic and adopt effective time management attitudes techniques to determine how and where they spend their time (Lisa & Robert, 2008). This includes the nurturing of time management competencies practices have been proven to be some of the top indicators toward achieving a high level of academic success and performance. Various studies showed that time management practices serve for many purposes, not only for challenging the performance of the teenagers, but the practices show the way not only to a top level of academic performance, but to good physical condition and lower levels of stress. The important purpose of the present study was educational competency, using time managing techniques, test pressure, and test proficiency (Faisal, Miqdadi, Abdulla & Mohammad, 2014).



Dimensions of Time Management

The effectual utilizing time managing requires procedures to ensure the quality of planning behaviours factor in teenager lifespan. One can make use of time effectively and competently by keeping time logs, setting immediate longstanding goals, prioritizing responsibilities, constructing to-do-lists, arrangement and organize with their study place environment (Sabelis, 2001). Time saving techniques and behaviours can be categorized into numerous groups and be liable to contribute to a number of fundamental qualities in general. There are three surfaces of time management behaviours such as short-range planning, long-range planning and time attitudes (Laurie & Hellsten, 2002). However, short-range planning is the capability to set out and systematize responsibilities in the short period of time whereby long-range planning competence is to handle everyday jobs over a longer time perspective by keeping follow of significant dates and setting objectives by putting adjournment (Alay & Koçak, 2003) and finally, time management in attitudes demands a key shift in emphasis concentrate on results.

Long Range Planning

Long-range planning means to have long-range objectives and having disciplined routines for self-organization and it is comparable to long range planning. Meaning to acquire a summary of the everyday jobs that necessitate to be executed, time limits and priorities which increase the perception of having control over time so, this may enable planning to deal with all activities (Kelly, 2004). Hence, directly have less perception of control over time because it may be tackling to be familiar with how much effort requires to be completed within hours, days or weeks, it may even be the immediate measurable effect of planning. This contributes the impression to indicate that time management practices accomplish to have an influence on educational achievement, but that's not all they affect (Brigitte et al., 2005). The competence found that the teenagers had advanced overall academic achievements who accounted using goal-oriented time management practices.

i. Short Range Planning

This short-range planning explained time management activities surrounded by daily or weekly time structure and cover the activities such as setting objectives at the commencement of the day, planning, focus on daily behaviours and creation work contents (Yilmaz et al., 2006). Basically, short-range planning behaviour, forecasting of time in the short run, surrounded by the time enclose of a week or less, established a constructive relationship to grade point average. It is a type of planning interface

with accomplishment that associated with dealing performance as well (Noftle et al., 2007). Likewise, most of the studies determined control for teenager time managing and determining the total time committed to the course whereby academic achievement means the educational objective that is accomplished by them over a short period (Lisa & Robert, 2008). In this research found it has been demonstrated that there exists a positive significant relation between their grade point averages, time attitudes and short-range planning.

ii. Time Attitude

Time attitude emphasis key concentration on results, not on being busy. There are a lot of cases with teenagers who waste their lives in discoloured by placing their self into incorrect responsibilities or weakening to focus their activity successfully in established time management that directly affect the collective of academic achievements (Mercanlioglu, 2010). The awareness view on how their time requires to be used up or planning, including utilizing short and long period goals and time attitudes or accomplished both planning encouragement. Attitudes may initiate that they had much more time to finish their everyday jobs because they experience more in control of how their time was exhausted, therefore, aware when they had to state no to activities (Kaushar, 2013). About time management practice that connected with individual's awareness, attitudes and is comparable the perception of having control over time. Therefore, time attitudes comprise the insight of the individual in control of time, the observation that the person is efficiently managing their time and awareness that the teenagers making constructive utilization of time (Karim et al., 2015).

Key Planning in Time Management Strategies

Time management develops important intellectual and decision-making qualities in life skill, but it is something that is rarely taught within the academy curriculum. Occasionally, the challenge teenager facing here is understanding even the basic organizing and prioritizing time could help them become so much better equipped for adult life. Obviously, many teenagers struggle with time management, but the good news is that with a bit of commitment and discipline, the skill of time management can be learned, developed and utilised quite easily. While teenager involves think it's fine to wait until the last possible, finally to complete their responsibilities or project becoming lifelong procrastinators that create a big problem later in life. And these might be considered to be aspects about waiting until the last possible minute to get things that could cause problems ranging from high-stress levels to relationship trouble. In a general view, it is important to teach teenagers how to behave



responsibly, meaning is managing their time wisely without requiring constant reminders or assistance to get work done.

- a. **Time Tracking Worksheet** - This worksheet helps track activities and it features a column for the estimated duration of each task, and another column for recording the actual time that spent on the activity.
- b. **Time Management Wheel** - This editable and printable time management wheel allows colour code the activities for the day. It features one-hour intervals on its time block and the creator suggests assigning a particular colour to a specific task and then placing a piece of sticker in the corresponding time when doing that activity.
- c. **Time Management Log** - It is a learned skill, and the right tools can help accomplish more within the allocated time for specific activities such tool called Eisenhower Matrix. It is proven to help manage time more effectively, how the matrix can be used in identifying a task's level of priority by a letter coding helps classify an activity level of importance: (important, somewhat important, not important and urgent)
- d. **Time Log Sheet** - This column time tracker has sufficient space to record activities and allows to track the amount of time spend on every activity list down. As fill in this form, then teenagers able to know when to start and when to finish an activity, as well as the total time spent on it. The template also prompts to identify if an activity is something intended to do or if it was done at the spur of the moment. The advantage of having a tracker like this is that, over a certain period, this will be able to see a pattern of how the use of time, perhaps something enriches or time spend a huge chunk of the day on time sink activities like excessive social media use.

It may take a bit of time and a bit of experimentation to find exactly what suits and preferred method of working the time management to ensure actual strategy adoption and don't just try and wing it all the time. An effective time management strategy needs to be:

- i. easy to plan
- ii. easy to implement
- iii. easy to maintain better decision-making skills,
- iv. better performance
- v. increased responsibility and independence
- vi. more opportunities to relax and unwind
- vii. more time for family and friends
- viii. reduced anxiety when projects are due or test dates are approaching

Design of Hypothesis Structure.

The objective of this examine drew several prior to the hypothesis that measure various time-related constructs information, Bond and Feather (1988), on the psychological effects of teenagers to assess which individuals distinguish their use of time to be structured and purposive" (Feather & Bond, 1983, p. 321).

a) Time Planning.

- Do you have a set of goals for each week ready at the beginning of the week?
- Do you spend time each day planning?
- Do you make a list of the things that have to do each day?
- Do you make the schedule of activities that have to do on schooldays/workdays?
- Do you have a strong idea of what you want to accomplish during the next week?
- Do you have set goals for the entire quarter/semester?
- Do you clip of Xerox articles which, although not presently important to you, may be in the future? do you think can usually accomplish all goals for a given week?

b) Time Attitudes.

- When you have various responsibility to do, do you think it is best to do a little bit of work on each one?
- Do you establish deadlines for completing work?
- Do you try to schedule best hours for most demanding work?
- Do you keep important dates such as exam dates, research paper due dates, and others on a single calendar?
- Do you set and honour priorities?
- Do you confident that there is room for improvement in the way manage your time?
- Are you able to make minor choice quickly?
- Do you usually keep desk clear of everything other than what are currently working on?

c) Time Wasting.

- Respectively in a week do you do things as they naturally occur, without an effort to make a plan in advance and compulsively?
- How frequently you find doing things which interfere with academic work is simply because hate to say "no" to people?
- Do you find yourself waiting a lot without anything to do?
- Do you continue unprofitable routines or activities?



Analyse and interpret data information.

It is encouraged to know that teenagers can perform well, still have some way to go before they can be said to be truly innovative. Being able to creatively solve problems that have already been identified, one thing being innovative by identifying new problems to solve through seeing issues from multiple perspectives is quite another. This research ability to identify problems and define them in new ways is a fundamental skill in design their behaviour and attitude thinking. Therefore, design thinking in time management may just be the key to unlocking the innovative potential. So, to perfect and extend the design capabilities by constantly challenging and pushing at limitations. This has not always worked out well, but behaviour and attitude commitment to improve may just be what is required to curb exercise teenagers reframing in time design instincts.

Key Strategies in Implementation.

Time management for teenagers and everyone else is about being purposeful with day. It's about taking control of what time and optimizing it for productivity, focus, and above all, balance. To really optimize time and get ahead on projects, need to be more tactical to master the time management:

a) Use a daily schedule template to plan the day

Classes, seminars, and workshops might take up the majority of day, but how schedule their own time can make all the difference and creating a to-do list, it's more important to master schedule. To-do list only tells what like to do. A schedule tells when going to do it and having a daily schedule template in place puts in control will help stay organized, focused on what matters most, and even help overcome procrastination.

b) Understand how current spending time and where the losing part

Basically, schedule will give an ideal version of daily day schedule, but in order to build better time management habits, the major things need to know *how you're actually spending your time*. Without a clear understanding of where time goes each day, it's impossible to build better time management strategies and stay focused. When it comes to tracking time, below have two options will help to close some of gaps:

c) Set proper goals to measure the progress

Spend a day or two writing a "time log" manually tracking how time spend each moment of the day. Practice with free tool like "RescueTime" automatic time-tracking, distraction blocking, and

more exactly where time goes, get powerful reports and tools to improve every aspect of day. "RescueTime", provide a clear breakdown of what apps, websites, and tools that organized each day by category and productivity score.

Goals are a great way to get motivated to do assignment work. Unfortunately, the way most sets goals that completely wrong. The issue being raised that goals is just the end result. They don't tell anything about how we're going to achieve them rather than starting at the goal and working backward, focus on what needs to get done to hit and *surpass* that goal. The point here is maintaining high visibility, focus on consistent progress and building better habits. From this perspective, daily progress will help motivate to do more and looked into all the things that can boost mood and motivation, "the single most important is making progress on meaningful work."

d) Break large projects into small and actionable tasks

Part of proper goal setting is being able to break large goals down into daily tasks. Not only does this keep teen focused, but it can even help stop procrastinating. Although easy to procrastinate when a project *feels* like such a huge task. However, taking that first step is usually all need to build momentum. The concept of time management expert is the best thing can start resolve from smallest that most doable follow next step is on a big project and then list out with a deadline for each project into a few steps. Each step is doable and can be scheduled into the daily organize timetable rather than feeling overwhelmed in end goal. Another example using "RescueTime", set daily goals to spend 3 hours writing, meaning focus on making progress.

e) Take a break at the right time

One of the best ways to maintain productivity over time is to take more breaks. Subsequently, doing a lot of tasks without a break, it is harder to stay focused and motivated. Allow some downtime between tasks to refresh yourself. In this scenario, consider grabbing a brief nap, going for a short walk, or meditating. According to psychological wellbeing our minds naturally crave breaks after every 90 minutes of intense work. Even if don't keep a timer, automatically the body will tell when need a break by becoming hungry, sleepy, fidgeting, or losing focus. When starting to feel this way, it's time to take a break.



f) **Optimize study time for only do one thing at a time**

It's tempting to think that can do multitask when schedule is crammed, but the more teenager tries to do at once, the longer *everything* takes. Instead, studies have found that deeply focusing on a single task at a time can be up to 100% more productive. While, reflecting to "single-tasking" like this isn't easy, if have a hard time focusing on just one thing, by removing distractions, including phone, start small and set a timer even five minutes of distraction free work time is beneficial and finally take a break in between each session.

g) **Build better habits and routines for long term success**

The best time management strategy for teens and everyone else is simply to develop habits and routines that promote the kind of actions that *want* to do more of. By practicing good housekeeping methodology such as 5S will keep organized and will help save precious time. 5S, a Japanese methodology consists of 5 steps in order, starting each with "S", "Seiri", "Seiton", "Seiso", "Seiketsu" and "Shitsuke", which means, set everything in order, identify and tag everything, keep everything clean, practice the above each day and finally standardize the above as daily routine in a disciplined manner. Keeping everything organized and clean will save time to access resources, whenever need those urgently. Hence won't waste time searching the required stuff.

h) **Eat the Frog Tools and Technique**

Eat the frog is a method designed to help tackle the biggest, most difficult task first thing (and no consumption of amphibians required). This technique is a method that aims to overcome procrastination, a habit that most are guilty of and wish to conquer. How this works is that by prioritize "frog" at the top of the list. The idea behind this technique is that once have most dreaded task out of the way, it will get the ball running and set the flow for the rest of the day. By producing a matrix of need versus want, this can categorize tasks into four groups:

1. Things you **have to do**, and **don't want** to do
2. Things you **have to do**, and **want to do**
3. Things you **don't have to do**, and **want to do**
4. Things you **don't have to do**, and **don't want to do**

Basically, this technique aims to help overcome biggest task complete first and imagine the sense of relief and accomplishment thus, it will make the rest of the tasks seem effortless.

i) **Getting Things Done**

There is a strong practice in Getting Things Done, or GTD, is a framework for organizing and tracking tasks created by David Allen. The method propels to add context and structure to tasks so that has a higher chance of actually completing them. The idea behind GTD is that because "your mind is for having ideas and not holding them" the method provides a way to turn ideas into actions, and gives a clear list of what have to do. GTD involves following 5 steps workflow:

- i. Capture: write down all the ideas on a list (the 'inbox').
- ii. Clarify: process the ideas.
- iii. Organize: determine which ideas can take action on.
- iv. Reflect: assess the list on a weekly basis so that it doesn't pile up!
- v. Engage: once the ideas have been captured and processed, and start knocking things off the list

If tasks take more than one step to complete, then it should be considered a project. If the list has more than one related task, group them together and create a project. GTD provides a system to tick off the tasks of to-do list. The concept is designed so that once teenager develops a system that can rely on, which will then free up brain-power for doing more productive things will get done.

Benefits of Time Management

There are piles of benefits, why time management is very important that increased a sense of wellbeing, prioritizing time and huge increases in productivity. By managing the time or even understanding what spends time on and equipped to make changes to be more effective at whatever it is aim to achieve. The point is how can improve self-productivity to manage and focus the time management in a proper control of time comes less stress that helps become more clearer about own goals. However, some of them has negatively affected their life and their academics that related daily routines and activities. A teenager can also affect stress level as they need to cope with their tasks and their personal achievements. The road to success in social life passes through effective and efficient which is only possible via time management. Today encourages teenager from as early as their elementary education to plan and manage time effectively is necessity of time planning (Alay & Koçak, 2003). How crucial time management is? Knowing how to manage your time well transferable skill that will not only get through academy levels, but it's something can benefit throughout life to maintain a healthy lifestyle.



a. **Become more Organised**

The important part of time management is planning, which helps to stay on top of all assignments, exams, and study times. Also, schedule the time day by day and right down to the hour by hour for a more detailed schedule. This gives an overview of everything need to do and how will accomplish it. This will give self-confident peace of mind and will help to enjoy studying, and habitual benefit in the studies.

b. **Build a good Reputation**

When have good time management skills, they able to honour meet deadlines. When do these things, it will be known for being reliable. Showing that by having a good time management skill helps to build a good reputation and shows that can be trusted with responsibility.

c. **Become more Focused**

Time management can provide relief from stress resulting from procrastination or falling behind with academic work. Good time management skills can help become focused, can help become an effective learner, and can help avoid constantly feeling as though have too little time. Proper time management assists will tackle the tasks in a timely manner, and this will facilitate people focus better on the task without feeling stressed. Managing your time properly also allows to concentrate on one task at a time, instead of trying to get everything done at once. When focused, will increase the delivery of quality work, able to set goals, plan for how will reach them, and capable to achieve all the goals effectively. Focus is an important trait that can use in future, too.

d. **Improved decision-making ability**

Whether relying on a time-chunking technique or discover the power of list-making, side of benefit of good time management skills is the ability to make better decisions. When feel pressed for time and have to make a decision, but more likely to jump to conclusions without fully considering every option. Through effective time management, eliminate the pressure that comes from feeling is not enough time. Perhaps will start to feel calmer, relief, and in control when the time comes to examine options and make a decision, instead of rushing through the process and take an opportune time to carefully consider each option.

e. **Reduce Stress**

When there is control of time, it's easy to end up feeling rushed and overwhelmed and when that happens, it can be hard to figure out how long it's going to take to complete a task. Think of a time when to miss a deadline and were frantically trying to finish the project. Once learn how to manage the

time, therefore no longer subject to that level of stress. Besides, it is better to have a clearer picture of the demands on the time. This may able to estimate how long a given task will take to complete, and know meet the deadline.

f. **Self-discipline is valuable**

When practice good time management, this may leave no room for procrastination. The better get at it, the more self-discipline may learn. This is a valuable skill that will begin to impact other areas of life where a lack of discipline has kept from achieving a goal.

g. **Effective Time Management boosts an individual's morale and makes confident**

As a result of Time Management, individual tasks accomplish within the stipulated time frame, making them popular in their group as well as amongst their peers. People who recognize the value of time are the ones who manage to stand apart from the crowd. Individuals who finish their task on time are looked up to by others and are always the centre of attention everywhere.

Things to Remember:

- Control time instead of it controlling you.
- Postponement usually takes more energy in the long run than just doing it.
- Recognize the limitations, there are only 24 hours in a day and we cannot do everything, so pick what matters most and spend time doing it.
- Remember life goals, they can provide motivation and help prioritize.
- Reward for accomplishments.
- Pay continual attention to balance of work.
-

The Importance of Guidance & Counselling in Teenager's Life

Guidance and counselling are important for teenager as a huge role in bringing out the best in their lifestyle improvement. Basically, therapist will need guidance to polish their personality and given advice on how to manage and deal with emotional conflict and personal problems. In this view a proper counselling will help incorporate valuable lessons in their daily life. Before starting any component of the task, set clear expectations for behaviour. These may seem like standard expectations, but clearly stating them before can help eliminate small missteps for who need reminders. Counselling is designed to facilitate teenager's achievement, improve behaviour, attendance, increase their skills and help them develop socially. Helping teenagers figure out how to manage their time can be tough, and there's no



one-size-fits-all solution to the problem. No matter where they are in the education process and understanding time management style based on their personality type is key to succeed long-term. The person who doesn't learn time management skills are at risk of becoming lifelong procrastinators. In that case waiting until the last possible minute to get things could cause problems ranging from high-stress levels to relationship trouble. It's important to teach teenagers how to behave responsibly. That means managing their time wisely without requiring constant reminders or assistance getting work done. The perks of good time management include:

- Better decision-making skills
- Better performance in academics
- Increased responsibility and independence
- More opportunities to relax and unwind
- More time for family and friends
- Reduced anxiety when projects are due or test dates are approaching

a) Teaching Time Management Skills

Basically, teenagers have fairly structured schedules, as a result, many of them don't learn how to manage their time wisely when they have some downtime. While it may look good transcripts to say they're the captain of the soccer team and head of the council, for some teens, a busy schedule can be problematic. The lack of free time may eventually take a serious toll on their physical and emotional health Mahoney JL, Vest AE. 2012. It's important to find just the right balance for teenagers, but it's also important to make sure they aren't burning themselves out as they run around from one activity to the next. Well to be too idle, a little downtime is really good for them. It also highlights the challenges and learning experiences start by helping teenager understand their own unique rhythms and be specific able to be more productive than others. Helping teenagers critically analyse and reflect on the main learning points of their own productive periods is more effective than parents deciding when teenagers should do what. The interest part is letting them be in charge the key success for time management.

b) Irrational Belief about Time Management

Therapist can help teenagers develop an appropriate framework for boundaries. Handling time to accomplish goals can be challenging for even highly successful people. It is important to consider how teenagers work best, and even to seek assistance from others, struggling to meet deadlines and balance work, college, and life demands. Boundary work honours self-esteem and self-worth thus, learning these useful skills during the teenage years can position for ongoing success and happiness in the future. Therapist helps teenagers recognize the root causes that trigger negative beliefs. After gaining

more awareness, they can also learn new ways of thinking and behaving. Over time, therapist can teach teenagers how to accept and even embrace themselves.

c) Beating procrastination

In terms of procrastination, or putting off tasks which need to be done, is a major challenge of time management that can have a major impact on levels of stress and anxiety. However, relatively a simple time-wasting or laziness, procrastination is a genuine psychological response to workload demands, and is particularly common at university. The challenges here is expand the irrational delay that has negative consequences for the procrastinating individual, procrastination is a habitual form of postponing action to a later date. Procrastination happens at different times for different people, and depends on struggle situation to convert the intentions into actions. Therapist will help to identify the of quality time management is perhaps the single most important and challenging skill to develop as a student. In an environment in which nobody will hold their hand, or tell precisely what should be doing and when, the art of managing and meeting personal deadlines must be mastered sooner rather than later.

d) Talk About How to Manage Stress

The influencing can be so overwhelming, high levels of stress are not helpful when it comes to managing time effectively. There are two basic kinds of stress such as internal and external. Basically, in this case the internal stress is self-imposed ("I need to straight As!"). Whereby, challenges in external stress of the result of deadlines and other pressures ("I have a math test tomorrow!"). Despite through self-orientation structures if teenager is feeling too much external stress, see if he can remedy the situation by starting projects and other assignments earlier, asking lecturers for extensions, or dropping extracurricular activities. If teenager is the type to put a lot of internal pressure on himself, then look for ways to help him keep a healthy perspective on what's important and what's not.



e) **Compartmentalize work time**

Research shows that teenagers who actively strategize about how they are going to study actually improve their performance on tests. Therapist will encourage teens to use a written planner. They should write out everything they need to do for college, sports, extracurricular activities, or family obligations all in one place. Besides learning framework using the Pomodoro method that's working for 25 minutes followed by a five-minute rest break (to get up, walk around, use the bathroom) can make work seem less daunting. Also, having teens do their work outside of their bedrooms provides a natural boundary between work and rest.

f) **Structure of self-regulation**

The assessments of learning are relevant and robust in these changing times to enhance learning teenagers care a great deal about socialization, and the fear of missing out (FOMO) can make it difficult to self-regulate or prioritize sleep. Screen management apps like Moment and Forrest can promote self-awareness and mono-tasking by creating natural boundaries. Thus, not texting after a certain time at night, for instance, and requiring phones to be on chargers outside the bedroom. The endorsement in self-regulation and, will teenager think about what strategies make them more productive. Whereby, turning off their phone and putting it in the other room, disabling messaging on their tablet, or creating dual screens work and social on their computer that allow the chance to navigate and identify potential solutions.

Benefits of Guidance and Counselling

There is a simple secret how to get teenagers excited to become more organized and better manage their time. The therapist encourages them to identify personal goals and ask them to dream about how they would spend all the extra hours they will gain by being more organized. Hence, they become naturally more motivated. However, time management all boils down to the way use your time each day. More or less people seem to have a natural knack for knowing how doing this, but the truth is, it's something that everyone is able to do. Basically, either let the day control you or you can make a plan to control the day and do this by managing the time that are given. Meaning high achievers seem to get so much done when there are other people who seem to accomplish nothing in a day given the same amount of time. Following are some of the benefits that teenagers get from effective guidance & counselling:

- i. Teenagers are given proper guidance on how to deal with psychological problems which can badly impact their studies. Through these sessions, their able to develop certain

problem-solving skills which to an extent help them deal with particular issues surrounding their lives.

- ii. Teenagers are advised on how to cope with different situations they tend to face in their academic life. Basic advice will be enhancing them perspective on how should they behave in certain scenarios.
- iii. It helps to shape their behaviour and also instil enough discipline in them. Proper guidance helps them achieve their goals, well guided & counselled in a way they know what to do and how to do things in the best possible way.
- iv. It allows teenagers to talk to teachers about various experiences that make them uncomfortable. Thus, they can openly share problems that they cannot share with their parents.
- v. Talks related to alcohol, drugs, personal feelings or any kind of abuse, can be openly discussed. Guidance and counselling also make teenager better human beings since they are counselled on how to act and behave in a particular situation
- vi. It enables teenagers undergoing certain difficulties in their lives, to ask questions and clarify them through guiding and counselling. Finally, counselling helps them ask without any fear since the person in charge is willing to help.

CONCLUSION

This study influences the relationship between the time management that impact academic achievement of the teenagers. First, knowledge of the factors influencing poor academic achievement that factor time management concept allows one to predict those who will, and those who will not, do well in an academic program. Second, an understanding of time management relations among ability, motivation, emotional, behaviour and attitudes in the prediction of distinct components of academic performance can be used to direct towards teenager disciplines in which they are most likely to succeed. Finally, knowledge of the factors influencing academic achievement enables to develop fair academically, those that can compensate for known weaknesses in time managing that might carry into the classroom, and those that can nurture a strength. Although there might be some days in which a teenager may not need to be so strict to his or her time management schedule, managing time well will come in handy during college. Thus, after college, having a busy career will demand the ability to manage time well. Meaning the important part is learning how to manage time can contribute to a successful life. Basically, they can manage time



effectively when they gain an accurate understanding of how long things take including tasks.

This study also determined about how time management can help get things done, strengthen relationships as well as personal ones. People underestimate the importance of managing time effectively. When constantly feel like have to rush and don't have enough time, it's very easy to lose temper with those around. Ultimately, managing the time properly allow teenagers to rise above the level that were previously at. It opens new doors to become more organized and produce higher-quality work in academic including into goal setting, planning, prioritizing, decision-making, delegating, and scheduling. If teenager looking at increasing productivity, there's a good chance that they will need to focus on multiple areas in order to boost their time management skills. It gives an overall focus on what they are trying to accomplish, they should focus on time management because it will help lead throughout the rest of the process. Essentially, guidance and counselling are a gradual process to mould and redirect teenager for a brighter future. Along with academic development to acquire knowledge, attitudes, and interpersonal skills to set their own goals, make their own decision and take necessary decisions to achieve those goals.

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Q-LFR METHOD FOR MATCHING MINUTIAE FINGERPRINT IDENTICAL FEATURES

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ABSTRACT

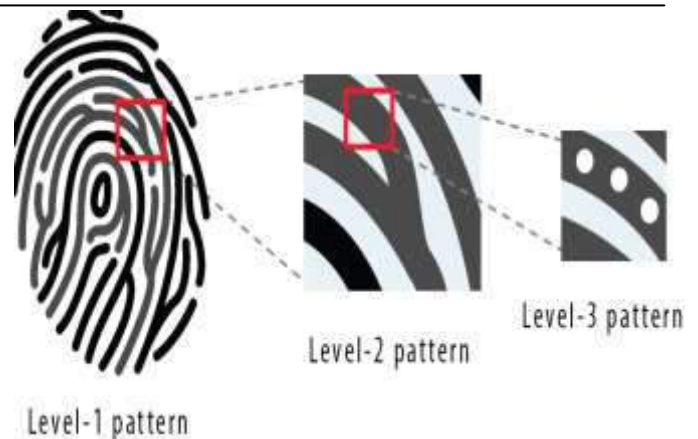
Because of its non-invasiveness, high precision recognition and the use of fingerprints are one of the most consistent biometric symbols in the context of human recognition and identification. In this paper here they suggested that a new method of machine learning can be used to find minutiae on low-resolution finger images. Traditional methods use the first step of preparation but due to the lack of intensity to be very sensitive to sound and image quality. We suggest a solid path where fingerprints are found to see the minutiae. Here they use machine learning to improve image quality and the most beneficial policy. Multi-layer ideas with in-depth learning strategies are used for a large area of the state and then select the appropriate reward structure and study area to learn the distribution. One of the major problems is that minutiae development facilities are easily accessible and their learning activity. The test result shows that our algorithm provides the best results in both parameters.

INDEX TERMS— Fingerprint, Minutiae extraction, Convolution Neural Network, Support Vector Machine, Principal Component Analysis

I. INTRODUCTION

The identification of fingerprints has become a very widespread method of applying biometric authentication [1], due to the desirable properties of fingerprints that include uniqueness, universality and consistency. Given a database of template fingers, identification consists of finding a template that matches the nature of the input fingerprints. The development of fingerprint samples can greatly improve the biometric use of finger samples. Deep learning-based development to improve performance on hidden finger samples, which can be considered very challenging. CNNs can even be trained directly to improve the biometric domain in terms of reliability and accuracy. Therefore, DL allows synchronization of improvements in data areas and feature extraction. Various fingerprints are activated and participatory fingerprint images are categorized above its identification. Typically, a professional marker manually marks all the template fingers in the database.

Fingerprints are a feature of the body and can be viewed as texture patterns formed by the brightness of the skin on the surface of various objects. We can divide finger patterns into 3 categories [2]. They differ in the complexity of systematic separation and the power of discrimination by comparing two fingerprints.



Level-1 pattern represents overall fingerprint ridge flow. These patterns are usually divided into 5 categories (left loop, right loop, whorl, arch and tented arch) [3]. Global ridge flow is a well-defined pattern and can be retrieved easily even when the image quality is not sufficient. After successfully resolving Level-1 pattern group the whole search freedom in fingerprint database is narrowed down to only specific fingerprint pattern subset what drastically reduces computation time [3].

Level-2 features or minutiae are local ridge characteristics that make every fingerprint a unique pattern. The premise of fingerprint exceptionality has been usually recognized but still be deficient in proper scientific validation. Individuality of

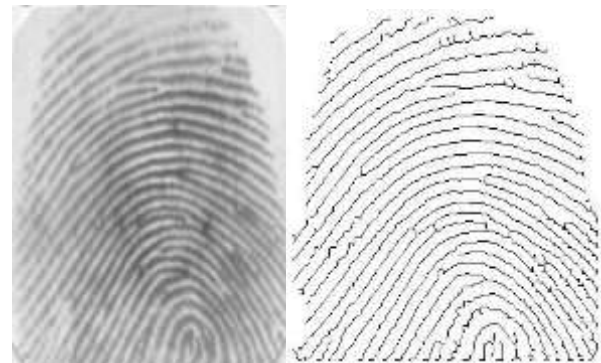
fingerprints based on Level-2 features in addition to probability of association of indiscriminate fingerprints is discussed in [4].

Level-3 features are microscopic level patterns that are almost exclusively used by forensic examiners. They consist of sweat pore locations, ridge geometric details, scars and other very small characteristics. Lately, their computer automated extraction has been seriously considered as more and more biometric system vendors begin to adopt 1000 PPI (pixels per inch) sensing resolution of fingerprint images in their recognition systems [5]. Fingerprint authentication systems deeply settled in government, business and infrastructure institutions. However, most of the capturing systems depend on the condition of the finger's surface (i.e. humidity, dust, temperature, etc.), which can affect the identification accuracy.

II. RECOGNITION SYSTEM WITH MINUTIAE EXTRACTION

In the meantime, the manual annotation is caused by a series of problems with the wrong categories. With the rapid development of using in depth learning technology to learn those aspects of discrimination directly from the original image without the processing of the image. In [6-7] convolutional neural network technology, the technology is the first to be used to determine the life of fingerprints, and the result of discovery is satisfactory. By researching and studying the paper above, we assume that the process of convolutional operation is considered a process of exclusion. After that, the CNN-based study features are provided with the SVM segment to obtain segmentation results in this paper, and this is the main idea of our paper. Various papers should develop CNN through the PCA process after the recommendation of the resolution and integration process in this research paper. The PCA process reduces the magnitude of the symptoms learned between each discussion process and each integration process. In addition, another benefit based on ROI enhancement performance on the impact of the invalid region. After the above process, the advanced semantic features of fingerprint images were automatically read to pre-recorded fingerprints, and the SVM partition was used to separate these deleted features. After that, the separation model is created using fingerprint training.

After obtaining the fingerprint image, the next step is to use the neural network to extract the correct points from the fingerprint image. This neural network has an input layer, a hidden layer and an output layer.



(a) Original fingerprint image. (b) Thinning image of fingerprint.

- The input layer: The input layer consists of 9 neurons which is 3×3 pixel blocks from the fingerprint image.
- The hidden layer: The hidden layer consists 3×3 patterns of bifurcations and terminations.
- The output layer is a map which is the same size as the fingerprint image. In the map, 0 for non-minutiae points, 1 for termination point and 2 for bifurcation point.

III. FINGERPRINT MATCHING REGULARIZATION IN DEEP LEARNING ALGORITHMS

Simply put, this algorithm returns the connection pattern between two fingerprints which is the given interval number (e.g., 0 to 1). There are basically two classes of finger algorithm: the minutiae-based one, and the non-minutiae-based one [8]. There are also hybrid methods that are a combination of them [9, 10] and are used in cases where the quality of fingerprints is insufficient to compare. In recent years, minutiae-based algorithms have become accustomed to local matching techniques due to their flexibility, flexibility and low power consumption.

Convolution Neural Network: The Convolution Neural Network is also called the hierarchical neural network that converts a convolutional and sub sampling layer. It has various layers called.

- 1) Layers for image processing.
- 2) Variable layers.
- 3) Layers of integration.
- 4) Divide layer.

Image Processing Layer: It is not the obligation to redefine the obligation to define the set filters to be modified in the training process. If there is unexplained effort, more details can make it available in a system like edges, gradients. The output layer improves visibility.

Convolutional Layer: In this layer, they find the number of maps, missing items, character sizes and organization table. Each layer has maps of the same size namely (M_x, M_y) . Kernel is transferred over the appropriate location for the input image. Pernel skip pixels in the X and y directories are defined by skipping intervals between consecutive interactions.

Max Pooling Layer: The main difference between the startup and CNN is the use of the top layer as an alternative to the lower layer. In this layer they lead to faster assembling and select consistent features that are better quality and get simplified while the sample below strikes nearby pixels before assembling as another method of collection or measurement. Acquisition of a position is allowed on the basis of multiple integrations; reduce images by inserting a fingerprint with each element in each direction.

Classification Layer: In this layer of resolution, max-pooling rectangles leave kernel-sized features selected so that the output value of the previous convolution layer is less than 1 pixel per map, or a fully integrated layer incorporates the highest layer results. Convolution on the vector of a 1-Dimensional element. One value generated per label of the category is associated with a higher standard.

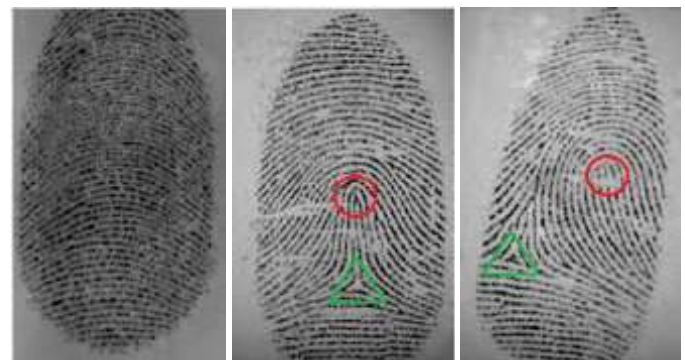
IV. TYPES OF FINGERPRINT MATCHING

To reduce the computational needs of fingerprint matching task scientists categorize fingerprints in advance. Thus fingerprint identification can be done using not the whole database of finger images but using a subset of it. Among all features, only Level 1 features, the ones which describe the global direction of a ridge flow, are used for fingerprint classification. Features of Level 2 and 3 are too vary and too specific and used for fingerprint matching mostly. Therefore, fingerprints are classified into five major classes: Arch, Tented Arch, Left Loop, Right Loop, and Whorl. Level 1 feature hold the information of the global ridge orientation (represented in an Orientation Map) and crucial points location - Singular points. By Singular

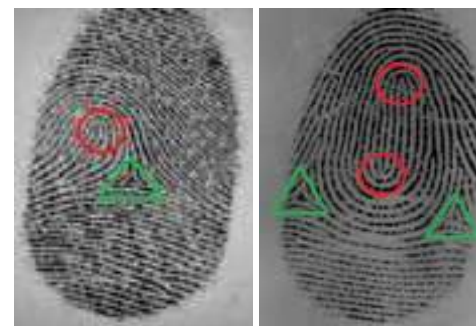
Points we understand regions of a fingerprint with the highest variance, i.e. a place where ridges change their direction the most abruptly. Two types of such Singular Points can be distinguished: Core and Delta. Intuitively, cores are points where ridge flows flock into and deltas are points where ridge flows are diverging from.

- **Arch:** The only type of fingerprints which has no singular points. Ridges in Arch fingerprints flow from one part to another and form a small hump.
- **Tented Arch:** Has one central part and one delta singular points (the delta located below the core). Ridge flow is similar to arch but more pronounced and ridges have more strong curvature.
- **Right Loop:** Has one core and one delta singular points (the delta is below and to the left of the core). As a minimum one ridge starts on the left side, moves to a center, turn around and moves back to its start.
- **Left Loop:** Has one central part and one delta singular points (the delta is below and to the right of the core). As a minimum one ridge starts on the right side, moves to a center, turn around and moves back to its start.

- **Whorl:** Has two core and two delta singular points. One or more ridges make the complete turnaround the center.



(a) Arch. (b) Tented Arch. (c) Right Loop.



(d) Left Loop. (e) Whorl.

Image is taken from [12].

V. LITERATURE REVIEW

Khodadoust et al. is proposed to use triplets consisting of two minutiae and one as the corners [20]. This true approach depends on the reliable availability of fingerprint quantities. Discovery is especially challenging for poor-quality fingerprint samples. The plurals can be obtained at all with selected fingers or with fingers with a variety of patterns among other things, i.e., arches.

Xu et al. is proposed to use a complex representation of finger minutes [15]. Each minutia is represented by a complex dynamic in the image background. Minutia direction is included in the pressure section. By using the Fourier transformation and mapping to Polar links, this method is compatible with translation and rotation. Fourier modification enables unusual translation. Switching to an image background leads to translation into Polar links for the Fourier list. This translation can be controlled by using the combination between the two samples.

Feng et al. is proposed to calculate the so-called Ridge abnormalities from public buildings [11]. This method is related to minutiae-based methods as it defines ridges by minutiae in it. However, the focus here is on the ropes. Indices



are generated on the lines, crossing the fingerprints. The edges are seen by the minute in it. This method mimics the method a human explorer can use when calculating the layers between the minutiae. This method can also deal well with the flexible distortion of the fingertips because that distortion cannot alter the river connections between the minutiae.

Jakubowski et al. is proposed to use the calculation of line crossings over multiple random lines [14]. This method describes not only the texture but also the direction found on finger samples. This method will require alignment. Otherwise, the path will fail because random lines will cross different lines. This method does not tolerate stretch ability.

Considering the fact that the pore finger removal method is an important step in the high definition of AFRS, it is important in the extraction process. With the flexibility of the pore, it is difficult to extract the pore details with a finger in a way that allows the character of the pore finger to depend on the person's location, location, and finger class. To solve such a problem is reached [16] the pore extraction process using Deep CNN and pore power conversion. Deep networks are used to detect pores by element using a large finger image region. They try to improve the pores' knowledge of the finger by finding the local maxima to see the fingertips with superhuman strength in the image of the fingers. Finally, the test results give you the impression that their fingerprint process is more focused on improvement than modern methods.

In this paper [17] the author must point out that CNN used to distinguish real and artificial fingerprints is important in security measures, the reason for concern with fingerprint protection in authentication systems. Ploy-Doh, silicon or other materials are used to create fake fingers. You are using these fingerprint images, but it does not cause any real application problems. Using this CNN approach, they provide a process to improve on both feature extraction and partition training. The local binary pattern and minutiae release is used as a quality adjective. Using these text definitions is used to determine the accuracy of a binary local pattern used to convert a gray scale image to a binary image. This method is used with precision based on the 3x3 matrix model. Minutiae look at the gap and divergence in terms of the process of diminishing the diminishing process. The fusion algorithm was then used to combine both LBP and minutiae. This model produces good accuracy in training sets. The histogram measurement method has been used to improve the accuracy of the images.

This paper mainly points out how to use CNN [18] in the field of fingerprint imaging detection research focusing on the structure of composite handmade features, but these methods are often destructive or unable to find location information between pixels. A variety of methods using the convolutional neural network (CNN) can produce high-quality demonstrations by reading and combining low-edge materials and structural features from a wide range of labeled

information. As a result, CNN is found to solve extreme flaws and distinguish accurate fingerprints from false positives. Here the author has shown that the convolutional process is considered a process of elemental discharge. Therefore, extracted features based on CNN are included in the SVM separator. The PCA process is used to reduce the size of the feature map size after each pull or integration function. In addition, the ROI correction function has been implemented in this paper to detect undesirable regional conflicts. Using the above procedure they are used without any human intervention to obtain from the basic step of fingerprint correction, and these features are extracted using SVM partition..

- In this paper [19], here the author should introduce a new problem of geometric distortion of fingerprint recognition frameworks by proposing a rapid and efficient distortion measure that blocks non-linear fingerprint distortion structures. While in recent times various recommended techniques that capture distortions using a list of unconventional patterns have been used, in this attempt here we use DCNN to calculate approximately the main components of distortion of input samples. It has the following contributions:
- No need to guess maps of the emergence and rise of participating fingerprints.
- Distortion parameters are calculated almost continuously in order to achieve further change.
- Outstanding decrease decreases during adjustment due to embedding of distortion patterns in network thinking.

VI. PROPOSED ARCHITECTURE

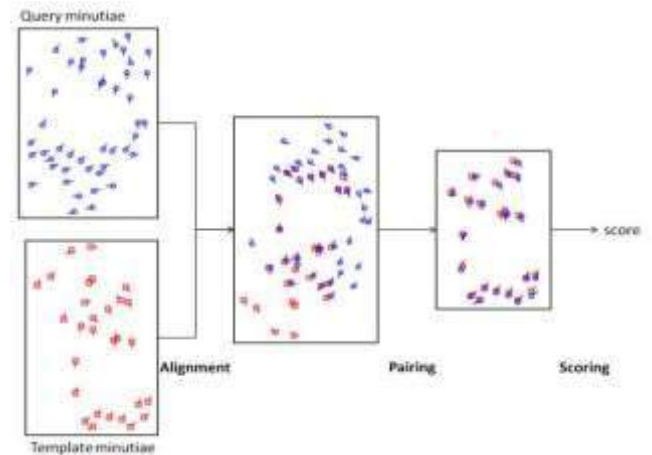
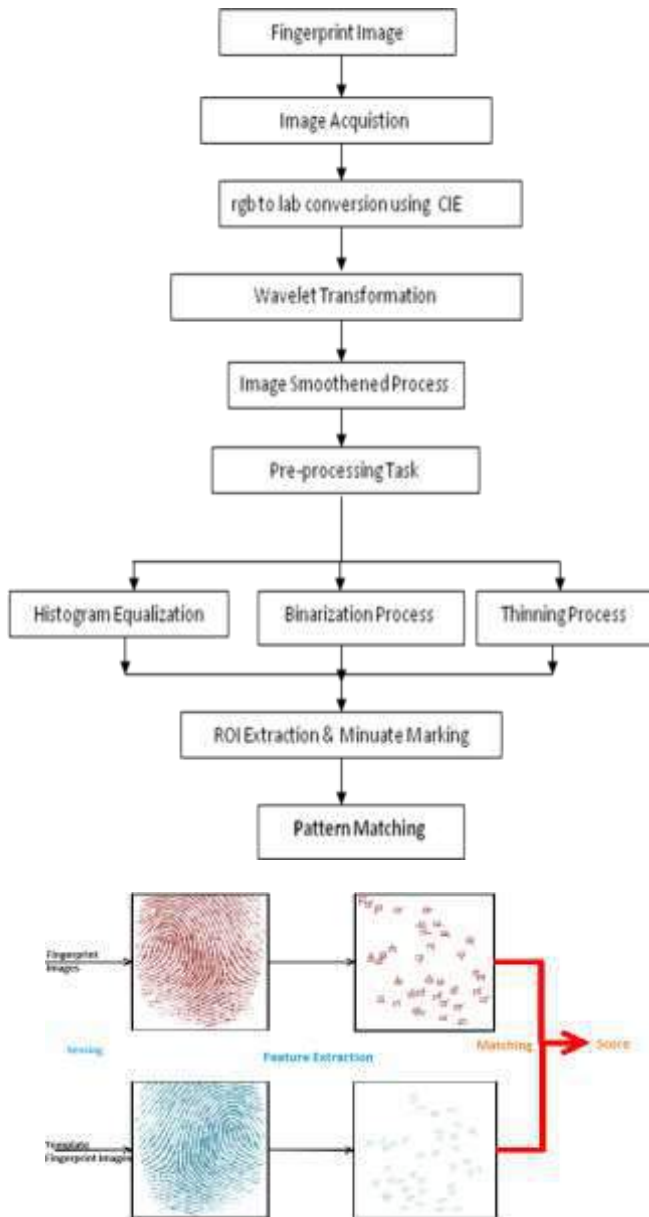


Figure: Proposed Architecture

VII. PROPOSED ALGORITHM

Algorithm for Minutiae Extraction:-

Step 1: After pre-process fingerprint image through binarization and thinning then working on pixel representation '1' or '0'. Find out the pixel value by two methods

A) First method, if the pixel value is '1' then Count Crossing Number importance on pixel value is '1' or $P=1$ and Mark Minutiae points.

B) Second method, if the pixel value is '0' then Count Crossing Number value on pixel value is '0' or $P=0$ and Mark Minutiae points.

The Crossing Number estimate is based on formula:

$$CN = 0.5 \sum_{i=1}^8 |P_i - P_i + 1|, \text{ with } p_9 = p_1$$

where P_i is the pixel value in the neighborhood of P . For a pixel P its eight neighbouring pixels are examine in an anticlockwise direction as follows.

P4	P3	P2
P5	P	P1
P6	P7	P8

Step 2: After the CN for a ridge pixel has been calculated then pixel can be off the record according to the assets of its CN value. If $CN = 1$, End Point (EP) is acquired and if $CN = 3$, Bifurcation Point (BP) is obtained. Other values of CN are not applicable.

Properties of Crossing Number

CN	Property
0	Isolated point
1	Ending point
2	Connective point
3	Bifurcation point
4	Crossing point

Step 3: The next step is to use the Q-Learning method to extract precise minutiae points from a fingerprint image. This neural network has an input layer, a hidden layer and an output layer.

- Input layer: The input layer contains 9 neurons in 3 X 3 pixel blocks from a fingerprint image.
- Hidden layer: The Hidden layer contains 3 X 3 patterns of split and cut.
- Map layout for the same size as photo fingerprint. On the map, 0 with non-minutiae points, 1 with a cross point and 2 with a split point.

This neural network is taught in off-line mode because the training lasts only for one loop. There is a well-known pattern of termination points and a few bifurcation points rules to ignore the false minutiae:

- Rule 1: if the distance between execution and bifurcation is less important than D1, these two minutiae can be false minutiae. We have to remove these two minutiae.
- Rule 2: if the distance involved in the two intersections is less than D2, then these two minutiae can be false minutiae. We have to remove these two minutiae.
- Rule 3: if the distance involved in the division into two is less than D3, then these small minutiae can be false minutiae.

We have to remove these two minutiae.

- Initialize Q[input layer, output layer]
- Initialize gamma Read image
- Thinning of image up to one pixel value
- Scan image by using 3x3 filter
- Find
- centerm= one neighbour of central
- centbif= two neighbour of central
- Calculate reward R= Euclidian distance (centerm, centbif)
- Take permutation of rows in R
- Repeat (for each occurrence up to all eight neighbouring pixels)
- select first state from the permutation
- For this state find all non-minutiae points in R
- Take permutation of non-minutiae points
- Select input layer from the permutation
- Q[input layer, output layer]= R[input layer, output layer]+ gamma*Qmax (output layer)
- input layer=output layer
- Until each occurrence up to all eight neighbouring pixels ends
- **Step 4:** If the pixels are available then go to step 1 else return Minutiae.

Proposed Algorithm:-

Q-Learning Algorithm:-

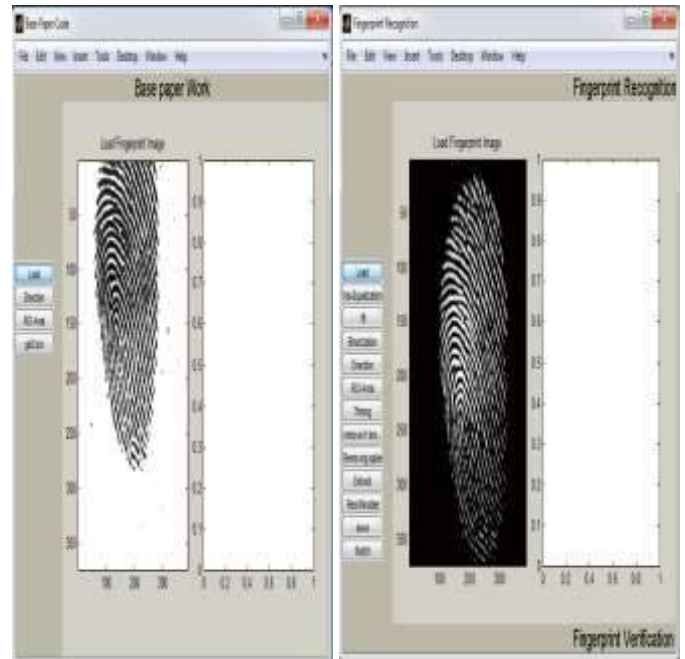
Input: Fuse Feature sets of MFP₁ Fingerprint Input and Q (s₁, a₁), Q (s₂, a₂), Q (s₃, a₃) Q (s_n, a_n) Template Fingerprints

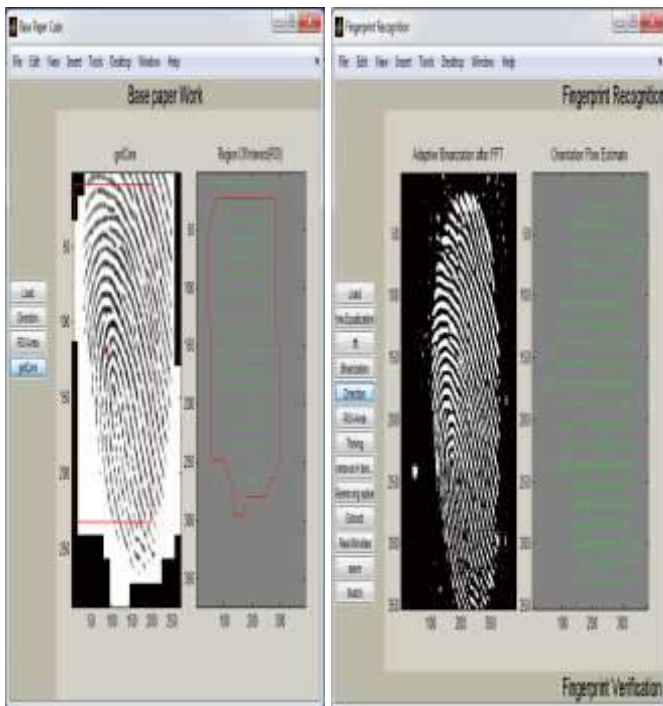
Output: The identified fingerprint.

- Q-Learning Algorithm
- Initialize Q(s, a) arbitrarily

- Repeat (For each episode):
- Initialize s
- Repeat (For each step of episode):
- Choose a from s using policy derived from a
- Take action a, observe r, s'
- $Q(s,a) \leftarrow Q(s,a) + \alpha (r + \gamma \max_{a'} (Q(s', a') - Q(s,a))$
- $s \leftarrow s'$:
- Until s is terminal ;

VIII. EXPERIMENTAL OUTCOMES





IX. EXPERIMENTAL ANALYSIS

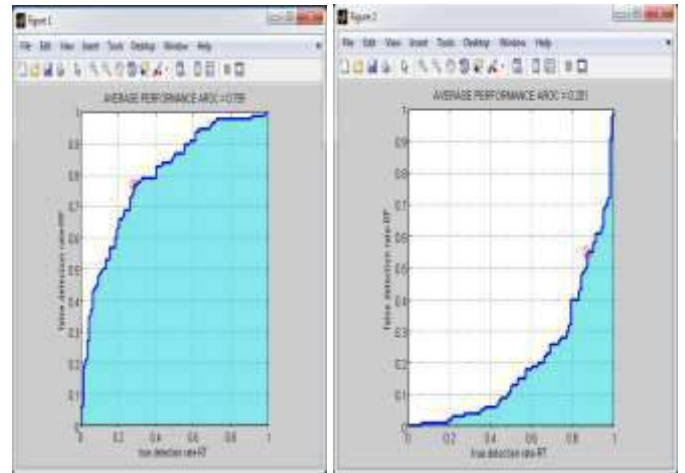


Table: Comparisons between Existing method and proposed method by different parameters

Parameters	Existing Method	Proposed Method
Distance:	0.4161	0.8134
Threshold:	0.249	-0.0637
Sensitivity:	0.58	0.41
Specificity:	0.68	0.24
AROC:	0.654	0.378
Accuracy:	0.512	0.201
PPV:	0.7333	0.3873
NPV:	0.7579	0.2241
FNR:	0.23	0.35
FPR:	0.28	0.45
FDR:	0.2667	0.6127
FOR:	0.2421	0.7759
F1 score:	0.6245	0.2187
MCC:	0.3267	-0.1034
BM:	0.49	-0.32
MK:	0.4912	-0.3885

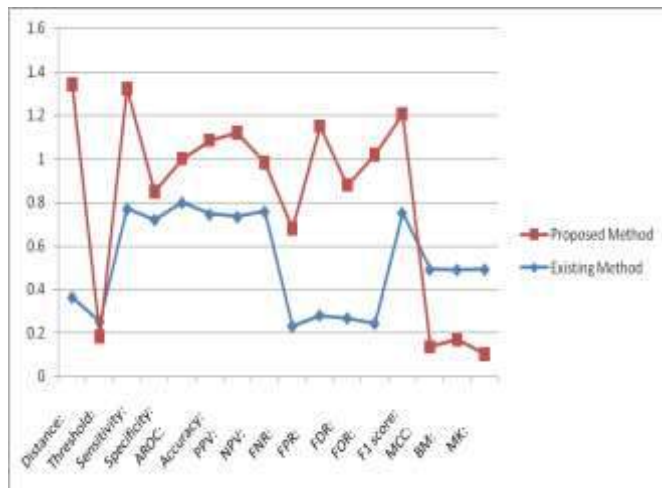


Figure: Overall Comparisons between existing method and proposed method by different parameters

X. CONCLUSION

All of the algorithms discussed in this paper are subject to rapid fingerprint development and rapid minutiae release. Fingerprint enhancers to improve the image of the ridge image and remove noise from the fingerprint image, which helps to make the minutiae removal error. Minutiae algorithms are faster because they use smaller patterns compared to other more accurate image analysis algorithms. If the image is not processed, i.e., low quality and sound can create many false minutiae and real minutiae do not exist. So how to extract Q-Learning minutiae is the best way of modern finger recognition system.

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MODELING OF THE THERMAL REGIME IN THE CONDITIONS OF THE MANAGED AGROSYSTEM

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ABSTRACT

The aim of the study is to develop a resource-efficient irrigation technology for growing tomato plants under managed agrosystems. Objectives of the study: To assess the impact of MAS indicators (duration of light, greenhouse depth, seedling thickness, day and night temperature difference, soil salinity, irrigation rate) on tomato crop yields and conduct a national experiment; Development of irrigation regime for tomato plant in MAS conditions; Modeling of heat regime, moisture, micronutrient and fertilizer consumption in tomato plant cultivation under MAS conditions.

KEYWORDS: *Managed agrosystem (MAS), recirculation, substrate, peat, construction, energy, chronological direction, differential function,*

INTRODUCTION

Water resources play an important role in the organization of food security in the world and in the development of agriculture. In particular, during the years of water scarcity, special attention is paid to the cultivation of more agricultural products on irrigated lands. In this regard, managed agrosystems (MAS) are characterized by consistently high yields as well as low water consumption. According to the FAO, the MAS area has now increased by 32.3% over the past five years and stands at 523,000 hectares. MAS areas are expected to grow by 8-11% per year and occupy 830-900 thousand hectares in 2030 [13,14].

Conferences dedicated to the sustainable development of agriculture in the world focus on improving the management of water resources in the context of MAS, the rational use of available land and water resources through the development of optimal irrigation, climate, fracture conditions. At the same time, the development of a science-based resource-efficient irrigation technology framework that provides sustainable high yields in MAS conditions with low water and material resources is a pressing issue. One of the important tasks in the study is to develop a technological basis for resource-efficient irrigation for MAS in Kibray district of Tashkent region and Kurgantepa district of Andijan region [21].

Section 3.3 of the Action Strategy for the five priority areas of development of the Republic of Uzbekistan clearly defines the work to be done on "Modernization and accelerated development of agriculture." According to him, special attention is paid to the consistent development of agricultural production, further strengthening the country's food security, expanding the production of environmentally friendly products, significantly increasing the export potential of the agricultural sector [12].

The dissertation research was approved by the President of the Republic of Uzbekistan on November 20, 2018 No. PK-4020 "On measures to create additional conditions for the development of greenhouse complexes" and March 20, 2019 No. PK-4246 "On measures for further development of horticulture and greenhouses in the Republic of Uzbekistan." [10,11], as well as other normative legal acts related to this activity.

RESEARCH METHODS

The research used the methodology of field experiments on the implementation of vegetable crops in the conditions of MAS, as well as methods of mathematical modeling, empirical generalization and mathematical statistics.



LITERATURE REVIEW

Growing vegetables is a topical issue in remote areas of the country, even in rural areas, even in the cold days of winter. It requires the production of high-quality plant products for consumption, low in heavy metals, nitrates and many other harmful substances. In the conditions of MAS, the production of environmentally friendly products using new technologies that save energy resources in soils remains an urgent task. [22].

It is possible to reduce the negative impact of crop production on the environment in protected soils, increase production efficiency by improving plant cultivation technologies using artificial light sources. In this case, it can be used in MAS to produce environmentally friendly products throughout the year [24].

This requires the analysis and results of scientific developments in the field of air temperature, soil salinity, location of seedlings, irrigation rates, duration of light in protected areas, which are potentially productive, economically viable, designed for year-round cultivation of vegetable crops in MAS conditions.

- The effect of artificial lighting devices on soil fertility, nutrient solutions to create favorable conditions for root growth environment and root consumption, increase productivity;

- To study the effect of light and temperature on MAS conditions in the cultivation of tomato plants and increase its productivity;

- The effectiveness of the use of vegetative devices to increase crop yields of artificial light for tomato plants;

- Selection of the most productive and disease-resistant varieties and hybrids for cultivation in MAS conditions [22,24,25].

The purpose of applying the results of the analysis is to achieve economic efficiency by using the technology of continuous, year-round cultivation of the product, saving energy and resources for the cultivation of tomato plants.

In hydroponics, the plant root system is located in special pots and is distinguished by the absence of substrate. In the saturation of plant roots, it provides at the expense of nutrient solutions that are in constant motion through the process of aeration and recirculation. In this Case, the solution on the container must be periodically renewed. When the pump is switched off, the plants can be supplied with the solution at the bottom of the container for only a few days [9,22,25].

Ionitoponics is cultivation on a substrate consisting of a mixture of two synthetic resins. It has not been widely used due to the high cost of ionized substrate [23].

In aeroponic cultivation, the plant is hardened to the stem and the root system is placed in a closed space. The nutrient solution is fed continuously to the roots. The application of these technologies requires the construction of a fully automated system. Therefore, this method is not widespread due to its relatively low reliability and technological difficulties in implementation [23,25].

Aggregate topology is the best developed and most common method of growing plants using soil substitutes. In this Case, mineral and synthetic substrates do not produce enough SO₂, plants face a shortage of carbon dioxide during intensive cultivation, so when using the method of aggregation, additional equipment is required to feed plants with carbon dioxide (SO₂) [23,25].

In the root-growing environment (IO'M) of hemoponics technology is used substrate organic materials - tree bark, peat (moss), wood shavings and peat with a high surface permeability. Years of use of the peat layer have shown that effective performance has been observed for 3 years from the year of use. Before the start of the growing season of the fourth year, the addition of fresh peat in the amount of 15-20% of the total peat volume does not lead to water retention in the upper peat layer for another 3 years and deterioration of aeration processes in the layer [23,25].

ANALYSIS AND RESULTS

Modeling and calculation of energy consumption of greenhouses of various designs.

$$q_{ucc.ман}(t) + \sum_{i=1}^N q_{ucc.йз}(t) = q_{ucc.мау}(t) + \sum_{i=1}^N q_{эп.ч}(t) \quad (1)$$

Here: $q_{ucc.ман}(t)$ – heat from a heat source; $q_{ucc.йз}(t)$ – greenhouse construction to absorb solar energy; $q_{шам}(t)$ – energy consumption due to ventilation; $q_{эп.ч}(t)$ – energy dissipation from greenhouse construction,

Here: $\sum_{ин}^{A.ж} q(t)_{ин}$ – the amount of heat accumulated by the structural elements of the greenhouse;

$\sum_{оуи}^{A.ж} q(t)_{оуи}$ – the amount of heat consumed by the structural elements of the greenhouse; $Q^{pump}(t)$ –

heating the greenhouse in the furnace mode; $Q^{intake}(t)$ – heat loss in the greenhouse.

The heat balance equation in a greenhouse. Уравнение теплового баланса в теплице



$$\frac{dQ}{dt} = \frac{kVdT_{ucc}}{dt} = \sum_{i=1}^n q_{куп} + \sum_{i=1}^n q_{чик} , \quad (2)$$

Here: Q – amount of heat in the greenhouse, количество тепла в теплице, Дж; T – greenhouse temperature, температура теплицы, К; V – greenhouse size, m^3 ; $q_{куп}$, $q_{чик}$ – heat inflow and outflow to the greenhouse, (Dj/s)
 Heat balance equation for greenhouse air:

$$\frac{dQ}{dt} = q_{куп} + q_{чик} - q_{iык} \quad (3)$$

Here: $q_{iык}$ – heat loss in the greenhouse, (Dj/s).

In other words, the air temperature in the greenhouse depends on the amount of energy absorbed, released and lost, ie:

$$T_{ucc} = f(Q) \quad (4)$$

Equation of heat flow through a conducting system (general form of the equation. (4.1.3,4.1.5)):

$$Q_{куп} + Q_{чик} = \lambda(T_{ucc} - T_{mau}) \quad (5)$$

Boundary conditions.

$$T_{mau} = \theta(t) \quad (6)$$

$$T_{ucc}|_{t=0} = \bar{T}_{ucc} \quad (7)$$

Here: T_{ucc} – greenhouse temperature, К; T_{mau} – ambient temperature, К; $\lambda(T_{ucc} - T_{mau})$ – function linking the difference in air temperature indoors and outdoors; $T_{mau} = \theta(t)$ – preset dynamics of outside air temperature, К; $Q|_{t=0} = Q_0$ – the given internal energy of the air in the greenhouse, Dj.

In constructing this simplest model, it was assumed that there were no inertial forces in heating the structural elements of the greenhouse. Although the function that associates temperature drop with heat consumption in a greenhouse is a very complex empirical function (various authors describe this function in different ways), its main feature is that zero heat consumption is maintained at constant temperature. In MAS, the temperature is variable, decreases with decreasing external temperature, and increases sharply with increasing. This means that with a small change in pressure in the system (4.1.4) the complex function can be approximated by a linear function [1,5,6,7]

$$q_{куп} + q_{чик} = \xi(T_{ucc} - T_{mau}) \quad (8)$$

Suppose that the shape of the greenhouse is of constant length, then

$$T_{ucc} = f(Q) \quad \text{converted to конвертировано в } T_{ucc} = \frac{q}{V_{ucc}} + T_{mau} \quad (9)$$

Here; B_{ucc} – greenhouse size, m^3 .

Let us rewrite the equations of the model and then solve them analytically, provided that the boundary condition (chronological direction of the ambient temperature) is set by a sinusoid (differential function). The method of solving this type of equation is known:

$$\frac{kVdT_{ucc}}{dt} = \lambda(T_{ucc} - T_{mau}) \quad (10)$$

$$T_{mau} = \Psi \cdot \sin(\omega t) \quad (11)$$

In the form of a single equation, the system has the following form:

$$kV \frac{dT_{ucc}}{dt} = \lambda(T_{ucc} - \Psi \cdot \sin(\omega t)) \quad (12)$$

We are looking for a solution in the form of two functions

$$T_{ucc} = (v \cdot v) \quad (13)$$

next

$$\frac{d(v \cdot v)}{dt} = v \cdot \frac{d(v)}{dt} + v \frac{d(v)}{dt} \quad (14)$$



$$kV \left[v \frac{d(v)}{dt} + v \frac{d(v)}{dt} \right] = \lambda [v v - \Psi \cdot \sin(\omega t)] \quad (15)$$

$$v \left[kV \frac{d(v)}{dt} - \lambda v \right] = -\lambda \Psi \cdot \sin(\omega t) - kV v \frac{d(v)}{dt} \quad (16)$$

v Select the function, then:

$$kV \frac{d(v)}{dt} - \lambda v = 0 \quad (17)$$

We differentiate according to the parts and find the solution as follows:

$$v = C_1 \cdot e^{\frac{\lambda}{kV} t} \quad (18)$$

We get an arbitrary solution on a bit that corresponds to the state of integration constant.

$$C_1 = 1 \text{ ба } v \neq 0.$$

$$\lambda \Psi \cdot \sin(\omega t) = -kV e^{\frac{\lambda}{kV} t} \frac{d(v)}{dt} \quad (19)$$

$$v = -\lambda \Psi kV \int \sin \omega t \cdot e^{-\frac{\lambda}{kV} t} dt + C_2 \quad (20)$$

or finally,

$$v = \lambda \Psi kV \left[\frac{kV}{\lambda} \cdot e^{-\frac{\lambda}{kV} t} \sin \omega t - \frac{kV \omega}{\lambda} \cdot e^{-\frac{\lambda}{kV} t} \cos \omega t \right] + C_2 \quad (21)$$

or

$$v = \Psi k^2 V^2 \left[e^{-\frac{\lambda}{kV} t} \sin \omega t - \omega \cdot e^{-\frac{\lambda}{kV} t} \cos \omega t \right] + C_2 \quad (22)$$

$$\text{As you know, } T_{ucc} = (v \cdot v)$$

Thus, the solution is expressed as follows:

$$T_{ucc} = k^2 V^2 [\sin \omega t - \omega \cdot \cos \omega t] + C_2 \quad (23)$$

here: C_2 – integral constants that can be determined from the initial condition (6).

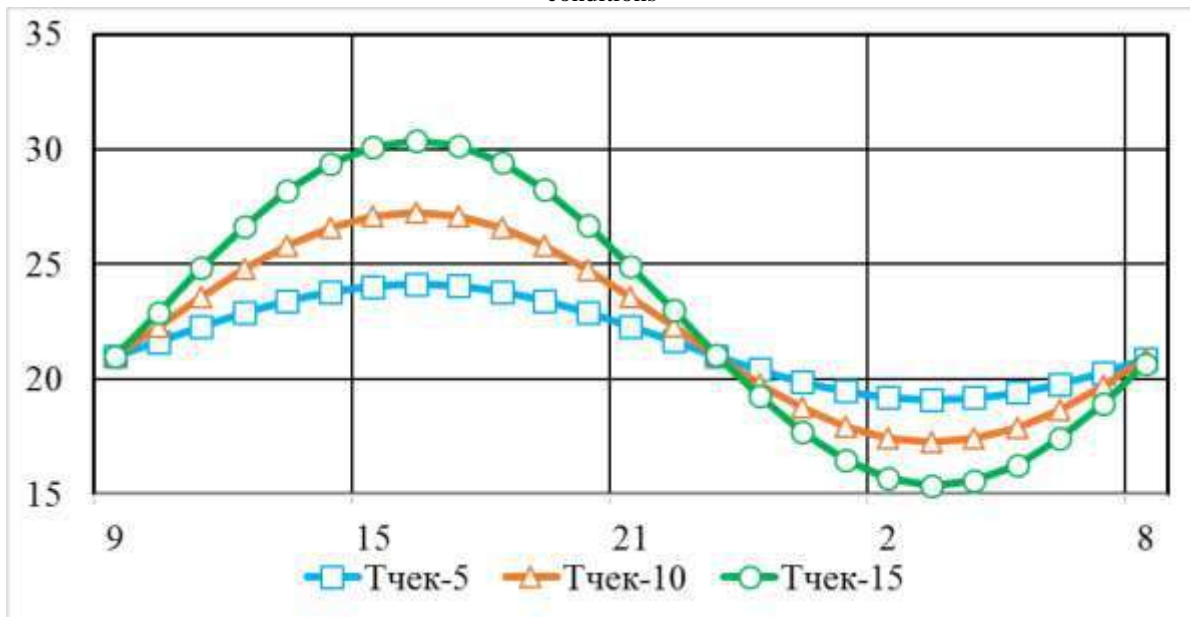
$$C_2 = \bar{T}_{ucc} + \omega k^2 V^2 \quad (24)$$

Or easier,

$$T_{ucc} = k^2 V^2 [\sin \omega t - \omega \cdot \cos \omega t] + \bar{T}_{T_{au,ucc}} + \omega k^2 V^2 \quad (25)$$



Graph of temperature change in the greenhouse under CAS conditions



4.1.1 graphics The change in temperature regime in the greenhouse is given by Tlim-5 (Tlim-5) \pm 5 change from the optimum (+21 oS) temperature, Tlim10 \pm 10 oS change and Tlim15 \pm 15 oS change. In order to get a high yield from the tomato plant, it is preferable not to allow as large a change in temperature as possible. When Tlim-15, the plant falls into a state of stress, becomes ill or dies. Even if you get sick, you will have to pay extra to treat it. Therefore, when the temperature was Tlim-5, the yield was maximum and the costs were minimal [1,5,6,7].

DISCUSSION

BAT heat regime is one of the main factors affecting tomato plant yield. Tomato is a heat-loving plant, when the minimum temperature is in the range of +14 oC and the maximum temperature is in the range of +28 oC, favorable temperature conditions are created for the plant when provided with additional ventilation and protection from strong sunlight [E. Lyan22]. According to V. N Suvichnikov, when using the mathematical model developed in the conditions of BAT, internal and external factors are taken into account. Power supply, day length hours, outside temperature, solar radiation intensity, wind speed and other characteristic factors [16]. The values of external factors differ from the daily average value by location. The greenhouse complex was determined taking into account the parameters of the technological process and the regime of greenhouse conditions. The amount of heat energy consumed by BAT, energy consumption of power supply systems, total energy consumption of the power supply system, gross energy utilization factor from the level of influencing factors and the results of the analysis of the obtained dependencies are presented.

V.L. Sudakov used light sources. Plants develop under the influence of light, the process of photosynthesis is observed through the leaves and body, and dry matter is formed.

CONCLUSIONS

When using artificial lighting devices, it is possible to provide a light flux of around 450 - 475 nm by using energy-saving cold and hot diode devices together. A spectrum of light that does not have a sufficient level of radiation does not affect the productivity of the tomato plant and leads to excessive electricity consumption [15].

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COMPETITIVE EXAM ASPIRANTS ON MATHEMATICS INTEREST AND ANXIETY: AN ANALYSIS OF UNDERGRADUATE STUDENTS

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ABSTRACT

Mathematics interest is a complex and behavioural aspect of mathematics. It has so many characteristics, and it can be attributed to as many situations as discuss in mathematics education. Mathematics is not enough to impart theoretical learning; must that learning put into practice. Mathematics anxiety is a feeling of tension, apprehension, or fear that interferes with math performance. Mathematics anxiety, also known as mathematics phobia, is anxiety about one's ability to do mathematical concepts. It is a phenomenon that is often considered when examining students' problems in mathematical concepts in competitive examinations. The present study aimed to analyse the mathematics interest and anxiety among competitive exam aspirants of undergraduate students. The investigator has selected the normative survey method for conducting this study. The investigator used it as a mathematical interest and mathematical anxiety research tool for collecting the data. The reliability value was 0.872 and 0.789. In the Salem district, the investigator selected 40 competitive exam aspirants using a stratified random sampling technique. A set of competitive exam aspirants from each exam study centre was selected randomly. Results revealed that competitive exam aspirants of arts and science subject differ in mathematics interest and mathematics anxiety. Results also showed a relationship between mathematics interest and mathematics anxiety among competitive exam aspirants and mathematics interest nearly 8% per cent of the variation in mathematical anxiety of competitive exam aspirants of undergraduate students.

KEYWORDS: *Mathematics interests, Mathematics anxiety, Competitive examination, Aspirants.*

INTRODUCTION

Education is a process of human enlightenment and empowerment to achieve a better quality of life that leads to developing a harmonious personality and involves all aspects of intellectual religious, moral, and physical of the person's personality. Schools are always transitional institutions (Rajkumar & Hema, 2016). They prepare pupils for education or occupation or family life and so on. In a real sense, mathematics is a science of space and quantity that helps solve life problems needing numeration and calculation. Mathematics provides opportunities for the intellectual gymnastic of the man's inherent powers.

Mathematics interest is a complex behavioural aspect of mathematics. It has so many characteristics, and it can be attributed to as many situations as we discuss in mathematics education (Rajkumar & Hema, 2017). The critical strategy of mathematics teaching

should focus on keeping the student's interest in mathematics. If the students are interested in learning mathematics, their academic achievement and teacher tasks become more accessible. The importance of interest in mathematics cannot be overestimated. Students who are interested in their learning activities are likely to report high competence beliefs (Marsh, Trautwein, Ludtke, Koeller and Baumert, 2005; Tracey, 2002), high achievement levels (Koeller, Baumert and Schnabel, 2001) and choose high school courses that are related to their interests (Watt et al., 2012). Mathematics Interest is a vital interest of psychologists, advertisers and more to understand what makes people change their beliefs or opinions. Mathematical anxiety is anxiety about one's ability to do mathematics (Malini & Rajkumar, 2020). It was a phenomenon that is often considered when examining students' problems in mathematics (Rajkumar & Hema, 2019). Mark



Ashcraft (2002) defines math anxiety as "a feeling of tension, apprehension, or fear that interferes with math performance". Trezise and Reeve (2016) showed that students' math anxiety could fluctuate throughout a math class duration. Furner and Gonzalez-Dehass (2011) explained that "math anxiety is a real issue that can impact a young person's goals, many career-related decisions they may make in life and their overall future".

REVIEW OF RELATED LITERATURE

The Literature review of studies conducted on interest in mathematics studied the influence of learning style, intelligence and classroom climate on process outcomes in mathematics (Aruna, 2015). The study results obtained that boys and girls differ significantly at 0.01 level in the mean scores of cognitive style, intelligence, classroom climate and dependent variable process outcomes in science; urban and rural school students. Another author Vandana Sharma, (2014). struggled to determine no significant difference was observed between boys and girls on the variable of mathematical interest. Also, it was observed that rural and urban area students did not show any significant difference in mathematical interest. Mohamed Illiyas & Aron Antony Charles (2017) studied interest in mathematics and high school student's academic achievement in the Chennai district. The study results revealed a significant difference in interest in mathematics and academic achievement of high school level students with respect to their type of management. Preston (2008) defined it as feelings of tension and anxiety that interfere with manipulating numbers and solving mathematical problems in a wide variety of ordinary life and academic situations. Since then, others have continued their efforts driven by research evidence that mathematics anxiety not only inhibits one's ability to perform mathematically (Preston, 2008), but it is highly probable to have originated from classroom experiences too (Newstead, 2003). Lay Keow Ng (2012) revealed mathematics anxiety in secondary school students. The study results

showed an average anxiety level of 44% and a negative correlation with achievement.

METHODOLOGY

a. Research Design

The present study attempts to determine the mathematics interest and anxiety among competitive exam aspirants of undergraduate students. The investigator has selected the normative survey method for conducting the study.

b. sample

A stratified random sampling technique was used. The sample for the present study consisted of 40 competitive exam aspirants. The samples of both sexes coming from both rural and urban areas were included in the study.

c. Tools used in the study

The data are essential for carrying out a research investigation. The data are collected with the help of a particular apparatus called tools. The success of research must be received by selecting a proper tool for the research. So, the investigator used as mathematical interest and anxiety and the tool's reliability was 0.872 and 0.789.

d. Data Collection

In the Salem district, the investigator selected 40 competitive exam aspirants using a stratified random sampling technique. A set of competitive exam aspirants from each exam study centre was selected randomly. Thus, the researcher used a stratified random sampling technique to collect data from the vast area of Salem district.

DATA ANALYSIS

The present study data collected from 40 competitive exam aspirants have been analysed using the following statistical techniques: t- test, correlation, and regression analysis.

RESULTS AND FINDINGS

t-test

To test the arts and science, students differ with mathematical interest and mathematical anxiety.

Table – 1: Comparison of Arts and Science competitive exam aspirants on mathematical interest and mathematical anxiety

Variables	Subject	N	Mean	S D	t- value	P-value
Mathematical Interest	Arts	10	82.70	13.606	2.632	0.022
	Science	30	94.80	8.880		
Mathematics Anxiety	Arts	10	77.60	19.375	2.736	0.019
	Science	30	95.50	12.572		



Interpretation

The above table shows that the calculated P values are less than 0.05 and are significant at a 5% level in all cases. Hence the formulated hypothesis is not accepted in these cases.

Conclusion

competitive exam aspirants of arts and science subject differ in mathematical interest and mathematical anxiety.

Correlation Analysis

To identify any relationship between mathematical interest and mathematical anxiety among competitive exam aspirants.

Table – 2: Relationship between mathematical interest and mathematical anxiety among competitive exam aspirants

Variable	Mathematical Interest	Mathematics Anxiety
Pearson Correlation	1	0.644
Mathematical Interest Sig. (2-tailed)		0.000
N	40	40

In mathematical interest and mathematical anxiety, relations are observed. Hence in these cases, the hypothesis is not accepted.

Conclusion

There is a relationship that exists between mathematical interest and mathematical anxiety among competitive exam aspirants.

Regression Analysis

To find out mathematical interest, how much predict the mathematical anxiety among competitive exam test takes.

(i) Mathematical interest

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.207	0.043	0.018	8.4939

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	122.306	1	122.306		
Residual	2741.559	38	72.146	1.695	0.201
Total	2863.865	39			

Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	59.888	11.050		5.420	0.000
Mathematical Interest	0.156	0.120	0.207	1.302	0.201

The multiple R of the linear regression equation is (0.207). For testing, the multiple correlation coefficient (0.207) shows that there is a low correlation in mathematical interest among competitive exam aspirants. The coefficient of multiple determination of adjusted R square is (0.018) for the mathematical interest presented in the table. Therefore, it can be concluded that nearly 1.8 per cent of the variation in

competitive exam aspirants' mathematical interest. The estimated standard error is 8.493.

ANOVA table showing that the significance value of 0.201 indicates that combining these academic performances significantly predicts the mathematical interest among competitive exam aspirants.

Regression co-efficient that the research variables academic performance had a significant predicting influence on competitive exam aspirants'



mathematical interest at a 0.05% level of significance. It is inferred that predictors had the highest and significant standardised beta coefficient, which indicates that it was the most crucial factor contributing

(ii) Mathematical Anxiety

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.335	0.112	0.089	8.18011

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	321.124	1	321.124		
Residual	2542.742	38	66.914	4.799	0.035
Total	2863.865	39			

Coefficients

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	58.147	7.427		7.829	0.000
Mathematics Anxiety	0.176	0.080	0.335	2.191	0.035

The multiple R of the linear regression equation is (0.335). Testing multiple correlation coefficient (0.335) shows a low correlation in mathematical anxiety among competitive exam aspirants. The coefficient of multiple determination of adjusted R square is (0.089) for the mathematical anxiety presented in the table. Therefore, it can be said that nearly 8.9 per cent of the variation in the mathematical anxiety of competitive exam aspirants. The estimated standard error is 8.18011.

ANOVA table showing that the significance value of 0.035 indicates that the combination of these academic performances significantly predicts the mathematical anxiety among competitive exam aspirants.

Regression co-efficient that the research variables academic performance had a significant predicting influence on the mathematical anxiety among competitive exam aspirants at 0.05% level of significance. It is inferred that academic performance predictors had the highest and significant standardised beta coefficient, which indicates that it was the most crucial factor contributing to mathematical anxiety. In the raw score form, the equation is

$$AC = 58.147 + 0.176 \text{ Mathematics Anxiety}$$

Mathematical anxiety is dependent on academic performance.

to mathematical interest. In the raw score form, the equation is

$$AC = 59.888 + 0.156 \text{ Mathematical Interest}$$

The mathematical interest is dependent on academic performance.

DISCUSSION ON THE FINDINGS

Mohamed Illiyas (2017) studied interest in mathematics and high school students' academic achievement in Chennai district. The study results revealed a significant difference in interest in mathematics and academic achievement of high school level students with respect to their type of management. Compare with the present study, the result was found. Competitive exam aspirants of arts and science subject differ in mathematical attitude and mathematical anxiety and to predict academic performance significantly predicts the mathematical interest and mathematical attitude.

Compare with the above study, the same result was found. There is a relationship between interest in Mathematics and academic achievement of high school level students.

Lay Keow Ng (2012) revealed mathematics anxiety in secondary school students. The study results showed that an average anxiety level of 44% and a negative correlation with achievement. Compare with the above study, a different result was found. It is found that there is a relationship between mathematical interest and mathematical anxiety among competitive exam aspirants.

CONCLUSION

The present study aimed to analyse the competitive exam aspirants mathematical interest and mathematical anxiety among undergraduate students.



Mathematics is the main subject of the school curriculum. It develops many skills among competitive exam aspirants. The study's findings showed that competitive exam aspirants' mathematics interest and mathematics anxiety should be motivated and genius in the exam centres for the practical classroom's success-mathematics anxiety in competitive exam aspirants. This area needs more attention. Competitive exam aspirants underlined the predominant factors that interfere with students' mathematics learning. The majority is college-related, and teachers creating safe learning environments and helping students develop positive attitudes since those who are less anxious are more likely to succeed in mathematics. They were very much mathematical interest and mathematical anxiety; there is a significant difference observed between arts and science of competitive exam aspirants on the variable of mathematical interest and mathematical anxiety. The present study's findings suggested that teachers should take care of competitive exam aspirants in mathematics for their better achievement. Competitive exam aspirants should provide equal and more facilities to increase their mathematical interest and reducing mathematical anxiety.

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INFLUENCE OF CANCER LAGNA ON SIVACHARYA'S – A STUDY

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ABSTRACT

Our motto is 'It is better to worship in a temple' and 'Do not live in a city without a temple'. Thus 'spirituality' and 'worship of the gods' have been well developed and rooted since the time of our forefathers. All the best core tenets of our Hinduism are one of temple and worship. All the beauty, glory and majesty of the deities are reflected in the growth and perpetuation of the spiritual norm. Numerous texts such as Thevaram, Thiruvacakam, Tirupukal, Kandapuramam, and rare epics such as the Ramayana and the Mahabharata are expressions of spirituality in our Hindu religion. These Hindu texts make the glory of Hinduism known to the world.

KEYWORDS - Sivacharya, Ragu, Ketu

I. INTRODUCTION

Religions such as Jainism, Vaiganism, Vaishnavism, and Buddhism appeared in ancient times. According to their religion, six daily pujas were performed for the Lord. These were promoted by the kings of the time in all sorts of forms of gold, material, and grants. We know that the lands were also given to the temple and grew spiritually. This was continued by the Sivacharyas through their lineage. Its ethics have been unwavering.

It is necessary to mention here the throat of the Sivacharyas in the deities thus held. This is what the great Purana writer Sheikh Peruman has humbly said, The study of the influence of the Sun, Guru and Ketu planets in the horoscopes of the Sivacharyas has been studied in reference to the throat of such Sivacharyas.

Gurus, also known as Sivacharyas, do a wonderful job of cultivating godliness in the minds of the priests by reciting the Vedic mantras they have learned to others. This is their deity. His advice and counsel can make a positive difference in the minds of the devotees who come to tell God their grievances and help them to forget their sorrows and worries and bring peace of mind and happiness.

The Sivacharyas have been serving the Lord with peace of mind since time immemorial, the work of 'Sivacharyas' as their clan and optional profession. They have been teaching the scriptures and Sivagama rituals to others from an early age and preparing them for the work of Sivacharya.

II. SIVACHARYAS

The work of Sivacharya is greatly desired by the AdiSaiva devotees. It is a great work that can give peace of mind and happiness. These Sivacharyas are the ones who follow the Vedic mantras and the Sivagama system regularly. The Sivacharyas are very diligent in their devotion to God and spirituality and are very important in guiding people to practice spirituality.

After a period of time the Vedic mantras and Sivagama worship are taught in a special way in the Vedic school and are developed into excellent Sivacharyas. In the early days, the teacher would listen to all the scriptures and Sivagama methods through Sivacharya and record them in his mind. Later he was taught the Vedic and Sivagama methods of writing with his fingers in the sand and with a stylus in the palm grove. Everyone from the king to the common citizen went in search of the teacher's place of work and gave him assignments and educated him by imprinting in his mind what he had taught.

II. ASPECTS IN SIVACHARYA HOROSCOPES

1. Position of Sun, Jupiter and Ketu planets in Sivacharya horoscopes.
2. Sun, Jupiter, Ketu contact in 1st, 9th, 10th houses.
3. Correlation between Sun, Guru, Ketu.



- 4. Rules for setting up Sivacharyar mission.
- 5. Relation of Sun, Jupiter, Ketu to the work of Sivacharya.
- 6. The connection between the 9th house and the work of Sivacharya.

III. RULES IN SIVACHARYA HOROSCOPE

Here mentioned the collected, compiled, analyzed and researched the horoscopes of Sivacharya’s in horoscope table.

The following rules were taken from the study:

- 1. Sun, Jupiter and Ketu planets conjunction with 1st, 9th, 10th houses
- 2. Sun, Jupiter and Ketu planets aspecting with 9th house.
- 3. Sun, Jupiter and Ketu planets in 9th house.
- 4. Sun, Jupiter and Ketu in their padas.
- 5. Sun, Jupiter and Ketu planets aspects on 9th lord.

IV. SIVACHARYA’S HOROSCOPE TABLES

Example Horoscope : 01

Date of Birth	: 30.06.1985	Time of Birth	: 09.12 AM
Place of Birth	: Tiruchencode	Lagna	: Cancer
Signs	: Scorpio	Star	: Anuraadha - 3
Dasa Bhukthi	: Saturn Dasa 05 Years 01 Month 01 Days		

	VENUS RAGU		MARS SUN
	RASI		LAGNA MERCURY
JUPITER			
	MOON	SATURN KETU	

LAGNA	MARS KETU		SATURN
SUN	NAVAMSA		JUPITER
VENUS		RAGU MOON	MERCURY

Rules applied in horoscope table:

- Based on Rule 1: Jupiter planet conjunction with 10th house lord Mars.
- Based on Rule 4: Jupiter and Ketu in their padas.

Example Horoscope : 02

Date of Birth	: 01.05.1975	Time of Birth	: 10.30 AM
Place of Birth	: Selam	Lagna	: Cancer
Signs	: Aquarius	Star	: Shatabhisha - 1
Dasa Bhukthi	: Ragu Dasa 15 Years 11 Month 03 Days		



V. CONCLUSION

The study, entitled ‘The Impact of the Sun, Jupiter and Ketu Planets in the “Sivacharya Yoga’s based on Taurus Lagna”, was done to know more about the Sivacharya’s who contribute to the development of spirituality and devotion in the society and to help in further research.

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SEVERAL PERSPECTIVES ON THE RELATIONSHIP BETWEEN PHILOSOPHY, PHILOSOPHY OF SCIENCE, AND LAW

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ABSTRACT

The aim of this study is to determine the degree to which philosophy, law philosophy, and law science are related and distinct in order to discern the features of each of these disciplines. Philosophy is a science that seeks to discover the core of original truth via the qualities of its thinking: rational, methodical, systematic, coherent, and integrative thinking, macro and microcosmos thinking, also sensory and non-sensory in nature. Legal philosophy is a subfield of philosophy, namely the philosophy of behavior or ethics that examines the essence of law. In other words, legal philosophy is a discipline that examines law intellectually.

KEYWORDS: *Legal, Philosophy, Science, Law, Jurisprudence, Indonesia.*

INTRODUCTION

If we talk about philosophy, we seem to be in a very abstract realm, and legal philosophy is a branch of philosophy; legal philosophy has a strategic function in forming law in Indonesia.

Historically, the times have continued to develop through a hierarchical development that has been accompanied by social changes, where these two things always go hand in hand. A human being whose first basis is free becomes problematic when he lives in a social community. His independence clashed with the independence of other individuals or even with other creatures. So that he continues to be bound by the cosmic order, that is how he should relate to other people, with nature, with himself and with his God. Then came the rules, norms or values that became a universal agreement that must be obeyed. Such things above are the beginning of human civilization, where humans must always uphold the values of humanity and the value of justice. He must hold the values of the rules that apply to human life.

In doing or carrying out our daily lives, without us realizing it, we often do philosophy in general, namely thinking about the good and bad of what we will do or when we work we often think about what we should do and how we do it. From this simple thought, we can say that philosophy is a critical way of thinking about a problem or problem, both regarding what values it contains and how to implement them. In philosophy, the most profound questions are discussed with meaning, foundation,

structure, and the like so that an efficient and universal critical nature is needed.

Here the authors try to discuss a little about:

1. The relationship between philosophy and the philosophy of law and jurisprudence
2. The difference between philosophy and philosophy of law and jurisprudence

The purpose of this research is to see to what extent are the relationships and differences between philosophy, legal philosophy, and legal science so that the characteristics of each of these sciences can be seen.

LITERATURE REVIEW

Philosophy

Since we sit on the bench of further education and universities, we often hear about philosophy; what exactly is philosophy? A person who philosophizes is likened to a person who stands on earth looking up at the stars; he wants to know the nature of his existence, he thinks with a holistic nature (not satisfied if he knows something that something is true). He also thinks with a speculative nature (in his analysis and proof, he can separate which speculation is reliable and which is not), and the main task of philosophy is to establish reliable foundations (Jujun S. Suriasumantri, 2003)

Philosophy or also called the science of philosophy has several main branches of science. The main scientific branches of philosophy include:



- a. Ontology (metaphysics) is the science that deals with the fundamental nature of the existence of things.
- b. Epistemology, namely discussing the knowledge obtained by humans, for example, regarding the origin (source) of where humans obtained the knowledge, what is the measure of the truth of the knowledge obtained by humans, and the composition of the knowledge that humans have obtained.
- c. Axiology or the science of values is a part of philosophy that discusses the nature of things explicitly.
- d. Moral (ethics) is a science that discusses customs or habits in life that contain good values.

The definition of philosophy in the Big Indonesian Dictionary is

- 1) Knowledge and inquiry with reason regarding the nature of all that exists, its causes, origins, and laws.
- 2) The theory underlies the nature of the mind or activity or means science with a core of logic, aesthetics, metaphysics, and epistemology.

The famous philosopher Plato (427 - 347 BC) defines philosophy as a science that is interested in reaching the original truth, Then Aristotle (382 - 322 BC) defines philosophy as a science that includes truth and contains knowledge in it; metaphysics, logic, rhetoric, ethics, economics, politics, and aesthetics.

In general, the definition of philosophy is a science that wants to achieve the essence of the original truth with the characteristics of its thinking, which include:

- 1) Rational, methodical, systematic, coherent, and integral,
- 2) Macro and microcosmos
- 3) Are sensory and non-sensory.

The essence of the truth sought from philosophy is only from the point of view that is only seen by the senses. He also thinks with nature (no longer believes in the truth about the nature of life and life, not only in theory but also in practice.

Philosophy of law

Philosophy of Law According to Gustaff Radbruch is a branch of philosophy that studies the truth law. Meanwhile, according to Langmeyer: Philosophy of Law is a philosophical discussion of law. Anthoni D'Amato terms Jurisprudence or legal philosophy, which is often connoted as fundamental research and an abstract understanding of the law; then, Bruce D. Fischer defines Jurisprudence as a study of the philosophy of law. This word comes from Latin, which means wisdom (prudence)

regarding the law (Juris), so that grammatically it means the study of the philosophy of law.

In simple terms, it can be said that the philosophy of law is a branch of philosophy, namely the philosophy of behaviour or ethics, which studies the nature of law. In other words, legal philosophy is a science that studies law philosophically, so the object of legal philosophy is law, and the object is studied in depth to the core or basis, which is called essence.

Purnadi Purbacaraka & Soerjono Soekanto mention nine legal meanings, namely:

- (1) Science, namely knowledge that is systematically arranged based on the power of thought.
- (2) Discipline, which is a teaching system about the reality or the symptoms encountered.
- (3) Norms are guidelines or benchmarks for appropriate or expected attitudes or behaviour.
- (4) Legal order, namely the structure and process of the legal norms that apply at a particular time and place and are in written form.
- (5) Officers, namely individuals who are closely related to law enforcement (law enforcement officers)
- (6) Ruler's decision, which is the result of the discretionary process
- (7) Government Process, namely the process of reciprocal relations between the main elements of the state system
- (8) The attitude of steady action or regular behaviour, namely behaviour that is repeated in the same way, which aims to achieve peace
- (9) The fabric of values, namely the fabric of abstract conceptions of what is considered good and bad.

Legal philosophy studies law speculatively and critically, meaning that legal philosophy seeks to examine the value of statements that can be categorized as law;

- Speculatively, the philosophy of law occurs by asking questions about the nature of law.
- Critically, the philosophy of law seeks to examine existing ideas about law, seeing their coherence, correspondence and function.

Furthermore, Prof. Dr H. Muchsin, SH. In his book, Overview of the Philosophy of Law explains by dividing the definition of philosophy with law separately. Philosophy is defined as an effort to think seriously to understand everything and the most profound meaning. The law is concluded, as a rule, both written and unwritten, regulates the behaviour of humans in society, in the form of orders and



prohibitions whose existence is enforced by strict and objective sanctions from the authorities in a country.

According to Soetikno, the philosophy of law is looking for the nature of the law, and he wants to know what is behind the law, looking for what is hidden in the law, he investigates the rules of law as a value judgment, he gives an explanation of values, postulates (basics) to its fundamentals, it seeks to reach the roots of the law.

According to Satjipto Raharjo, Legal philosophy studies the fundamental questions of law. Questions about the nature of law, about the basis for the binding force of law are examples of such fundamental questions. Legal philosophy can work on legal materials on such a basis, but each takes an entirely different angle of understanding. Positive legal science only deals with a particular legal system and questions the logical consistency of its principles, regulations, fields and legal system.

According to Lili Rasjidi, the Philosophy of law seeks to create an "ethical world that becomes a background that cannot be touched by the five senses" so that legal philosophy becomes a normative science, as is the case with legal, political science. Legal philosophy tries to find a legal ideal that can be a "legal basis" and "ethical" for the implementation of a favourable legal system in a society (such as the grundnorm which has been described by German legal scholars who adhere to schools such as Neo Kantianism).

The authors do not question which definition is the most correct or most appropriate; in this case, the authors present several opinions of experts so that this paper is richer in treasures, and there is a comparison for the reader, critically the author places the philosophy of law as the embodiment of law formation carried out by lawmakers in our country.

Legal Studies

Legal discipline, by Purbacaraka, Soekanto, and Chidir Ali, is defined as a legal theory but in a broad sense, which includes legal politics, legal philosophy, and legal theory in a narrow sense or legal science. Legal philosophy is not included as a branch of law but as part of legal theory or legal discipline from this field.

Legal science is knowledge of human issues, knowledge of what is right and what is not correct according to human dignity. Law is a branch of formal science about positive law.

In the discussion of legal science, there is an extensive scope, including philosophy, sociology, history, and analytical components of legal theory. Legal science means every careful and weighty thought about all levels of legal life, as long as this thought reaches beyond the limits of solving a concrete problem, so legal science includes all kinds

of natural and well-thought-out generalizations in the field of law.

According to Satjipto Rahardjo, Legal science is a science that seeks to examine the law. Legal science covers and discusses all matters related to law. Legal science is the object of law itself. Such is the breadth of the problem covered by this science that it has provoked people's opinion that "the boundaries cannot be determined".

Furthermore, according to J.B. Daliyo, Legal science is a science whose object is the law. Thus, legal science will study all the ins and outs of the law, for example, regarding the origin, form, principles, systems, types of distribution, sources, development, function and legal position in society. Legal science as a science that has a legal object examines the law as a symptom or phenomenon of human life anywhere in the world from any time. A person who wants to know the law in depth really needs to study the law from birth, grow and develop from time to time so that the history of law plays a significant role in this matter.

Bernard Arief Sidharta argues that the understanding of Legal Science used by Satjipto is almost the same as the understanding of Legal Theory in a broad sense and Legal Theory in a narrow sense used by Bruggink. This case is reinforced by the sentence, "in English, it is called jurisprudence".

According to Paul Scholten, Legal Science is actually a field of study that examines the law that applies as a quantity. Meanwhile, Mochtar Kusumaatmadja stated that law could be the object of various sciences with different approaches to talk about legal sciences. Meanwhile, according to Arief Sidahrta, Legal Science is a science that collects, describes, interprets and systematizes favourable laws that apply in a particular society or country, namely the conceptual system of legal rules and legal decisions whose important parts are favourable by the bearer of legal authority in society or the country concerned.

Similarities and Differences in Philosophy, Philosophy of Law, and Law.

Philosophy is a science that aims to investigate the true nature through the Philosophy of Law, a science that studies law philosophically. Legal Science is actually a field of study that examines the law that applies as a magnitude Theory is an opinion expressed by someone about a general principle that becomes the basis or guidelines of science. The law is all the rules, both written and unwritten. It is made or recognized by the state as a guide to the behaviour of the people. They have strict and objective sanctions for those who violate them. The legal theory consists of legal principles that serve as guidelines in formulating a legal product. The law



can be implemented in the practice of community life. They are the embodiment of the will of the government of the State Administration regarding the law that applies in its territory; and the direction in which the law is developed, the rule of law is a rule made officially by the state authority binding everyone. The authorized state apparatus can impose its enforcement. Its validity can be maintained by implementing and applying the law from the rules that have been made on the rule of law in concrete events.

From the beginning of the discussion on Philosophy, Philosophy of Law and Legal Science, it can be concluded about the Relationships and Differences between the three Sciences, namely as follows.

1. Equality:

- The three sciences seek the best formulation to investigate the object as entirely as possible down to its roots.
- It gives an understanding of the relationship or coherence between the events we experience and tries to show the cause and effect.
- Want to provide a synthesis, which is a view that goes hand in hand with one another
- It has a particular method and system in its description.
- To provide an explanation of reality entirely arising from human desire [objectivity].
- It is the essence of objective thinking carried out by proving through specific methods related to science as a means of research.

2. Difference:

- The material object (field) of philosophy and legal philosophy is universal (general), namely, everything that exists (reality), while the material object of legal science (scientific knowledge) is specific and empirical.
- Philosophy and philosophy of law are carried out in an atmosphere of knowledge that emphasizes the power of speculation, criticism, and supervision, while research in law must be conducted through a trial and error approach.
- Philosophy and philosophy of law are more to the experience of everyday reality, while the science of law is discursive, which describes the truth of something logically.
- Philosophy and philosophy of law provide a final, absolute, and profound explanation to the fundamental [primary cause] while the science of law shows the causes that are not so deep, closer, secondary [secondary cause].

CONCLUSION

Philosophy, legal philosophy and legal science are branches of science that have the same

characteristics in problem-solving systematics. Namely, by inviting people to think about cause and effect in doing something so that various views can be obtained with different systematic thoughts on a problem that is the same in other words, these three sciences ask us as humans to be able to think critically, realistically and objectively so that the results can be justified. However, not all of the characteristics of these three sciences have similarities; these three sciences also have differences that make their science even more interesting. The differences between them in philosophy and philosophy of Object Science are universal, such as how the world crime rate can increase and the causes? From this question, universal results that are not limited to one area can be obtained. Of course, the proof is by making a poll about which crimes often occur on earth so that the numbers or percentages can be confident. However, when discussing legal science, the question is difficult to answer because it is not necessarily the same in one place as elsewhere, for example, if asked about theft, there is a classification regarding the theft, both the age of the perpetrator, the motive of the possible actions of the perpetrator. It just makes someone a perpetrator who cannot be categorized as a thief, like in Saudi Arabia where when someone steals an apple because he is hungry, then he cannot be punished because he was struggling to defend his life, but in other areas stealing still stealing, whatever the reason Stealing is still an illegal act.

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IMPACT OF SOCIAL SERVICES PARTICIPATION OF UNDERGRADUATE STUDENTS ON THEIR ACADEMIC ACHIEVEMENT

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ABSTRACT

The objectives of the study were to investigate the impact of i) social services participation undergraduate students on their academic achievement; ii) social services participation undergraduate boys students on their academic achievement, and iii) social services participation of the undergraduate girls students on their academic achievement. A sample of 80 undergraduate students of Gangadhar Meher University, 40 each from participants and non-participants students were selected randomly. Out of which 20 each from boys and girls undergraduate students were participants groups and 20 each from boys and girls undergraduate students were from non-participants groups. Information Inventory on Social Service Participation Test was used for data collection and average academic achievement SGPA score of undergraduate students given by university was adopted for accessing the academic achievement of students. The 't' test revealed that i) there was no impact of social service on academic achievements of undergraduate students. Academic achievement of both social service participant and non-participant undergraduate students were similarly; ii) there was no impact of social service on academic achievements of participant and non-participant undergraduate boys students'. Academic achievement of both social service participant and non-participant boys undergraduate students' were same line; and iii) there was no impact of social service on academic achievements of participant and non-participant undergraduate girls students. Academic achievement of both social service participant and non-participant girls undergraduate students' were same line.

KEY WORDS: Social Services, Participation, Under Graduate, Academic Achievement

INTRODUCTION

In our formal education system both curricular and extracurricular experience gain by the students for achieving social and national goal is the central aim of education. It is very much essential to provide such types of experience to students by engaging them with some extracurricular activities. It is the only way to develop a socially accepted personality of all individuals. There are different activities but not mandatory for students such as voluntary works perform by students in educational institution developing their social as well as national aims. At present extracurricular activities organising in institution such as NSS, Scout, JRC, NCC etc. decreasing the anti-social behaviour of the student is the greater achievement of education. It is not only beneficial for the student to develop a socially desirable behaviour, rather societies also benefited by it. It decreases the chances of dropout

of the student, explores interest among towards humanities, higher self- esteem, and also develops social interactions as well as some for making students into a complete social being.

RATIONALE OF THE STUDY

A critical analysis of various studies conducted on social services participation of undergraduate students showed positive impact of co-curricular activities on academic achievement (Wilson, 2009; Steven, 2012; Bashir, 2012; Izam, 2015; Singh, 2017; Nasir et al., 2018), professional ability (Dhanmeher, 2014) and leadership behaviour (Ahmed et al., 2015; Singh, 2017) of students at secondary level. The attitude of boys and girls as well as urban and rural secondary schools students' towards participation in co-curricular activities differs significantly (Ghosal, 2016). Now a day extracurricular activities such as social services



have been a parameter of students' quality development. It has great importance in achieving social and national goals. A least number of attempts has made towards impact of

OBJECTIVES

1. To study the impact of social services participation of undergraduate students on their academic achievement.
2. To study the impact of social services participation of undergraduate boys students on their academic achievement.
3. To study the impact of social services participation of the undergraduate girls students on their academic achievement.

HYPOTHESES

- (i) There exists no significant difference between social service participation of undergraduate students on their academic achievement.
- (ii) There exists no significant impact of social service participation of undergraduate boys' students on their academic achievement.
- (iii) There exists no significant impact of social service participation of undergraduate girls' students on their academic achievement.

METHODOLOGY

Design

The investigator was used Ex-post facto research design in the present study as the objectives of the study was to examine the impact of participation in social services of undergraduate students on their academic achievement and social service participation of students is a naturally occurring phenomenon.

social services participation of undergraduate students on their achievement, as it is an innovative attempt towards nation building for which the present study has been undertaken

Sample

A sample of 80 undergraduate students of Gangadhar Meher University, 40 each from participants and non-participants students were selected randomly. Out of which 20 each from boys and girls undergraduate students were participants groups and 20 each from boys and girls undergraduate students were from non-participants groups.

Tools

Information Inventory on Social Service Participation test developed by investigator was used for data collection and average academic achievement SGPA score of undergraduate students given by university was adopted for accessing the academic achievement of students. The content validity of the test was ascertained by the help of expert judgement and reliability co-efficient of the test was .91.

RESULT

As can be seen in Table 1 there found out no significant of difference between social service participation (participant vs non-participant) undergraduate students studying in Gangadhar Meher University, Sambalpur on their academic achievements ($t = 0.77, df = 78, P > 0.01$). It can be revealed that there was no impact of social service on academic achievements of undergraduate students studying in Gangadhar Meher University, Sambalpur. Academic achievement of both participant and non-participant undergraduate students were similarly ($M = 7.28 \geq M = 7.16$).

Table-1

Summary of 't' value for social services participant and non-participant students of undergraduate students on their academic achievement (N=80)

Category of Undergraduate Students	Mean	SD	't' values	Levels of Significance
Social Service Participant Student	7.28	1.06	0.77	NS
Social Service non-Participant Student	7.16	0.74		

Not significant at 0.05 level

**Not significant at 0.01 level*

As can be seen in Table 2, there found out no significant of difference between social services participation (participant and non-

participant) undergraduate boys students studying in Gangadhar Meher University, Sambalpur on their academic achievements ($t =$



1.11; $df = 38$; $P > 0.01$). It revealed that there was no impact of social service on academic achievements of participant and non-participant undergraduate boys students' studying in Gangadhar Meher University, Sambalpur.

Academic achievement of both participant and non-participant boys undergraduate students' were same line ($M=7.4 \geq M=7.0$).

Table-2

Summary of 't' value for social services participant and non-participant boys undergraduate students on their academic achievement(N=40)

Category of Undergraduate Students	Mean	SD	't' value	Levels of Significance
Participant boys student	7.412	1.31	1.11	N.S.
Non-participant boys Student	7.004	0.73		

*Not significant at 0.05 level

*Not significant at 0.01 level

As can be seen in Table 3 there found out no significant of difference between social services participation of (participant and non-participant) undergraduate girls students studying in Gangadhar Meher University, Sambalpur on their academic achievements ($t=0.83$; $df = 38$; $P > 0.01$). It revealed that there was no impact of social service on academic

achievements of participant and non-participant undergraduate girls students studying in Gangadhar Meher University, Sambalpur. Academic achievement of both participant and non-participant boys undergraduate students' were same line ($M=7.15 \leq M=7.31$).

Table-3

Summary of 't' value for social services participant and non-participant girl undergraduate students on their academic achievement(N=40)

Category of Undergraduate Students	Mean	SD	df	't' value	Level of Significance
Participant girls student	7.15	0.75	38	0.83	NS
Non-participant girls student	7.31	0.74			

*Not significant at 0.05 level *Not significant at 0.01 level

MAJOR FINDINGS

1. There was no impact of social service on academic achievements of undergraduate students. Academic achievement of both social service participant and non-participant undergraduate students were similarly.
2. There was no impact of social service on academic achievements of participant and non-participant undergraduate boys students'. Academic achievement of both social service participant and non-participant boys undergraduate students' were same line.
3. There was no impact of social service on academic achievements of participant and non-participant undergraduate girl students. Academic achievement of both social service participant and non-participant girls undergraduate students' were same line.

DISCUSSION AND CONCLUSION

The findings revealed that social services have no impact on academic achievement of participant and non-participant undergraduate students. It shows that both participant and non-participant undergraduate students have been secured satisfactory grades. Participation of undergraduate students in social services has motivated to achieve their goals as well as service for mankind. Whereas, non-participant undergraduate students focusing on achieving educational goals. Students' participation in social services does not hamper in their academic progress because students are engaging social services after the class and leaser time. They used holidays for their social services. However, it can be concluded that social service participant undergraduate students and non-participant undergraduate students were not different in their cognitive development as well as academic achievement.



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AN EVALUATION OF OBJECTIVE VISUAL OUTCOMES AND SUBJECTIVE VISUAL EXPERIENCE AFTER BILATERAL IMPLANTATION OF TORIC INTRAOCULAR LENSES

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ABSTRACT

To compare objective visual outcomes and subjective visual experience after bilateral implantation of toric intraocular lenses. A prospective observational study was performed on 216 eyes of 108 patients treated between 2016 to 2020 for Cataract with astigmatism (cylinder ≤ -4.00 Diopters). The 216 consecutive eyes that had undergone for bilateral cataract surgery with phaco and implantation of Toric Intraocular lens. Refractive predictability, change in mean spherical equivalent refraction, postoperative uncorrected visual acuity (UCVA), and subjective visual outcome were compared at 1 month following surgery. Pre operatively 216 eyes of 108 patients had visual acuity between 1mFC to 6/18. After implanted toric IOL 166 patients have 6/6 visual acuity and 49 patients have 6/9 visual acuity and 1 patients have 6/12 visual acuity. The p-value was <0.0000001 which is <0.05 , i.e. statistically significant when testing with two different pre-operative astigmatism of Subjective test reading and post-operative astigmatism of Subjective test reading in patients with astigmatism between 1D-4D. In subjective questioner patient show rating between 7 to 10 out of 10, this shows satisfaction for distance & near vision after implantation of toric intraocular lens. Overall patients were satisfied with visual performance because of less amount of refractive power.

KEY WORDS: PRE OP: Pre-Operative, POST OP: Post-Operative, IOL: Intraocular lens

INTRODUCTION

Cataract, or clouding of the crystalline lens in the eye, is presently the foremost form of visual impairment in the biosphere and surgery to remove cataracts is now the utmost communal surgical procedure in the developed world, undertaken by ophthalmologists.¹ The demand for cataract extraction and intraocular lens (IOL) implantation has grown due to enhancements in the healthcare establishment, which has increased life expectancy (Foster, 2000). In addition, visual expectation and task demands are increasing within the older population, particularly with the demands of mobile communication. Since the initiation of intraocular lenses (IOLs) in the 1950's, designs have advanced to not only optimize the spherical power of the eye for distance vision, but also aim to achieve spectacle independence through correction of astigmatism and by increasing the range of clear focus in the presbyopic eye.^{2,3}

MATERIAL & METHODOLOGY

It was a Participatory, Multidisciplinary, observational study conducted at Keshvi eye hospital; Surat with purposive sample of 216 eyes of 108 patients who fulfill the inclusion criteria to evaluate the objective visual outcomes and subjective visual experiences after bilateral implantation of toric intraocular lenses. Study also assesses the predictability and stability of bilateral toric intraocular lens (IOL) implantation in cases of cataract with preexisting astigmatism. In present study Preoperative Assessment includes Patient's Demographic data, detailed history, complete structured 10-item questionnaire, General examination of ocular adnexa, intraocular pressure, visual Acuity, K reading and IOL power calculated with IOLMaster & Ascan. For each eye, the relevant preoperative assessment parameters, including flat and steep K values and the axis of each, was enter into an online toric IOL calculator to determine the axis placement of the IOL and the appropriate IOL model.



For Surgical Preoperatively, initial markings are made with the patient sitting up to avoid cyclorotation. The eye is marked at 0 degree and 180 degree while using a slitlamp, which is equipped with an angle-measuring reticule eyepiece. During surgery, these reference marks is use to determine the desired axis of IOL orientation, which then was marked using Meridian (Axis) marker. Marking was performed with dye or ink; Surgeons are operating superiorly or will place the incision on the steepest axis of astigmatism. The IOL was placed in the capsular bag using the Delivery System. No limbal relaxing incisions or any other surgical procedures was allowed. Surgery on the second eye followed 7 to 30 days after surgery on the first eye.

Postoperative examinations were performed 1 day after implantation of each IOL. All subsequent postoperative examinations were designated 1month after the date of the IOL implantation. At every postoperative examination, toric IOL orientation was determined by examining the eye at the slitlamp and noting the IOL axis, designated by 6 laser marks on the

optic of the IOL. Manifest refraction and monocular uncorrected distance visual acuity (UDVA) and corrected distance visual acuity (CDVA) was examining at 1st month. The subjective questionnaires were again distributed at 1 month.

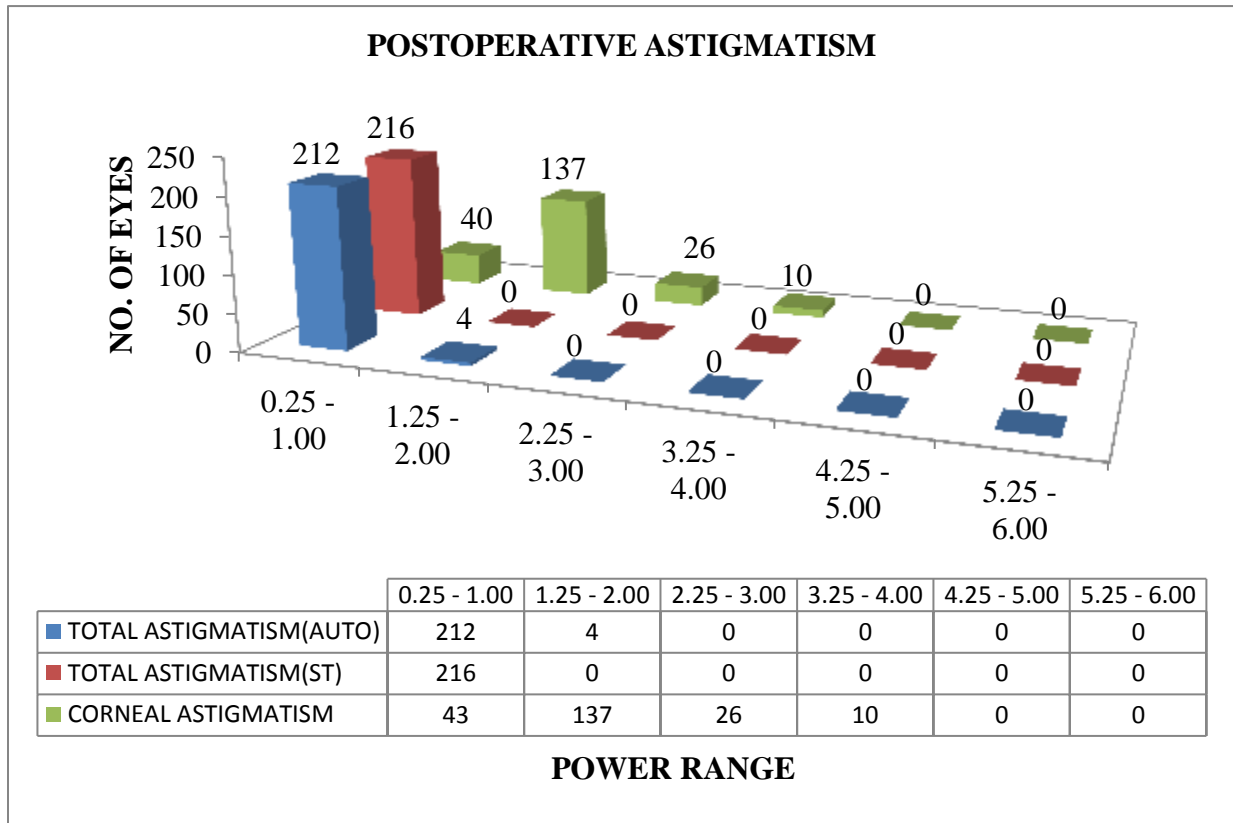
RESULTS

108 patients with both eyes astigmatism and Cataract were agreed for cataract surgery with toric IOL. The population included was 60 males and 48 females subjects ranged from 18 to 85 years of age.

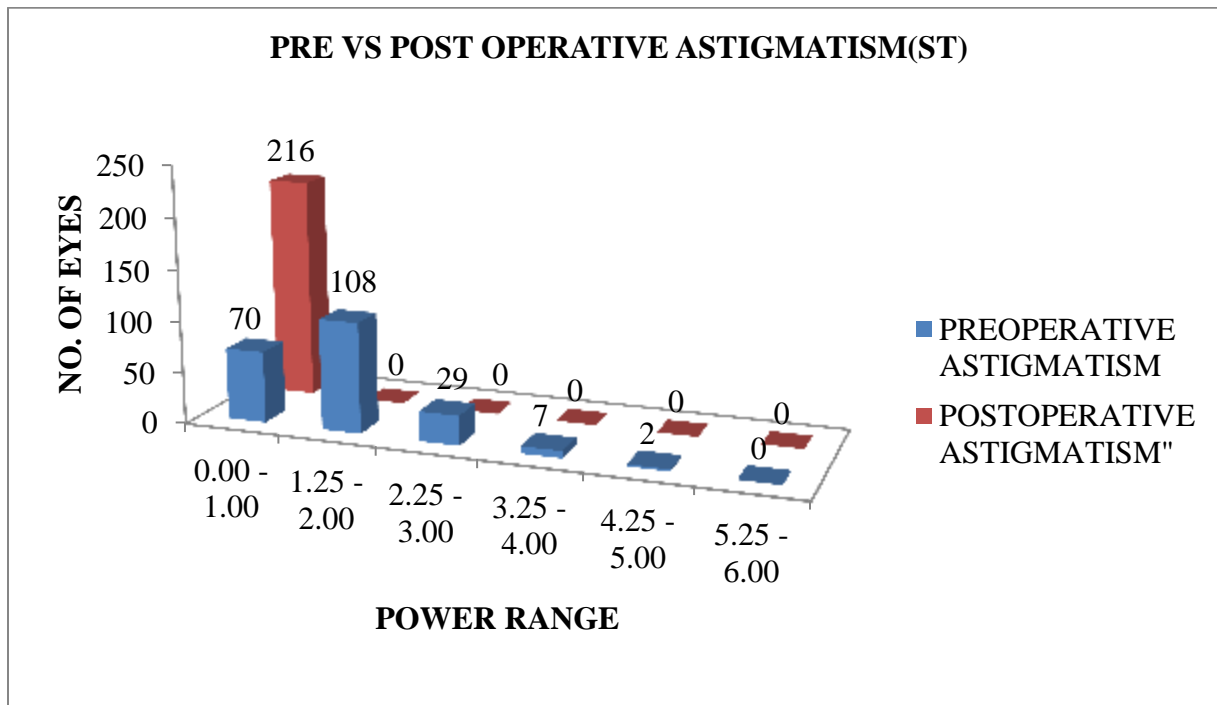
Pre operatively 216 eyes of 108 patients had visual acuity between 1mFC to 6/18. After implanted toric IOL 166 patients have 6/6 visual acuity and 49 patients had 6/9 visual acuity and 1 patients have 6/12 visual acuity. There was no significant difference between pre and post K-reading. But post-operative visual acuity was better and there was no residual astigmatism because it was corrected by implantation of toric IOL.

Demographic and Preoperative parameters in astigmatic eyes that underwent cataract surgery with Toric intraocular lens implantation	
Parameter	Toric IOL (n= 108 patients, 216 eyes)
Male/female (%)	44/56
Age (Y)	59.39
Sphere (D)	-0.3495
Cylinder (D)	-1.09954
Mean Spherical Equivalent Refraction (D)	-0.89931
postoperative parameters in astigmatic eyes that underwent cataract surgery with Toric intraocular lens implantation	
Parameter	Toric IOL (n= 108 patients, 216 eyes)
Sphere (D)	-0.03
Cylinder (D)	-0.02
Mean Spherical Equivalent Refraction (D)	-0.04

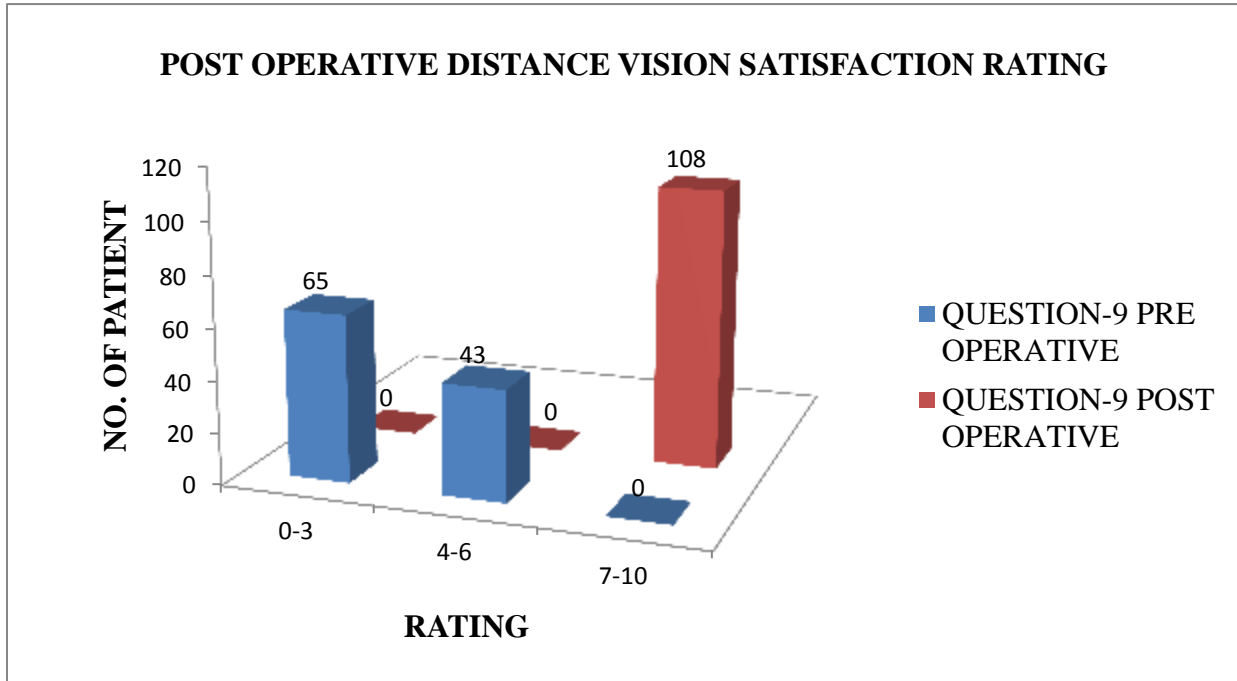
Table : I Pre and Post Operative Refractive Error



Graph: I Post-operative Astigmatism



Graph: II Pre VS Post-operative Astigmatism (Subjective Test)



Graph: III Post-operative Distance vision Satisfaction Rating

The p-value was <0.0000001 which is <0.05 , i.e. statistically significant when testing with two different pre-operative spherical equivalent reading and post-operative spherical equivalent reading in patients with cataract.

The p-value was <0.0000001 which is <0.05 , i.e. statistically significant when testing with two different pre-operative astigmatism of Subjective test reading and post-operative astigmatism of Subjective test reading in patients with astigmatism between 1D-4D.

The results indicate that phacoemulsification and posterior chamber toric IOL implantation is an effective option to correct pre-existing astigmatism in cataract surgery. In subjective questioner patient show rating between 7 to 10 out of 10, this shows satisfaction for distance & near vision after implantation of toric intraocular lens.

CONCLUSION

Present study summaries that the implantations of binocular toric IOL in astigmatic patients were

effective option to correct pre-existing astigmatism in cataract surgery with implantation of toric IOL.

There was no significant difference between pre and post K-reading. But post-operative visual acuity is better and there is no residual astigmatism because it was corrected by implantation of toric IOL. Overall patients were satisfied with visual performance because of less amount of refractive power. Patient also grade high satisfaction visual rating in post-operative subjective visual experience.

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A COMPARATIVE STUDY ON VISUAL OUTCOMES IN MYOPIC ASTIGMATIC REFRACTIVE ERROR CORRECTION BY CUSTOMIZED FEMTOSECOND LASER AND MECHANICAL MICROKERATOME

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ABSTRACT

To compare the visual outcomes in myopic astigmatic refractive error correction by Customized femtosecond laser and Mechanical Microkeratome LASIK. This was a prospective observational study, performed on 200 eyes of 100 patients treated between 2016 to 2020 for myopia and astigmatism (sphere ≤ -6.00 Diopters; cylinder ≤ -6.00 Diopters). The first 100 consecutive eyes that had LASIK flaps created with a femtosecond laser were compared with the first 100 consecutive eyes that had flaps created with a mechanical microkeratome. All eyes received wavefront-guided LASIK treatments performed with a VISX S4 IR Advanced CustomVue excimer laser (AMO). Refractive predictability, change in mean spherical equivalent refraction, postoperative uncorrected visual acuity (UCVA), and best spectacle-corrected visual acuity (BSCVA) were compared at 1 day, 1 week and 1 month following surgery. The refractive accuracy was the same for both groups. At all follow-up, the percentage of eyes that achieved a postoperative UCVA of 20/20 or better was significantly higher in the femtosecond laser group than in the mechanical keratome group. In addition, a higher percentage of eyes in the femtosecond laser group achieved a postoperative UCVA of 20/16 at 1months. Creating LASIK flaps with the femtosecond laser resulted in faster visual recovery and better UCVA.

INTRODUCTION

LASIK is the world's most popular refractive surgery technique since the technique was presented at the beginning of the 1990s, its popularity has spread because of the unquestionable advantages it has one the surface techniques: rapid visual recovery, relative absence of pain, ease of performing the treatment and greater refractive stability (partial only) where hyperopic treatments are concerned. LASIK is commonly referred to as laser eye surgery or laser vision correction, is a type of refractive surgery for the correction of myopia, hypermetropia, and astigmatism. The LASIK surgery is performed by an ophthalmologist who uses a laser and microkeratome or Femtosecond Laser to reshape the cornea in order to improve visual acuity. For most patients, LASIK provides a permanent alternative to eyeglasses or contact lenses. Major side effects include halos, starbursts, night-driving problems, and eye dryness.

Compared to a flap created with a mechanical microkeratome, a femtosecond laser flap offers several potential advantages: more uniform flap thicknesses,

customizable flap diameter and hinge position, smoother stromal beds, and lower rates of flap creation complications. However, mechanical keratomes have a long record of success of safety, and they cost significantly less than a femtosecond laser.

A few published reports have compared these two competing techniques, but the results of these studies have been mixed. Some studies have shown equivalency between the femtosecond laser and the mechanical keratome whereas other studies have reported improved visual results with the femtosecond laser. The current study was designed to determine whether use of different flap creation techniques yields differences in visual outcomes and visual recovery.

PATIENTS AND METHODS

Data for this study were taken from patient records extracted between 2016 to 2020 from Ivue Laser Vision centre and Keshvi Eye Hospital clinical database. For both the mechanical microkeratome and femtosecond laser groups, the first 100 consecutive eyes that met the following conditions were included in the study:



1) Stable pre-operative spherical refractive error ≤ -6.00 D with Astigmatism ≤ -6.00 D 2) target refraction of emmetropia, 3) primary wavefront-guided ablation, and 4) 1-month examination data available. The femtosecond laser flaps were created using an IntraLase femtosecond laser, and the mechanical microkeratome flaps were created using the disposable blades in Amadeus II Microkeratome. The femtosecond laser flap diameter varied from 9.0 to 9.5 mm, with a programmed ablation depth between 90 μ m. The 140- μ m head was used for the mechanical microkeratome. Patients were educated about both methods of flap creation and selected the one they preferred for their procedure. The wavefront-guided treatments were performed using a VISX STAR S4 IR Advanced

CustomVue excimer laser (AMO) with an optical zone of 6.0 mm and transition zone of 8.0 mm. Postoperative examinations were conducted at Ivue Laser vision centre and Keshvi eye hospital. Demographic and other preoperative parameters were analyzed to ensure that the groups were well matched. Refractive predictability, change in mean spherical equivalent refraction, postoperative uncorrected visual acuity (UCVA), and loss of best spectacle- corrected visual acuity (BSCVA) were compared at 1-day, 1-week and 1-month follow-up.

Visual acuity was measured at each visit using a Snellen vision chart.

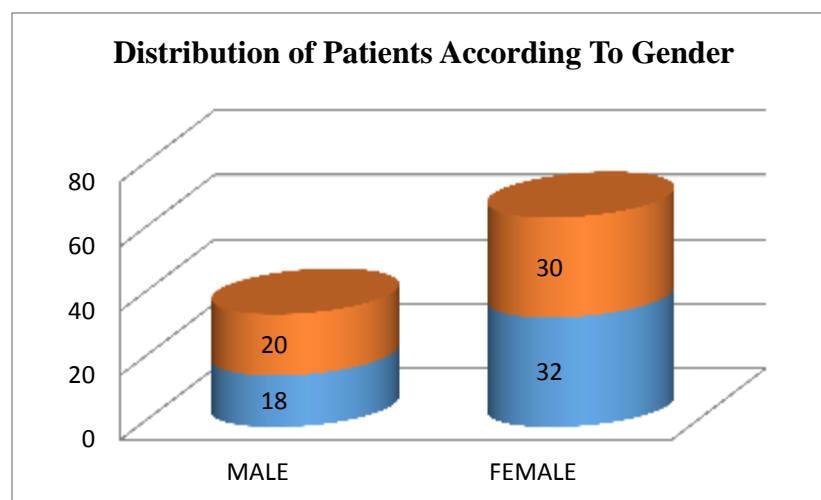
Tabulations of data and statistics were performed with SSPS 7.0 and Microsoft Office Excel 7.0.

Table 1

Demographic and Preoperative parameters in eyes that underwent LASIK flap creation with a Femtosecond Laser or Mechanical Microkeratome			
Parameter	Mean \pm Standard Deviation (Range)		P Value*
	Femtosecond Laser (n=100 eyes)	Mechanical Microkeratome (n=100 eyes)	
Male/female (no. of patients)	18/32	20/30	0.3796
Age (y)	25.22 \pm 4.81	24.82 \pm 5.64	0.0019
Sphere (D)	-2.765 \pm 1.16	-3.17 \pm 1.60	0.1748
Cylinder (D)	-1.12 \pm 0.35	-1.18 \pm 0.37	0.4142
Mean Spherical Equivalent Refraction (D)	-3.324 \pm 1.69	-3.76 \pm 1.69	0.1332
Pupil size (mm)	6.3 \pm 1.1	6.3 \pm 1.0	0.2095

*For continuous variables, a two-sample t test was used to measure significance. For categorical variables, a chi-square test was used. All assumptions were met for these respective tests.

Fig 1: Gender Distribution





RESULTS

The two groups were well matched in terms of gender, sphere, cylinder, mean spherical equivalent refraction, and pupil size (Table 1). The mean preoperative sphere was -2.765 D for the femtosecond laser group and -3.17 D for the mechanical microkeratome group; the mean cylinder was -1.12 D for the femtosecond laser group and -1.18 D for the mechanical microkeratome group. A small difference in mean age was noted between groups (femtosecond laser: 25.22 years; mechanical keratome: 24.82 years), but this difference was not deemed clinically relevant. Both groups achieved similar refractive predictability results. Both groups also achieved similar levels of refractive stability, with eyes in both groups remaining close to Plano from the 1-day follow-up through the 1-month follow-up. Although refractive results were

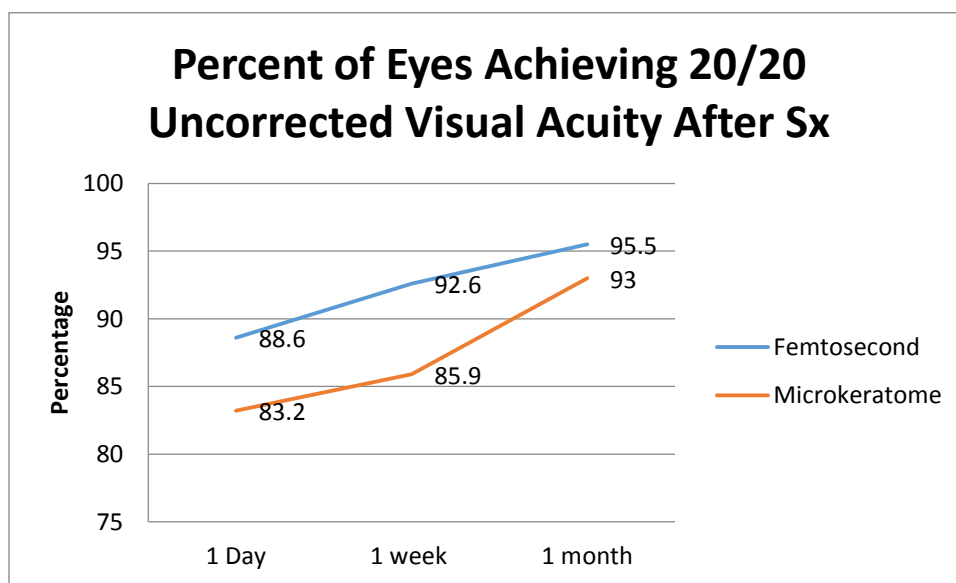
similar, a significant difference was observed in the percentage of eyes that achieved a postoperative UCVA of 20/20 or better (Table 2). At 1-day follow-up, 88.6% of eyes in the femtosecond laser group achieved UCVA of 20/20, compared to 83.2% of eyes in the mechanical microkeratome group ($P=.0005$). Both groups showed improvement with continued follow-up, but a higher percentage of eyes in the femtosecond laser group achieved 20/20 UCVA at each time point (Fig 2). Fewer eyes in the femtosecond laser group experienced a loss of two or more lines of BSCVA in the early postoperative period. At 1-week postoperative, only 0.9% of eyes in the femtosecond laser group had lost two or more lines of BSCVA, compared to 2.8% in the mechanical microkeratome group. By 1 months postoperatively, however, both groups showed similar results.

Table 2

Percent of Eyes Achieving 20/20 Uncorrected Visual Acuity After LASIK With the Femtosecond Laser or Mechanical Microkeratome				
	Percentage of Eyes			
Time Duration	Femtosecond Laser	Mechanical Microkeratome	Difference	P Value*
1 Day	88.6	83.2	5.4	0.0005
1 Week	92.6	85.9	6.7	<0.0001
1 Month	95.5	93.0	2.5	0.0166

*Chi-square test.

Fig 2: Percentage of eyes that achieved uncorrected visual acuity of 20/20 or better was higher for the femtosecond laser group at all follow-ups.





DISCUSSION

As this study shows, the femtosecond laser significantly improves both the speed of visual recovery as well as UCVA through 1 month postoperative. This improvement occurred despite similar refractive predictability in both the femtosecond laser group and mechanical microkeratome group. Thus, the improved UCVA was not due to residual refractive error in the mechanical microkeratome group.

Although this difference disappeared by 1 month postoperative, the initial disparity further indicates a faster visual recovery when flaps are created with the femtosecond laser.

Given that most patients prefer LASIK over surface ablation in part because LASIK offers a more rapid improvement in vision, the enhanced speed of visual recovery after a femtosecond laser procedure represents a significant advantage. Speed of visual recovery also has implications for when patients can return to work after surgery, particularly for patients who have jobs that require excellent vision. The results of previous studies comparing the outcomes of femtosecond laser LASIK with mechanical keratome procedures have been varied. A study by Patel et al¹ examined 21 patients who had a femtosecond laser flap created in one eye and a mechanical microkeratome flap created in the other eye, and they found that the method of flap creation did not affect visual outcomes. Similarly, Lim et al² (n=55 eyes) and Kezirian and Stonecipher³ (n=375 eyes) concluded that use of a femtosecond laser failed to produce any statistically significant difference in postoperative UCVA at 3 months postoperative. In contrast, Durrie and Kezirian⁴ (n=102 eyes) reported that the femtosecond laser-created flaps produced a statistically better UCVA. Several reasons for these different results are possible, including the relatively small sample sizes of these studies, which may be partially responsible for their lack of agreement.

Although the Prospective nature of the current study is a drawback, the study design also has several strengths. The large sample size (200 well-matched eyes) allowed for statistically valid conclusions; limiting the study to consecutive treatments minimized selection bias. Also, the limits on preoperative myopia and cylinder reduced the confounding influence of unpredictable clinical results that can occur when treating higher levels of ametropia. In addition, all treatments were performed between 2016 to 2020 using the latest technology and the same wavefront-guided ablation profile, therefore the study is representative of

modern clinical practice. Because this study was intentionally confined to eyes with moderate preoperative myopia and cylinder, it cannot predict results for hyperopia or high myopia treatment. However, clinical reasoning suggests that similar results would be expected for a wide range of ametropia. Although it is not readily apparent why the femtosecond laser improves visual outcomes, several possible explanations include the more predictable planar flap, more accurate repositioning of the flap at the end of the procedure, and/or improved smoothness of the stromal bed. Particularly for procedures that use complex ablation patterns, such as wavefront-guided treatments, minimizing stromal bed imperfections and maximizing the predictability of the flap dimensions may help in achieving optimal results.

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GEOGRAPHICAL STUDY OF MALE AND FEMALE LITERACY IN AHMEDNAGAR DISTRICT, MAHARASHTRA STATE, INDIA

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ABSTRACT

The study of population characteristics is very important in terms of planning as the future depends on the study of these populations, mainly health facilities, educational, transport, market planning, various things depend on the population. The period from 1961 to 2011 census has been taken to study of literacy in Ahmednagar District. The literacy is shown in percentage as well as temporal analysis of male and female litters. The literacy rate in Ahmednagar district is increasing from 1961 to 2011 census periods. It is lowest literacy in Jamkhed, then in Shevgaon Pathardi tehsil, the highest literacy rate is in Nagar tehsil. The study was conducted with two main objectives Study temporal Analysis and difference between Male and Female Literacy in Ahmednagar District.

KEY WORDS: *Literacy, Male- Female, Temporal, Analysis, Human Resources.*

INTRODUCTION

There are two main types of resource natural resources and human resources^[14,15]. Population is one of the basic factors in which the resources and economic development of a nation depends^[3,6]. Also the geographical division of the population or its growth and decline is closely related to the composition of the population and their characteristics, the level of development of these major elements and resources. Population Studies Human Resources can be just as problems as growing human's population and resources are closely related to human socio-economic development. The study of the interrelationship between population growth and economic development. They should take into account that economic development is a matter of great concern. Proper utilization of the country's resources and increase in income and raising of living standards is called development. If countries do not have sufficient or sufficient manpower to utilize the available resources, then population growth is complementary to economic development. For all these things, it is very important to study the population characteristics. In this population characteristic, mainly population distribution, population growth, population density and

population literacy business are studied. Literacy is considered to be one of the most important of the above factors Literacy is considered to be the most important factor to identify human resources^[5,7,13]. Therefore, this study is a sequel to the study of literacy among farmers. In this study session, a temporal analysis has been done for the study of literacy from the years 1961 to 2011. Literacy is basic elements to economic development of a region or a country and depends social development. Although there is socio-economic inequality in Ahmednagar district, the inequality of literacy. It is important to study this social factor, so these subjects have been selected.

STUDY AREA

The present study Ahmednagar district has been selected as a study area. It extends between 18° 20' and 19° 59' north latitudes and 73° 40' to 75° 43' east longitudes (Map.1) located in part in the upper Godavari basin. The district is very dense in shape and length of 200 km. a width of 210 km. This study region is divided into there are three physical divisions namely, first Sahyadri moutons ranges i.e. Kalsubai, Adula, Baleshwar and Harishchandragad, second Plateau third plains area. The Godavari, Bhima River is



Graph no 01: Population Literacy (1961 to 2011 Census Periods)

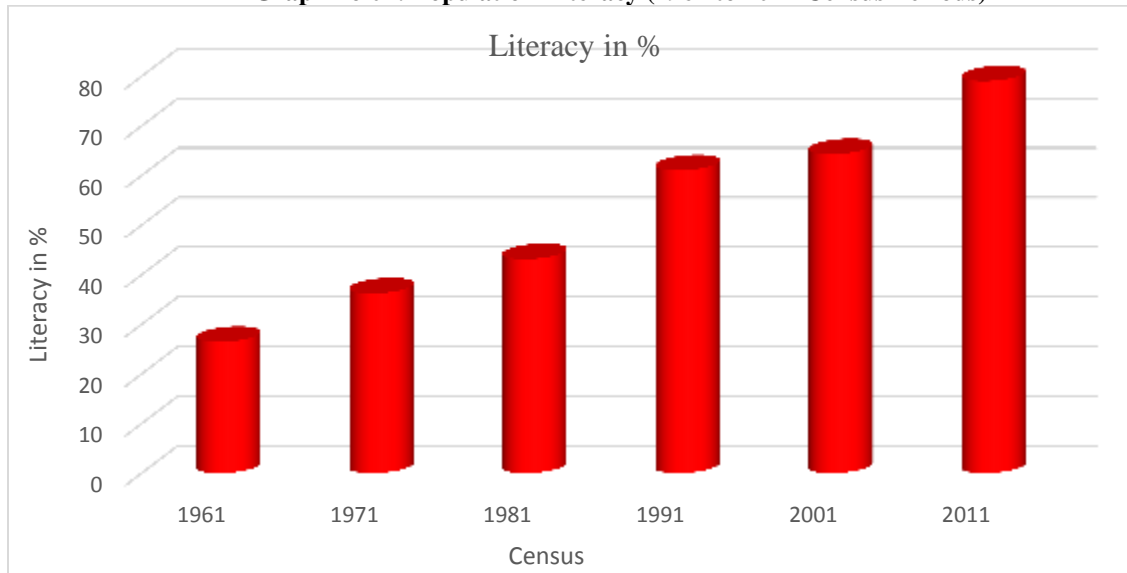


Table Number 1: Literacy Rate in Ahmadnagar District (Census year 2011)

Sr. No.	Name of the Tehsils	Literacy in Percentages (Census year 2011)		
		Total	Male	Female
1	Akole	74.86	84.09	65.5
2	Sangamner	79.96	87.58	71.98
3	Kopargaon	79.84	87.58	71.68
4	Rahata	82.08	88.72	75.13
5	Shrirampur	82.12	89.27	74.8
6	Nevasa	78.51	86.53	70.05
7	Shevgaon	73.94	84.15	63.42
8	Pathardi	74.74	84.98	63.85
9	Nagar	86.35	91.47	80.9
10	Rahuri	79.74	87.42	71.65
11	Parner	75.64	84.23	66.78
12	Shrigonda	76.25	84.09	67.88
13	Karjat	74.11	82.57	64.98
14	Jamkhed	72.62	82.31	62.26
District Average		77.91	86.07	69.35

Source: District Census Handbook of Ahmadnagar District 2011.

Considering the entire Ahmednagar district, the highest overall literacy is in Nagar tehsils with 86.35 percentages literacy, followed by Rahata tehsil and Shrirampur tehsil with 82 percentages or above average population literacy. On the other hand, Jamkhed tehsil

has the lowest literacy rate, followed by Karjat, Akole, Pathardi, Parner, Shrigonda, Shevgaon tehsils. The average literacy rate in this tehsil is between 80% and above 70%. In general, 75% of the total population is literate. This complete information is shown in Table



01 and graph no 02. According to the 2011 census, male literacy rates are highest in nagar tehsils, where 91.47 percentages of the total population are literate, followed by Rahata, Rahuri, Sangamner, Kopargaon etc. In short, out of total literacy, male literacy is highest in Ahmednagar district, Total literacy is 77.91% and male literacy is 86.07%. The average literacy rate of women in Ahmednagar district is 70% which means that the literacy rate of women is much less than the total literacy rate and male literacy. Table number 01 and Graph number 03 show that Ahmednagar district has the highest female literacy rate in Nagar (80.9%) tehsils followed by Rahata tehsils with 75 percent female literacy followed by Rahuri Sangamner, Kopargaon, and Nevasa talukas with 70 percent female literacy. Jamkhed tehsil has the lowest literacy rate of 62.26%, literacy, followed by Pathardi Shevgaon Akole Parner with less than 70 percent literacy. These talukas have lower literacy rate than the average literacy rate of Ahmednagar.

1. Poor level

Table Numbers 02 and 03 are classified according 2011 census to the index value of male and female literacy. As male literacy is more than 70% in Ahmednagar district, there is no poor literacy here in any district. But during this period you can see the literacy of women mainly in seven talukas of Akole, Shevgaon, Pathardi, Parner, Shrigonda, Karjat and Jamkhed. It means that the literacy rate of female in these talukas is less than 70%. In short, literacy

movements are being carried out in these talukas and it is necessary to create awareness about female literacy.

2. Moderated level

Moderate literacy levels are mainly in tehsils with 70 to 85 percent literacy. According to the 2011 census, male literate is mainly at the level of seven tehsils, including Akole, Shevgaon, Pathardi, Parner, Shrigonda, Karjat and Jamkhed tehsils. Male literacy is moderate in this tehsil but female literacy is poor level in this tehsil. In terms of females, the moderate level includes Sangamner Kopargaon Rahata Shrirampur Nevasa Nagar Rahuri tehsil.

3. Progressive level

This level of progressive literacy is mainly found in tehsils with more than 85% literacy. This tehsil has a good male literacy rate, mainly in Sangamner, Kopargaon, Shrirampur, Nevasa Nagar and Rahuri. The main reason for the good level of male literacy in these talukas is the educational development taking place in these areas. But which talukas are not included in the progressive female literacy. In short, in Ahmednagar district less than 85% female literacy. There is a need to increase female literacy in Ahmednagar district. Distribution of Mail Female Literacy in Map Numbers 02 and T03 is shown in 2011 Census as per Tehsil.

Table no 02: Level of Male literacy in Percentages (2011 Census)

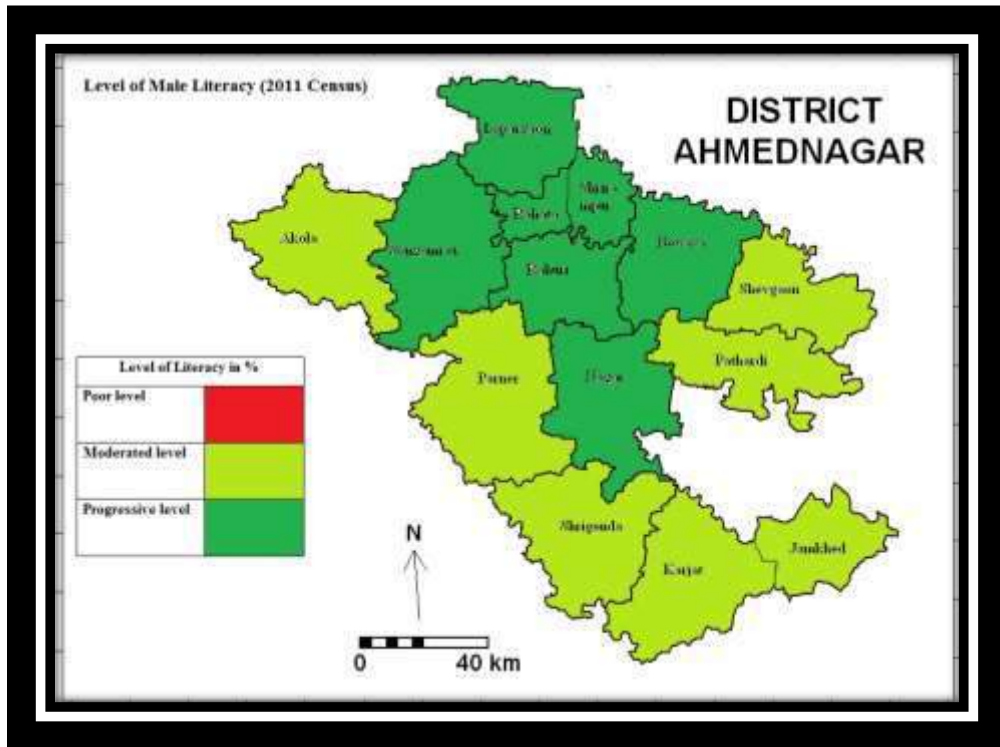
Sr. No	Index Value of Male in %	Level of literacy	Number of Tehsils	Name of the Tehsils
01	55-70	Poor level	00	Nil
02	70-85	Moderated level	07	Akole, Shevgaon, Pathardi, Parner, Shrigonda, Karjat, Jamkhed.
03	More than 85	Progressive level	07	Sangamner, Kopargaon, Rahata, Shrirampur, Nevasa, Nagar, Rahuri

Table no 03: Level of Female literacy in Percentages (2011 Census)

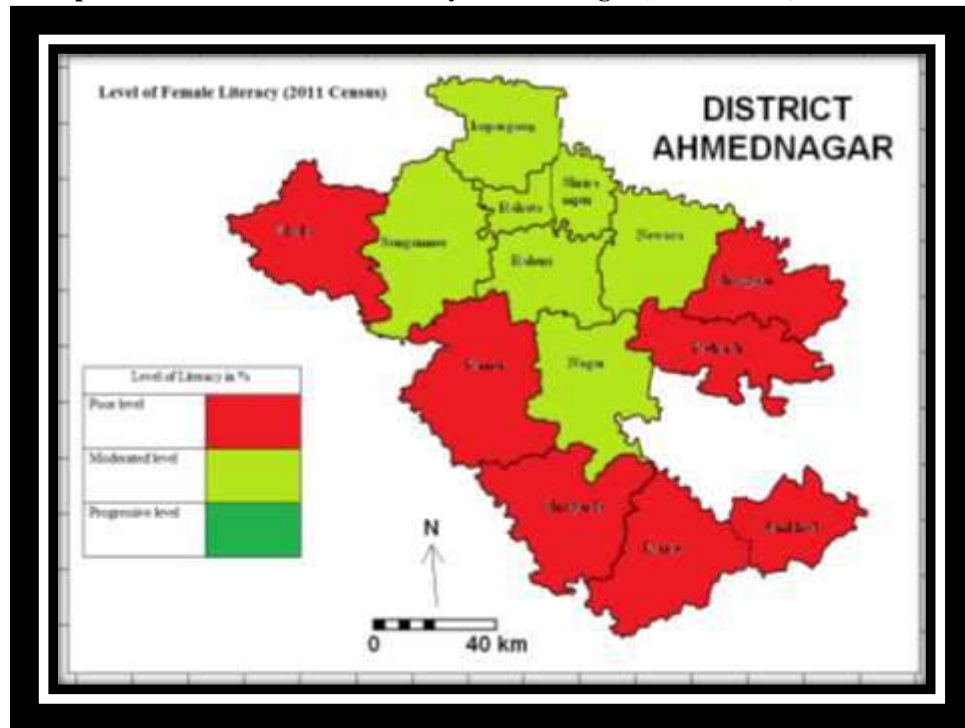
Sr. No	Index Value of Female in %	Level of literacy	Number of Tehsils	Name of the Tehsils
01	55-70	Poor level	07	Akole, Shevgaon, Pathardi, Parner, Shrigonda, Karjat, Jamkhed
02	70-85	Moderated level	07	Sangamner, Kopargaon, Rahata, Shrirampur, Nevasa, Nagar, Rahuri
03	More than 85	Progressive level	00	Nil



Map No 02: Level of Male Literacy in Percentages (2011 Census)

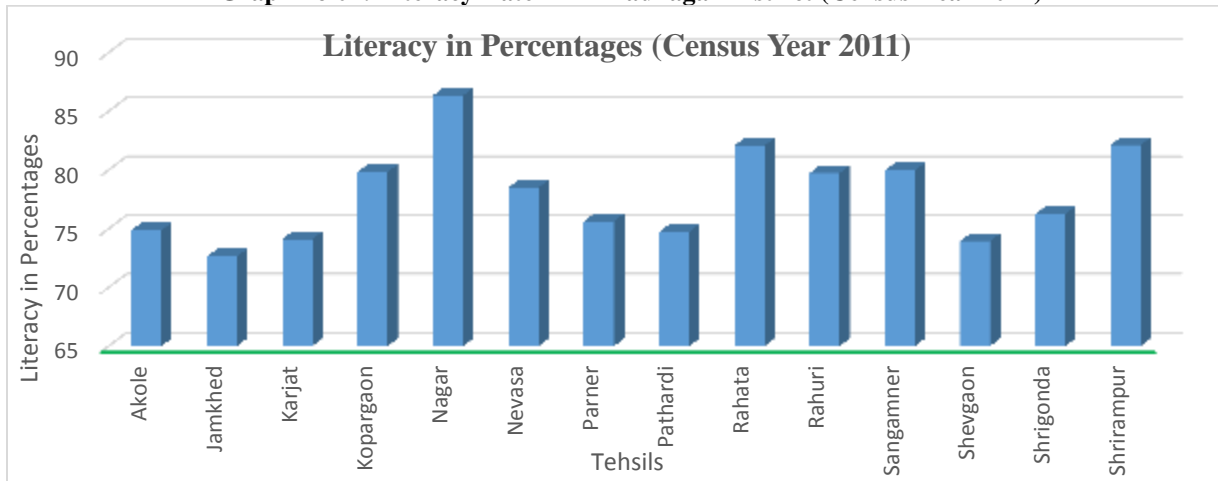


Map No 03: Level of Female Literacy in Percentages (2011 Census)

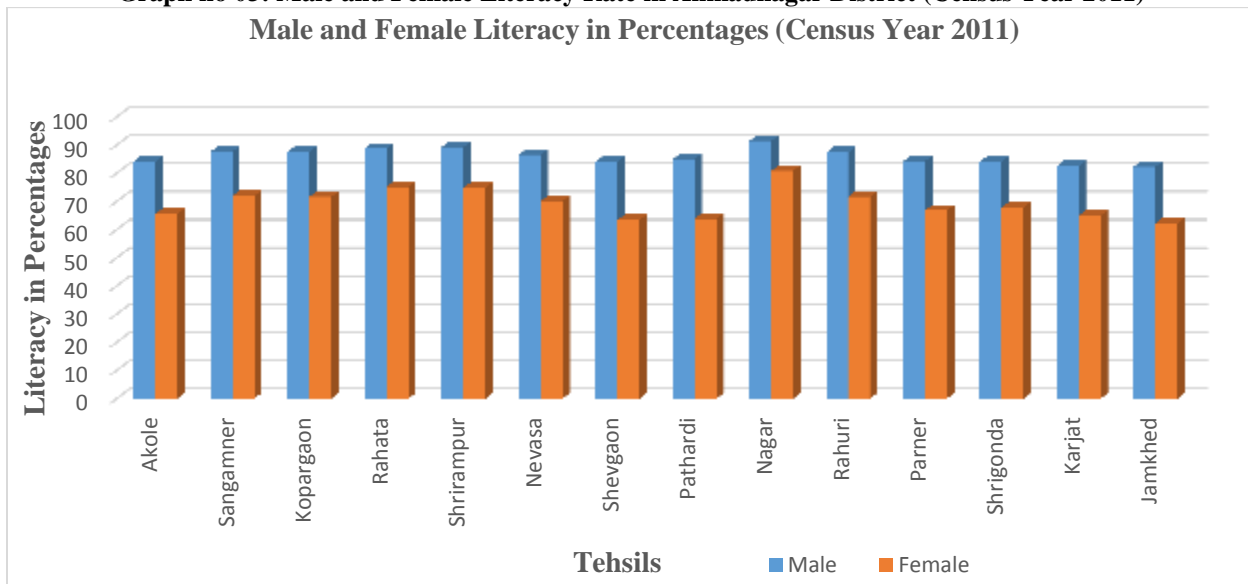




Graph no 02: Literacy Rate in Ahmadnagar District (Census Year 2011)



Graph no 03: Male and Female Literacy Rate in Ahmadnagar District (Census Year 2011)



CONCLUSION

From the above research it is clear that you can see the overall literacy rate in Ahmednagar district increasing gradually from 1961 census year to 2011 census year. Considering the total literacy in Ahmednagar district, the highest literacy rate is in Nagar tehsil of Ahmednagar district with an average literacy rate of 77.91%. The average literacy in this Ahmednagar district is less than that in Jamkhed, Karjat, Shrigonda, Parner, Shevgaon and Akole tehsils. In tehsils where literacy rate is less than 70%. At the same time, considering the literacy of female, the total

literacy of women in Ahmednagar district is 70.35%. The female literacy rate of Jamkhed, Karjat, Shrigonda, Parner, Akole, Shevgaon and Pathardi talukas is much less than the total average female literacy rate.

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PREPARATION OF FLOATING MICROSPHERES OF RITONAVIR BY EMULSION SOLVENT DIFFUSION TECHNIQUE

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ABSTRACT

In recent years scientific and technological advancements have been made in the research and development of rate-controlled drug delivery system by overcoming physiological adversities such as short gastric residence time (GRT) and unpredictable gastric emptying time (GET). Several approaches are currently utilized in the prolongation of GRT, including floating drug delivery system (FDDS), also known as hydrodynamically balanced system (HBS), swelling and expanding system, polymeric bioadhesive system, modified shape system, high density system, and other delayed gastric emptying devices. The aim of work was to improve the oral bioavailability of the poorly water soluble drug by incorporating in floating drug delivery system. For better absorption and enhanced bioavailability of some drug, prolongation of retention time of the dosage form in the stomach is essential. In the present study Ritonavir was selected as model drug as it is the prototype antiviral agent used to treat various types of herpes infections having short half-life (2.5-3.3 hours) and low bioavailability (15-30%) in the upper part of GIT hence, it is suitable for gastro-retentive system. Ethyl cellulose was used to achieve the controlled delivery of drug from polymer matrix and emulsion solvent diffusion technique is selected for formulation. The particle size of floating microspheres shows different size for different formulation; this may be due to variation in the composition of formulations. The mean particle size for all formulations was in the range of 135.103 – 229.418 µm.

KEYWORDS: Gastric residence time (GRT), Hydrodynamically balanced system (HBS), Ritonavir, Ethyl cellulose, Gastric emptying time (GET), Microspheres.

INTRODUCTION

Oral drug delivery has been known for decades as the most widely used route of administration among all the routes. Oral delivery of drugs is the most preferable route of drug delivery due to ease of administration, patient compliance and flexibility in formulation. Pharmaceutical product designed for oral delivery which are currently available in the market mostly immediate-release or conventional release, which maintains the drug concentration within the therapeutically effective range only, when administered several times a day.¹

The design of an oral controlled drug delivery system (DDS) should be primarily aimed at achieving more predictable and increased bioavailability of drugs. Several difficulties are faced in designing controlled release system for better absorption and enhanced bioavailability. Various approaches have been made to prolong the retention time of dosage form in the stomach. Retention of drug delivery system with prolonged overall gastrointestinal transit time and slow but complete release in the stomach improves bioavailability of drugs that have site specific absorption from stomach.²

Furthermore, the relatively brief gastric emptying time (GET) in humans, which normally averages 2-3 hours through the major absorption zone (stomach or upper part of the intestine), can result in incomplete release from the drug delivery system (DDS) leading to decreased efficacy of the administered. Thus, control of placement of a DDS in a specific region of the gastrointestinal (GI) tract offer numerous advantages, especially for drugs exhibiting an absorption window in the GI tract or drugs a stability problem. Overall, the intimate contact of the



DDS with the absorbing membrane has the potential to maximize drug absorption and may also influence the rate of drug absorption. These considerations have been tried to increase residence time and prolong drug release. One such method is the preparation of a device that remains buoyant in the stomach contents due to its lower density than that of the gastric fluids.³

The gastric emptying of a multiparticulate floating system would occur in a consistent manner with small individual variation. On each subsequent gastric emptying, sink particles will spread out more uniformly over a large area of absorption sites, increasing the opportunity for drug release profile and absorption in a more or less predictable way. Moreover, since each dose consists of many subunits the risk of dose dumping is reduced.

Floating microspheres are gastro-retentive drug delivery systems based on non-effervescent approach. Hollow microspheres are in strict sense, spherical empty particles without core. These microspheres are characteristically free flowing powders consisting of proteins or synthetic polymers, ideally having a size less than 200 micrometer. Solid biodegradable microspheres incorporating a drug dispersed or dissolved throughout particle matrix have the potential for controlled release of drugs. Gastro-retentive floating microspheres are low-density systems that have sufficient buoyancy to float over gastric contents and remain in stomach for prolonged period. As the system floats over gastric contents, the drug is released slowly at desired rate resulting in increased gastric retention with reduced fluctuations in plasma drug concentration.⁴

MATERIALS

The following materials were used for the research work. All chemicals used were of best quality available. Ritonavir, Ethyl cellulose, Triethyl Citrate was obtained as kind gift sample from Wockhardt Pvt. Ltd, Aurangabad. Dichloromethane & Conc. HCL were purchased from Research Lab Ltd, Poona. Polyvinyl alcohol received from Qualigens fine chemicals, Mumbai. & Tween 20 received from Loba Chemie Pvt, Ltd, Mumbai.

METHOD

Preparation of Floating Microspheres of Ritonavir by Emulsion Solvent Diffusion Technique

Floating microspheres containing Ritonavir were prepared using emulsion solvent diffusion technique. For the preparation of floating microspheres, the rate controlling polymer used was ethyl cellulose of different viscosities (50cps and 100cps) in varying concentration (Drug: polymer, 1:1, 1:1.5 and 1:2). Triethyl citrate (TEC) was added as a plasticizer in this formulation in different concentration (10% and 20%). The drug and polymer mixture (1:1, 1:1.5 and 1:2) was dissolved in a dichloromethane (15ml) and plasticizer was added. The above mixture was dropped in a solution of polyvinyl alcohol (0.25%, 200 ml). The resultant solution was stirred with a mechanical stirrer for 1 hour at 500 rpm. The formed floating microspheres were filtered and washed with water and dried at room temperature and stored in a desiccator until further use. The various batches of floating microspheres were prepared as follows.

Table No. 1 Formulation of the floating microspheres of Ritonavir

Sr. No	Formulation code	Drug (Ritonavir) (gm)	Polymer Ethyl Cellulose (gm)		Plasticizer (TEC) (%)
			50 cps	100 cps	
1	A1	1	1	-	10
2	A2	1	1	-	20
3	A3	1	1.5	-	10
4	A4	1	1.5	-	20
5	A5	1	2	-	10
6	A6	1	2	-	20
7	B1	1	-	1	10
8	B2	1	-	1	20
9	B3	1	-	1.5	10
10	B4	1	-	1.5	20
11	B5	1	-	2	10
12	B6	1	-	2	20



EVALUATION OF MICROSPHERES

1. Particle Size Analysis

Particle size analysis plays an important role in determining the release characteristics and floating property. The sizes of floating microspheres were measured by laser diffraction particle size analyzer. Firstly, 1gm of floating microspheres was floated in 200 ml of containing 0.02 % of Tween 20 in aqueous solution and stirred at 37 ± 0.5 °C. Second, particle size distribution was obtained when a laser light passed through the microspheres and then diffracted the intensity in an angular distribution. The data obtained were evaluated using volume distribution diameter (d) values of 10%, 50% and 90%. The mean particle size was then calculated.⁵

2. Percentage Yield

The percentage yield of different formulations was determined by weighing the floating microspheres after drying. The percentage yield was calculated as follows.⁶

$$\% \text{ Yield} = \frac{\text{Total weight of floating microspheres}}{\text{Total weight of drug and polymer}} \times 100$$

3. Drug Entrapment:

The various batches of the floating microspheres were subjected to estimation of drug content. The floating microspheres equivalent to 50 mg of Ritonavir from all batches were accurately weighed and crushed. The powdered of microspheres were dissolved in ethanol (10 ml) in volumetric flask (100ml) and made the volume with 0.1 N HCl. This solution is then filtered through Whatmann filter paper No. 44. After filtration, from this solution accurate quantity (10 ml) was taken and diluted up to 100 ml with 0.1 N HCl. From this solution, accurate volume (2 ml) was pipette out and diluted up to 10 ml with 0.1 N HCl and the absorbance was measured at 254 nm against 0.1 N HCl as a blank. The percentage drug entrapment was calculated as follows.⁵

$$\% \text{ Drug entrapment} = \frac{\text{Calculated drug concentration}}{\text{Theoretical drug concentration}} \times 100$$

4. Scanning Electron Microscopy

From the formulated batches of floating microspheres, formulation (A3) and (B3) which showed an appropriate balance between the buoyancy and the percentage release were examined for surface morphology and shape using scanning electron microscope. Sample was fixed on carbon tape and fine gold sputtering was applied in a high vacuum evaporator. The acceleration voltage was set at 20KV during scanning. Microphotographs were taken on different magnification and higher magnification (600X) was used for surface morphology.

5. Fourier transforms infra-red spectroscopy (FT-IR) analysis

The Fourier transform infra-red analysis was conducted for the analysis of drug polymer interaction and stability of drug during microencapsulation process. Spectrum of pure Ritonavir, Ethyl Cellulose and floating microspheres were recorded.⁵

6. Powder X-ray diffraction

The powder X-ray diffraction pattern of Ritonavir and polymer were obtained using Phillips X-ray diffractometer with a Ni-filtered $\text{CuK}\alpha$ -radiation at a scanning speed of 10^0 /min at 2θ .

7. Floating ability of microspheres

Floating microspheres (50 mg) were placed in 0.1 N HCl (100 ml) containing 0.02% Tween 20. The mixture was stirred at 100 rpm in a magnetic stirrer. The layer of buoyant microspheres was pipetted and separated by filtration at 1, 2, 4 and 8 hours. The collected microspheres were dried in a desiccator overnight. The percentages of microspheres were calculated by the following equation.⁵

$$\% \text{ floating microsphere} = \frac{\text{Weight of floating microspheres}}{\text{Initial weight of floating microspheres}} \times 100$$



8. *In-vitro* release studies

In-vitro release of Ritonavir from floating microspheres was carried out using the USP dissolution test apparatus (Type-I). A weighed amount of floating micro spheres equivalent to 200 mg of drug were filled into a capsule and placed in the basket. Dissolution media used was 900 ml of 0.1 N HCl (pH 1.2) maintained at $37 \pm 0.5^\circ\text{C}$ and stirred at 100 rpm. At predetermined time intervals, 10 ml of sample was withdrawn and replaced with equal amount of 0.1 N HCl (pH 1.2). The collected samples were filtered and suitably diluted with 0.1 N HCl and analyzed spectrophotometrically at 254 nm to determine the amount of drug released in the dissolution medium.

RESULTS

1. Particle Size Analysis

Smaller the microspheres, floating ability will be less and faster will be the release rate of drug from microspheres, While larger the size, floating ability will be more and sustained will be the release of drug.

Table No. 2 Particle size of different batches of floating microspheres

Sr. No	Formulation code	Mean particle size (μm)
1	A1	152.531 \pm 2.85
2	A2	150.579 \pm 3.53
3	A3	135.103 \pm 1.43
4	A4	147.763 \pm 3.12
5	A5	152.873 \pm 2.17
6	A6	152.828 \pm 1.86
7	B1	152.103 \pm 2.16
8	B2	152.977 \pm 3.26
9	B3	148.113 \pm 2.43
10	B4	229.418 \pm 1.24
11	B5	147.965 \pm 1.37
12	B6	150.676 \pm 2.13

2. Angle of repose

Angle repose of floating microspheres was observed in range of $17^\circ.83'$ - $26^\circ.22'$ i.e less than 30 as shown in Table-3. All formulation showed good free floating nature.

Table No. 3 Angle of repose of different batches of floating microspheres

Sr.No	Formulation code	Angle of Repose ($^\circ$)
1	A1	$17^\circ.91' \pm 0.42$
2	A2	$17^\circ.83' \pm 0.61$
3	A3	$19^\circ.66' \pm 0.20$
4	A4	$19^\circ.81' \pm 0.54$
5	A5	$19^\circ.25' \pm 0.48$
6	A6	$20^\circ.26' \pm 0.32$
7	B1	$17^\circ.98' \pm 0.61$
8	B2	$22^\circ.64' \pm 0.52$
9	B3	$20^\circ.52' \pm 0.38$
10	B4	$24^\circ.16' \pm 0.63$
11	B5	$20^\circ.79' \pm 0.59$
12	B6	$26^\circ.22' \pm 0.43$



3. Hausner's Ratio

Hausner's ratio of microparticles was determined by comparing the tapped density to the bulk density. It was ranging from 1.1529-1.2185; i.e. all the formulation showed that they had good flow properties.

Table No. 4 Hausner's Ratio values of different batches of floating microspheres

Sr.No	Formulation code	Hausner's Ratio
1	A1	1.1855 ± 0.023
2	A2	1.1887 ± 0.018
3	A3	1.2051 ± 0.020
4	A4	1.2185 ± 0.016
5	A5	1.1682 ± 0.025
6	A6	1.1529 ± 0.032
7	B1	1.1588 ± 0.028
8	B2	1.16 ± 0.042
9	B3	1.1812 ± 0.031
10	B4	1.2050 ± 0.035
11	B5	1.1837 ± 0.019
12	B6	1.1860 ± 0.043

4. Drug Entrapment Efficiency

The drug entrapment efficiency of different batches of floating microspheres was found in the range of 63 % - 84 % w/w as shown in table 5. Drug entrapment efficiency was decreased with the increased drug concentration and increased with increasing polymer concentration in floating microspheres.

Table No. 5 Entrapment efficiency of different batches of floating microspheres

Sr.No	Formulation code	Entrapment Efficiency (%)
1	A1	74 ± 0.03
2	A2	69.6 ± 0.02
3	A3	84 ± 0.01
4	A4	81.5 ± 0.04
5	A5	73 ± 0.02
6	A6	71.5 ± 0.03
7	B1	72.8 ± 0.03
8	B2	63 ± 0.02
9	B3	79.5 ± 0.04
10	B4	73 ± 0.06
11	B5	78 ± 0.03
12	B6	67 ± 0.06

5. Scanning electronic microscopy:

The size and surface morphology of floating microspheres were examined by scanning electron microscopy as shown in figures. These Image No.1 & 2 illustrating the microphotographs of formulation A3 and B3 at lower and higher magnification.

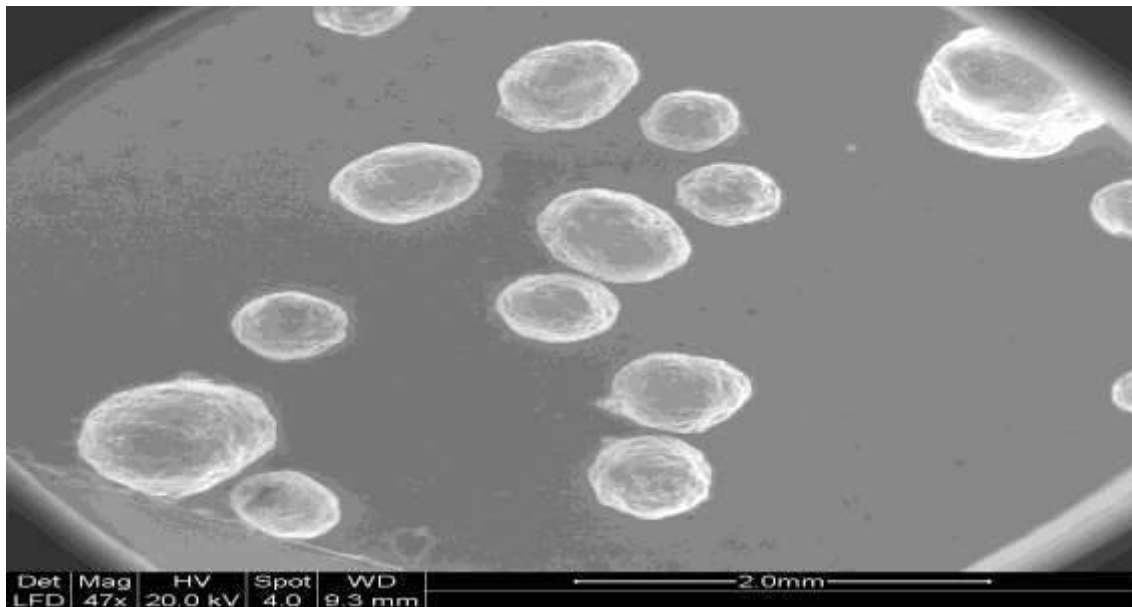


Image No. 1 scanning electron micrograph of formulation A3 at lower magnification

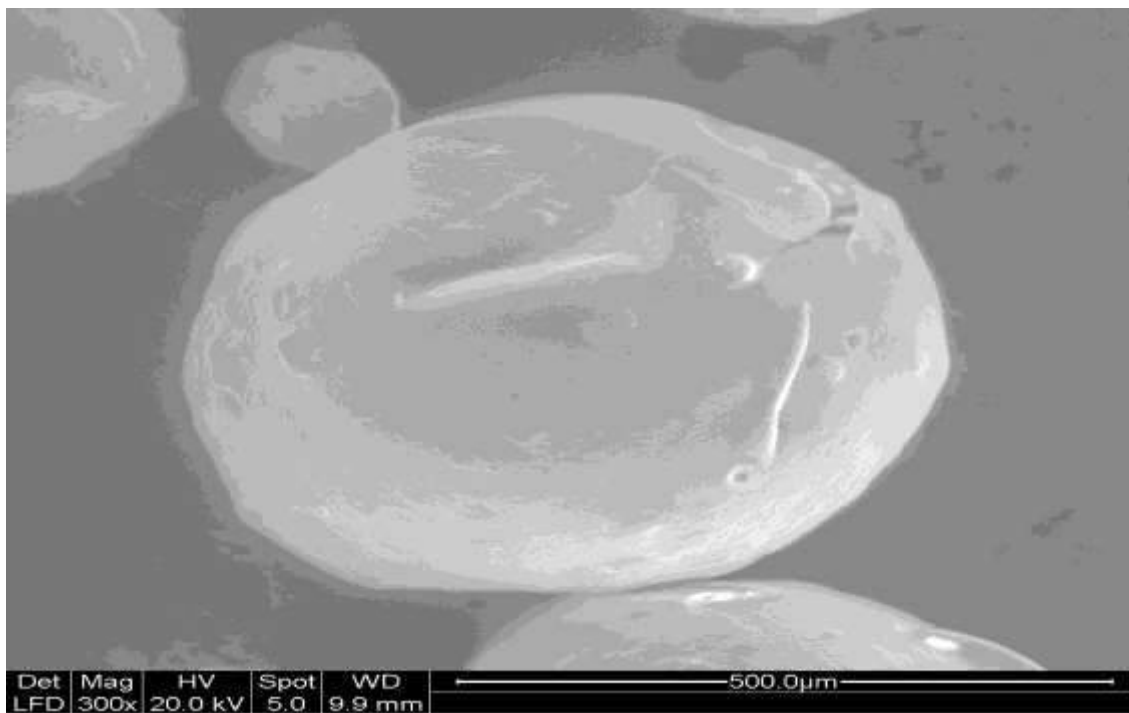
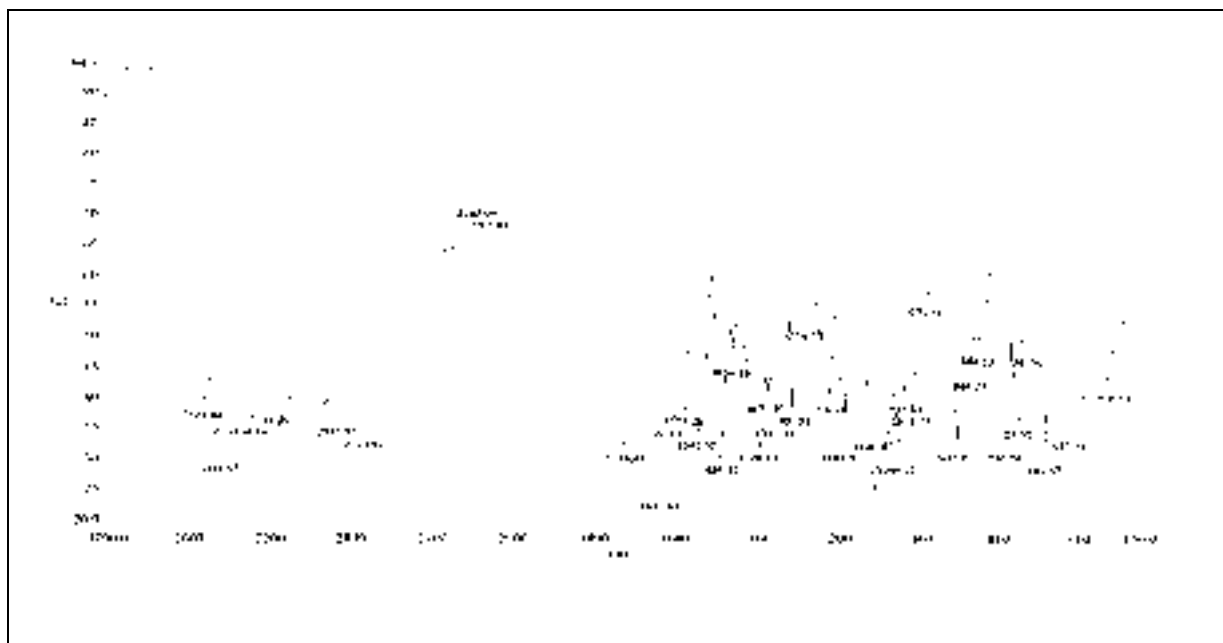


Image No. 2 Scanning electron micrograph of formulation A3 at higher magnification

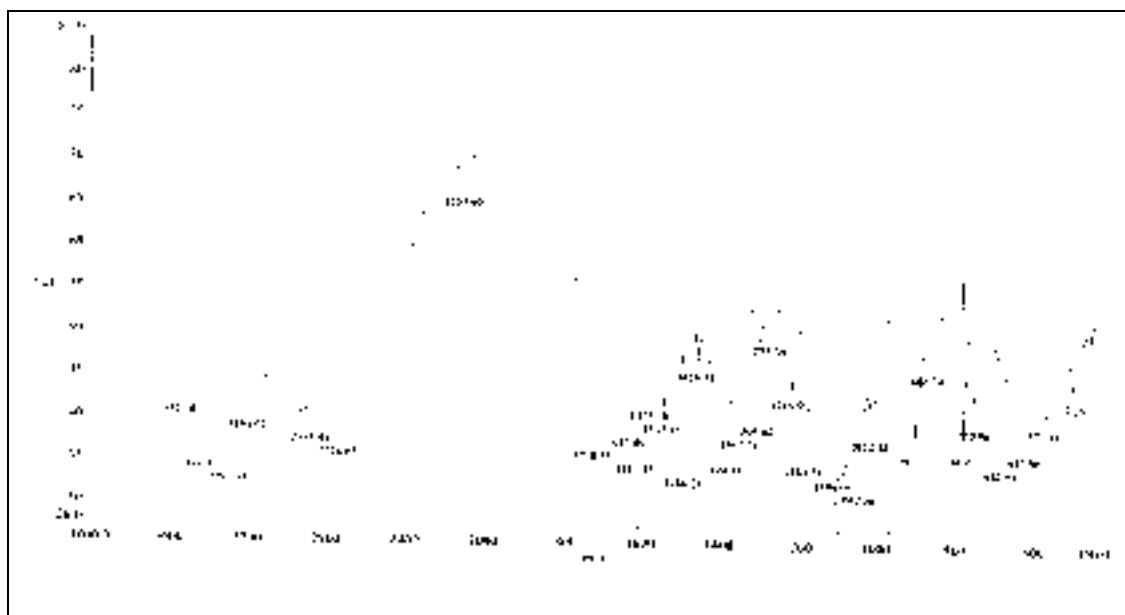


Table No. 6 Fourier transforms infrared spectroscopy (FT-IR) analysis Interpretation of FT-IR

Transition	IR Range (cm ⁻¹)	Absorption wave number		
		Ritonavir	Physical Mixture	Formulation
O-H stretching vibration	3550 – 3200	3299.89	3200.03	3293.34
Aryl alkyl ether	1275 – 1200	1279.33	1279.58	1278.39
C=O stretching in guanine	1717	1718.43	1718.20	1718.59
CH ₂ Scissoring	1485 – 1445	1486.12	1486.49	1486.28



Graph No. 1 FT-IR spectrum of Ritonavir



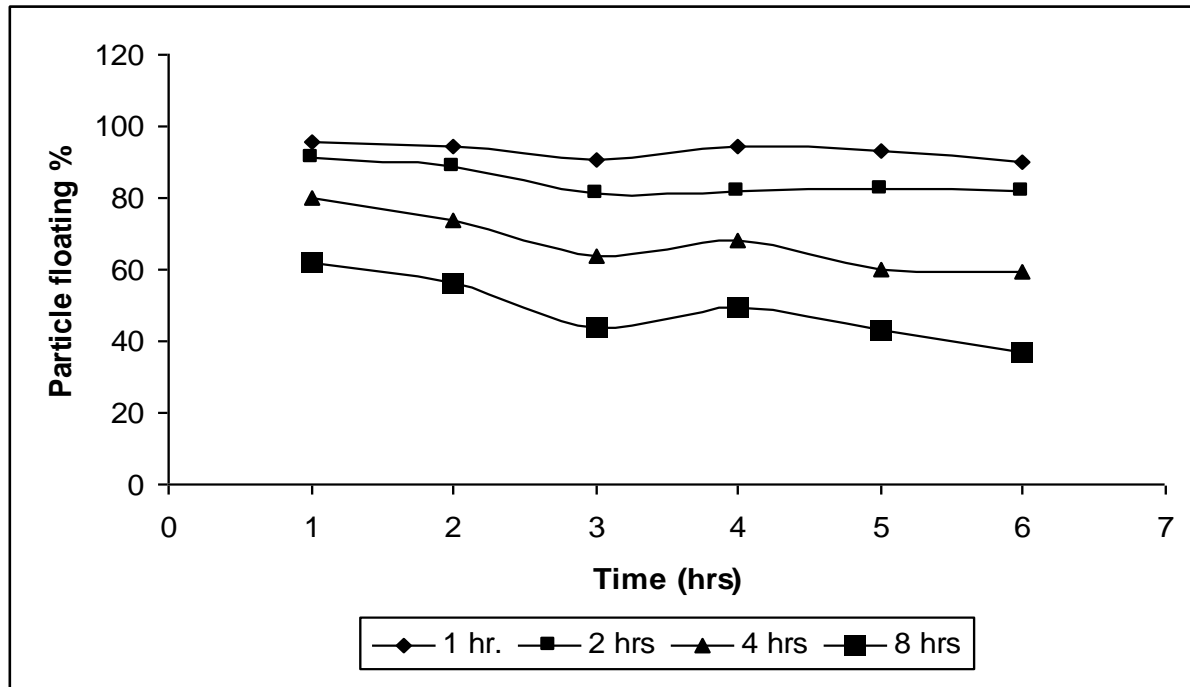
Graph No. 2 FT-IR spectrum of floating microspheres (Batch A3)

6. Floating ability of floating microsphere:

Floating ability of different formulations was found to be differed according to polymer ratio. A1-A6 formulations showed best floating ability (62 – 36.87 %) in 8 hours. B1-B6 formulation showed less floating ability (47.12 - 32.16%) in 8 hours as showed in Table-07

Table No. 7 The percentage floating ability of different batches of floating microspheres

Sr.No.	Formulation code	1 hr.	2 hrs	4 hrs	8 hrs
1	A1	95.62	91	80	62
2	A2	94.33	89	74	56.33
3	A3	90.66	81.03	64	44
4	A4	94.25	82.16	68.27	49.66
5	A5	93.14	82.37	60.07	42.84
6	A6	90.07	81.66	59.67	36.87
7	B1	92.66	87.33	62.47	39.37
8	B2	95.22	82.59	65.09	47.12
9	B3	92.25	77.33	55.17	35.31
10	B4	93.12	78.22	58.27	32.16
11	B5	90.13	76.27	56.66	36.97
12	B6	92.41	81.66	56.71	38.84

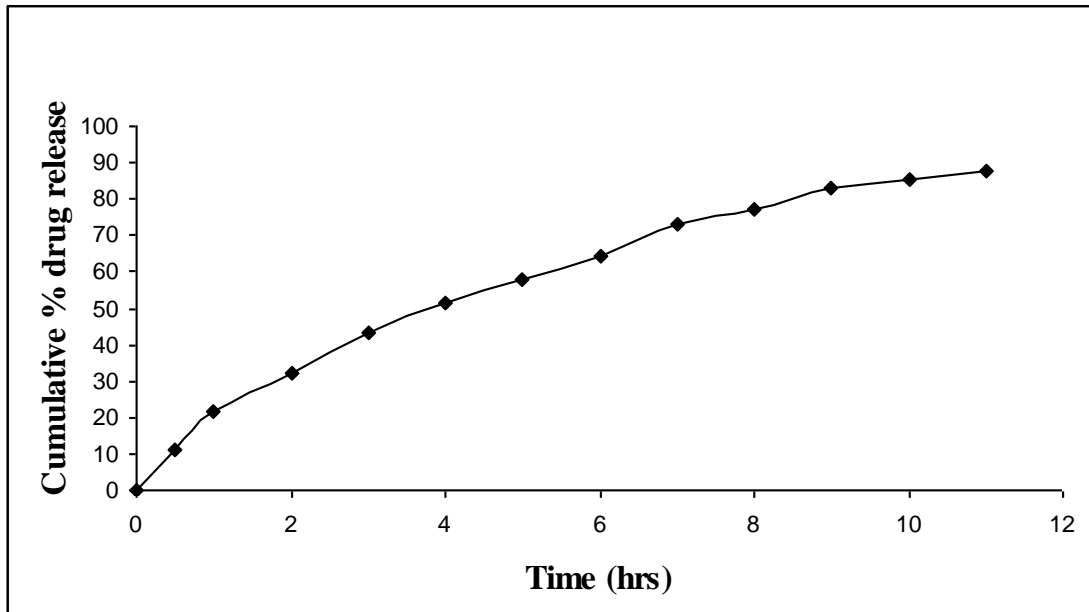


Graph No. 3 Floating behaviour of formulation A1-A6

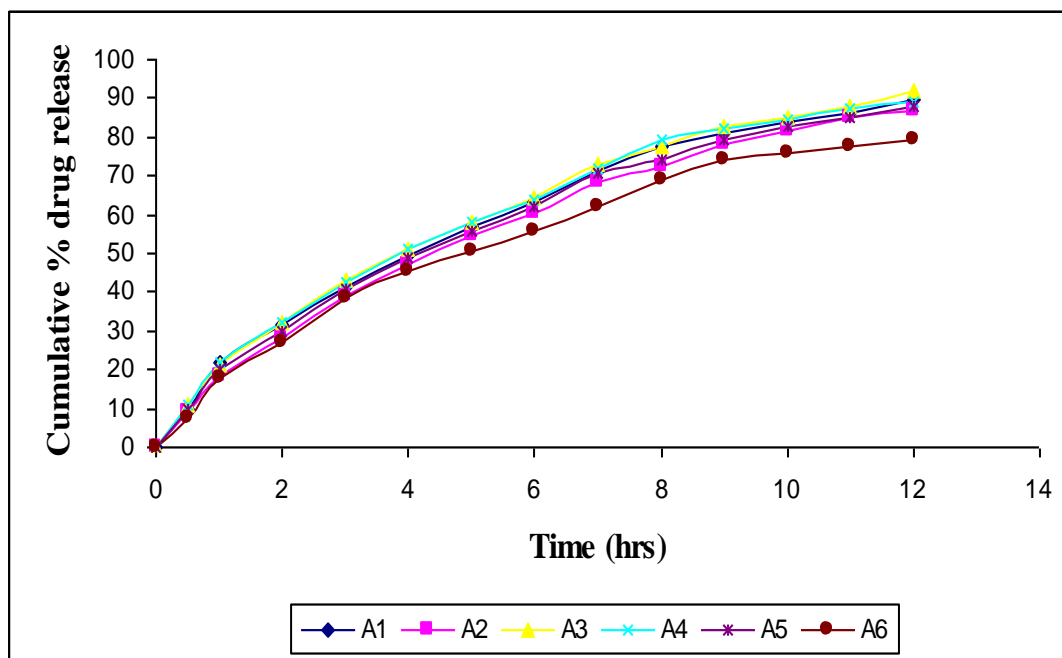
7. In-Vitro drug release study

Table No. 8 *In vitro* dissolution profile of formulation A3 in 0.1 N HCl.

Sr. No.	Time (hrs)	Absorbance at 254 nm	Cumulative % release \pm S.D
1	0	0	0
2	0.5	0.145	10.878 \pm 0.912
3	1	0.251	21.477 \pm 1.263
4	2	0.357	32.193 \pm 1.621
5	3	0.464	43.124 \pm 0.873
6	4	0.543	51.405 \pm 0.945
7	5	0.604	57.993 \pm 1.102
8	6	0.664	64.549 \pm 1.171
9	7	0.745	73.247 \pm 0.759
10	8	0.779	77.388 \pm 0.886
11	9	0.826	82.851 \pm 1.235
12	10	0.841	85.203 \pm 0.935
13	11	0.859	87.868 \pm 0.864
14	12	0.891	91.936 \pm 1.610



Graph No. 4 *In vitro* drug release profile of formulation A3 in 0.1 N HCl.



Graph No. 5 *In vitro* drug release profiles of formulations A1 –A6 in 0.1 N HCl

CONCLUSION

The results obtained from this investigation are interesting and promising. The objective of the present investigation was to improve oral bioavailability of the poorly water soluble drug. For better absorption and enhanced bioavailability of some drug, prolongation of retention time of the dosage form in the stomach is essential. This problem can be solved by preparation of gastro-retentive drug delivery systems. An attempt was made to prepare floating microspheres of Ritonavir using ethyl cellulose. Ideal properties of floating microspheres include



high buoyancy and sufficient release of drug in acidic condition. The prepared formulation (A3) showed best appropriate balance between buoyancy and drug release rate.

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AN OBSERVATIONAL STUDY TO FIND OUT THE DIFFERENCE IN INTRAOCULAR PRESSURE VALUE OVER SILICONE HYDROGEL CONTACT LENSES BY USING NON-CONTACT AND REBOUND TONOMETRY

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ABSTRACT

The aim of this study was to find out the difference in intraocular pressure value over silicone hydrogel contact lenses by non-contact and rebound tonometry. This study included 60 eyes of 30 patients who did not have any ocular or systemic diseases or contraindications to contact lens use. We measured and recorded the IOP values of each patient without and with Silicon hydrogel contact lenses using Non Contact Tonometer and Rebound Tonometer. We compared the mean values and standard deviation of the measurements in each case using the independent t-test. The mean IOP value found with Non Contact Tonometry was 15.90 ± 2.57 mmHg without contact lens and with Contact lens was 15.73 ± 2.50 mmHg. It is found that the p-value 0.8354 which is > 0.05 , thus the difference found is statistically insignificant when measuring IOP without and with contact lenses by Non Contact Tonometry. The mean IOP value found with Rebound Tonometry was 16.00 ± 3.05 mmHg without contact lens wear and with Contact lens was 16.02 ± 2.89 mmHg. It is found that the p-value 0.6858 which is > 0.05 , thus the difference found is statistically insignificant when measuring IOP without and with contact lenses by Rebound Tonometry. Silicone hydrogel soft contact lens does not significantly affect IOP values measured with NCT and Rebound tonometry, and thus Rebound tonometry and non-contact tonometry can be reliably performed over silicone hydrogel CLs.

KEY WORDS: Intraocular pressure, silicone hydrogel contact lens, rebound tonometry, Non contact tonometry

INTRODUCTION

Nowadays, contact lenses are used for many reasons including beauty, removing any discomfort caused by glasses, vision improvement especially for patients with high Ameteropia, high astigmatism, keratoconus, corneal trauma and deformity as well as poor results of refractive surgery. Soft contact lenses are used for cosmetic, therapeutic and diagnostic purposes besides the correction of refractive errors. In addition to their optical indications, soft contact lenses are an effective treatment method for persistent

epithelial defects, recurrent corneal erosions, filamentous keratitis, corneal surface irregularities, corneal abrasions, corneal thinning, bullous keratopathy, thermal and chemical burns, and after refractive surgery and ocular surface reconstruction¹. The frequent removal of contact lenses used for therapeutic purposes in types of corneal diseases affects epithelization and the recovery process negatively¹. In cases where contact lens removal is not desired, frequent measurement of intraocular pressure (IOP) may be needed. In these patients, obtaining accurate



IOP values on contact lenses is significant in terms of follow-up and treatment of the patient².

Measurement of intraocular pressure (IOP) over therapeutic silicone hydrogel soft contact lenses using a non-contact and rebound method of tonometry could be applied in ophthalmologic practice, particularly in patients with corneal decompensation and subsequent bullous keratopathy, post-surgical sutures or exposed suture knots other important indications with corneal pain, and for facilitating healing. The detecting of increased IOP and treatment may help reduce the incidence and prevalence of glaucoma in these patients. The therapeutic silicone hydrogel contact lenses also may aid in sealing leaky wounds after cataract, penetrating keratoplasty or glaucoma filtering surgery. Thus, accurately measuring IOP independently from various corneal factors is gradually gaining importance. The aim of this study was to see the effect of silicone hydrogel soft contact lenses on IOP measurement by Non-Contact Tonometry and Rebound Tonometry.

MATERIAL & METHODOLOGY

This was a prospective, observational study done within a period of 1 year August 2018 to July 2019, in 60 eyes of 30 patients at K.P. Sanghvi Eye Hospital, Surat.

First, we took the IOP measurements of naked eyes with Non-Contact Tonometer (Nidek NT 510) and then with Rebound Tonometer (Icare). Then, we performed the same measurements 30 min after the insertion of SiHy contact lenses. The IOP values of the naked eyes and post lens insertion were measured with Non Contact Tonometer and Rebound Tonometer respectively.

Measurements with NCT were performed three times, and the average value was recorded. Again, if

the difference between the measurements was more than 3 mmHg, the extreme number was discarded, and another measurement was performed.

IOP measurement with Rebound Tonometer was taken after instructing the patient to relax and look straight ahead at a specific point to keep the eye steady, IOP measurements were recorded at a distance of 4–8 mm from the center of the cornea along the central corneal axis, and the long probe was kept in a horizontal position to the corneal center. After six consecutive measurements, the result is given with a letter P on the display followed by the IOP.

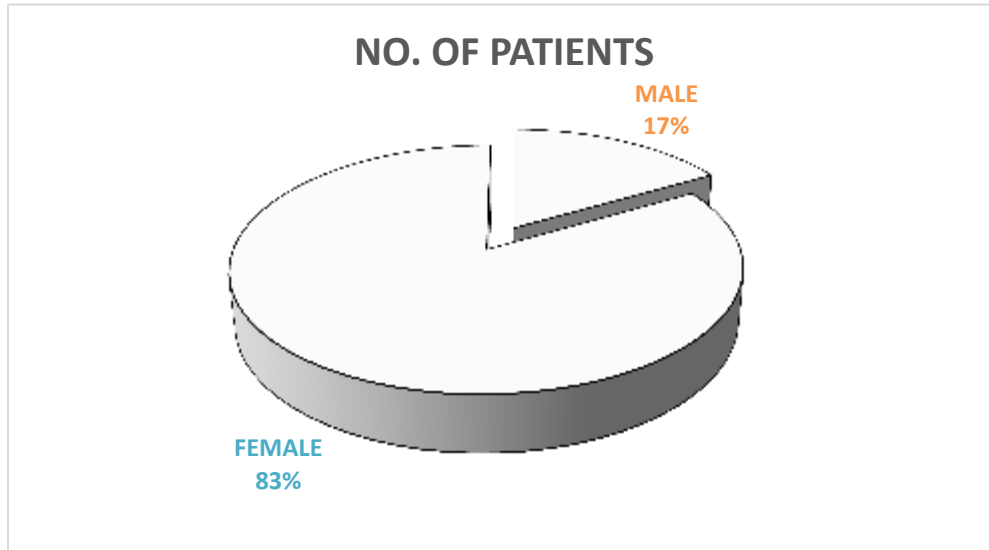
To avoid diagnostic error, all of the examinations were performed in the same timing during the day for each successive IOP measurement with and without contact lens and under same physical condition. Assessments were made in a room controlled for enlightenment, temperature, humidity, and airflow, to avoid ocular surface stress.

The physical/optical properties of the silicone hydrogel contact lenses used are Comfilcon A with Base Curve of 8.6mm, Total Diameter of 14mm, Center thickness of 0.08 mm, Lens Power : -0.50 D, Refractive Index: 1.40, Water Content : 48%, Specific Gravity : 1.04g/cm³, Modulus : 0.75 MPa, Oxygen Transmission Dk/t: 160 x 10⁻⁹(cm/sec)(ml O₂/ml x mmHg), Oxygen Permeability: 128 x 10⁻¹¹(cm²/sec)(ml O₂/ml x mmHg) 35°C (Coulometric method).

RESULTS

In our study out of 30 patients, 05 (16.66%) males and 25 (83.33%) females subjects, the female ratio was higher than male.

GRAPH 1- Pie Chart Showing the Gender Distribution



Also, the mean IOP value of Non-contact Tonometry without contact lens is 15.90 mmHg while with contact lens the mean value is 15.74 mmHg, which is slightly lower. The mean IOP value of rebound Tonometry without contact lens is 16.00 mmHg while with contact lens the mean value is 16.02 mmHg which is slightly higher.

According to the statistical analysis performed with Independent t test for Non Contact Tonometry without and with contact lens results in p-value is 0.8354.

According to the statistical analysis performed with Independent t test for Rebound Tonometry without and with contact lens results in p-value is 0.6858.

TABLE 1- Mean IOP and standard Deviation with and without contact lens:

IOP measurements with and without contact lens			
Tonometry	Mean IOP±SD		P-value
	Without contact lens	with contact lens	
Non Contact Tonometry	15.90 ± 2.57	15.73 ± 2.50	0.8354
Rebound Tonometry	16.00 ± 3.05	16.02 ± 2.89	0.6858

In our study, it is found that the p-value 0.8354 which is > 0.05, thus the difference found is statistically insignificant when measuring IOP without and with contact lenses by Non Contact Tonometry. The mean IOP value found with Non Contact Tonometry was 15.90 + 2.57 without contact lens wear and with Contact lens was 15.73 + 2.50 which was slightly lesser. PG Firat, C Cankaya, S Doganay, M Cavdar, S Duman, E Ozsoy and B Koc³, found that The mean IOP value of group 1 (IOP measurement with NCT without contact lens) and group 2: (IOP measurement with NCT with contact lens) was 14.55±2.95 mm Hg and 13.92±2.58 mm Hg in group 2. They detected no statistically significant difference

between group 1 and group 2(P=0.4063). In another study Patel and Illahi⁴ evaluated the IOP values obtained while wearing CLs with various power range and concluded that NCT can be performed through a contact lens if the power is not greater than +3 D and lens center thickness is no more 0.30 mm, which correlate with our study.

Also, Takenaka J, Kuniyama E, Rimayanti U, Tanaka J, Kaneko M, Kiuchi Y⁵ found no significant differences in the IOP measurements obtained while wearing SCLs using Rebound tonometry. The Bland–Altman plots in their study also showed that the average IOP difference measured on Rebound tonometry was close to 0 for all SCL examinations.



Similarly in another study Zeri F, Calcatelli P, Donini B, Lupelli L, Zarrilli L, Swann PG6 concluded that Rebound tonometry can be reliably performed over silicone hydrogel CLs, which co-relates with our study.

CONCLUSION

In conclusion, according to the results of this study, the silicone hydrogel (comfilcon A) Contact Lens does not significantly affect IOP values measured using non-contact tonometry and Rebound tonometry and thus IOP measurement over the silicone hydrogel CL, using non-contact tonometry and Rebound tonometry is reliable.

AREA OF FURTHER RESEARCH

Our study had a small sample size, and the investigation was performed using only young healthy Indian subjects. For this reason, we were unable to assess the influence of age or ethnicity on IOP. In addition, we do not know whether the results apply to patients with glaucoma or corneal abnormalities, as we examined only normal eyes. Future studies including eyes with corneal pathologies, glaucoma and/or CL of high power and contact lens with different center thickness are needed to analyze the value of IOP measured with CL on. We measured the IOP of young subjects in order to exclude the effects of age on IOP differences. We hope to examine the findings for different Contact lens in the future.

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UNDERSTANDING THE PSYCHOLOGICAL COMPONENT OF PAIN: SYSTEMATIC REVIEW OF LITERATURE IN APPLYING POSITIVE PSYCHOLOGY TO ENHANCE PHYSIOTHERAPY OUTCOME

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ABSTRACT

This article examines the importance of psychological elements in the development of chronic pain and disability, with a particular focus on how basic psychological processes have been incorporated into theoretical models with physiotherapy implications. To that goal, an overview of how key psychological elements related with the experience of pain (such as forgiveness and self-efficacy) have been integrated into the primary models of pain and disability in the scientific literature is presented. Pain has evident emotional and behavioural effects that impact the development of long-term issues as well as treatment outcomes. These psychological aspects, however, are not frequently analyzed in physiotherapy clinics, nor are they used effectively to improve treatment. Based on a review of the scientific literature, it is clear that psychological processes influence both the feeling of pain and the treatment outcome; therefore, including psychological principles into physiotherapy treatment could improve outcomes.

Methodology/Approach: Established theories and constructs are studied to understand the relationship between psychological pain and physiotherapy outcome. This study is based on existing literature related to patient behaviour and human psychology. Research papers and books are retrieved from databases including Proquest, Ebsco, Elsevier, Emerald, Science Direct, Google Scholar and Research Gate.

Research Limitations: This research is purely based on study of earlier research. The findings should be corroborated by conducting empirical research.

Originality/ Value: The study establishes a strong linkage between psychological pain and its effect on effectiveness of the physiotherapy outcome.

KEYWORDS: Psychological pain, Positive psychology, Forgiveness, Self-Efficacy, Chronic pain

INTRODUCTION

The author had an experience treating a patient with Frozen Shoulder, a condition characterized by stiffness and pain in the shoulder joint. The patient was an unmarried female in her early 50's, from a lower-class family with little literacy. She lived with her elder brother who was married with two kids. Initially, they enjoyed being together as a family, but later the patient's sister-in-law started believing her as a burden as she wasn't earning and as her husband was the only breadwinner of the family. The patient faced numerous verbal assaults from her family leading to her facing trauma physically as well as mentally. The mental trauma she was going through further triggered the pain at Spinal Cord and Thalamus by pain fibers. However, the author did treat her holistically, giving her a chance to vent out whatever she had buried inside her head and further exaggerating her condition. This is just a case

study to draw the reader's attention to why it is important to consider the psychological aspect of pain during the physiotherapy treatment as well. According to the author a lot of times this pain is confused with physical pain and tried to be treated with medication.

Although the link between physical and mental health is well acknowledged, many health professionals have stated that they are unprepared to handle patients' physical and mental health needs. The mental health of patients undergoing treatment for physical problems in general hospitals is frequently overlooked. A survey of 480 health-care workers in a general hospital found that the majority believed they lacked the education and skills to diagnose psychological disorders in their patients, as well as the skills to give appropriate support. Nurses caring for elderly adults hospitalized to a general hospital for treatment of a physical ailment failed to notice when



mental health difficulties were linked to the underlying physical condition in a comparable study. Physiotherapy is essential in the treatment of the physical elements of musculoskeletal, cardio-respiratory, and neurological problems, as well as in the management of chronic pain and avoidable diseases like diabetes. However, one out of every four people with musculoskeletal illnesses also has a mental illness, and there is substantial evidence of mental health issues in patients with numerous pain sites, chronic pain, and conditions like chronic fatigue syndrome.

UNDERSTANDING PSYCHOLOGICAL ASPECT OF PAIN

Due to the sensory and affective components it incorporates, pain is a complex, multifaceted experience that is unique to each individual. The “unpleasantness” or suffering that comes with a painful occurrence is created by the affective component of pain, which comprises emotional, cognitive, and behavioural aspects. This affective component is critical because it has a big impact on how a person evaluates their overall well-being in relation to their pain experience. Pain has a far more profound effect on an individual than is usually apparent on the surface. Clinicians frequently make the mistake of adopting a more “clinician-centered” approach, focusing therapy sessions and teaching solely on pain reduction, range of motion restoration, and strength building. These are, without a doubt, key parts of effective treatment, and they are typically required for patients to recover to greater levels of functioning. However, if the focus of therapy is just on these objectives and fails to recognize and address the psychological and social factors that contribute to pain, the results will be far from ideal. Until each aspect of the patient’s pain is considered, from anatomic-physiologic to psychological, treatment cannot be considered to truly have a “patient-centred” approach.

While physiotherapists are educated on the psychological and sociological aspects of pain, these factors are all too often neglected and undertreated. In reality, many physiotherapists and other healthcare professionals may feel ill-equipped to address the emotional and behavioural changes that come with pain, especially because it goes beyond the typical anatomic and physiologic information that is more solidly within the area of practice. While physiotherapists do not have the same level of education as mental health professionals when it comes to the interplay of emotional, behavioural, and cognitive factors, they do have the ability to incorporate psychological strategies into treatment

sessions and interventions to help address the various non-anatomic aspects of pain.

As previously said, the psychological aspect of pain is frequently more restricting than the actual pain itself. As a result, this often-overlooked factor will outperform even the most effective treatment plans and initiatives. The psychological component usually comprises essential symptoms including low motivation and low self-efficacy, which can lead to emotional distress, problem-solving hurdles, and treatment participation difficulties. Patients with chronic pain, in particular, experience changes in their social networks, which can lead to interpersonal issues, loneliness, anxiety, and despair. Further stressors, such as the possibility of losing one's job or facing financial difficulties as a result of pain, might have a negative impact on therapy. In order to enhance treatment for both acute and chronic pain, it is critical to limit the presence of these emotional and social stresses during therapy.

MENTAL HEALTH IN PHYSIOTHERAPY

Not all physiotherapists are aware that mental health is the exclusive focus of their practice. The following remark, however, exemplifies this point: “There is no health without mental health.” Colleagues will be confronted with persons with weak mental health, chronic musculoskeletal problems, chronic pain, and psychosomatic disorders in their practice, whether consciously or unconsciously. Mental health issues are intertwined in their experiences. After all, people with mental illnesses suffer from a variety of physical ailments (cardiovascular diseases, metabolic syndrome, obesity, osteoporosis, and so on) as a result of medication, sedentary behaviour, or inactivity. As a result, it is critical for practicing physiotherapists to consider the mental health aspect of their patients' physical issues.

MODELS OF THE DEVELOPMENT OF PERSISTENT PAIN PROBLEMS

A number of theoretical models have been presented to describe how psychological factors may influence pain and disability throughout time in more detail. Most pain psychology researchers adhere to a broad, biopsychosocial formulation, while more detailed conceptual models show how psychological elements influence the shift from acute to chronic pain. Despite the fact that there are numerous theoretical viewpoints on pain and disability, we will discuss the five most generally referred to theories in contemporary pain psychology research. The five models show how the specific relationships and



mechanisms that exist between psychological elements are interconnected. As a result, they assist us in comprehending the progression of chronic pain and incapacity. Furthermore, each of these models emphasizes various mechanisms, which may aid us in

determining the most successful approaches to dealing with psychological issues.

Theory	Description	Psychological Processes Featured	Mechanism	Examples of Treatment Intervention Strategies
Fear-avoidance model	A painful injury may result in catastrophizing and fear, which lead to avoidance of certain movements. This behavior, in turn, leads to more avoidance, dysfunction, depression, and ultimately more pain.	<ul style="list-style-type: none"> · Cognitive interpretation featuring catastrophizing · Emotions: fear, worry, and depression · Attention: fear keys attention on internal stimuli (hypervigilance) · Behavior: avoidance of movement 	Activity avoidance leads to physical degeneration and social isolation; vicious circle	Promote physical and social activation (eg, with graded activity)
Acceptance and commitment model	Rigid beliefs (eg, that the pain must be cured) may block the pursuit of long-term life goals. Reducing futile attempts to achieve unrealistic goals (acceptance) produces flexibility and engagement in pursuing important life goals (commitment).	<ul style="list-style-type: none"> · Cognitive: flexibility in beliefs, life goals, and commitment · Emotions: anger and frustration · Behavior: commitment, pursuing goals 	Repeated (futile) attempts to control or alleviate pain lead to frustration	Provide realistic treatment goals and encourage client participation in decision making



<p>Misdirected problem-solving model</p>	<p>Normal worry about pain may tune the patient into certain ways of solving this problem (eg, medical cures). When this does not actually solve the problem (eg, with chronic pain or certain forms of musculoskeletal pain), it results in more worry and an even narrower view of the nature of the problem, making it less likely to actually solve the problem.</p>	<ul style="list-style-type: none"> · Emotions: worry as a driving force · Attention: pain demands attention · Cognitions: beliefs about cause of pain · Behavior: attempts to solve problem 	<p>Hypervigilance to pain symptoms contributes to rumination and failed attempts to escape pain; vicious circle</p>	<p>Redirect problem-solving efforts toward achievement of functional goals</p>
<p>Self-efficacy model</p>	<p>The belief that a person is capable of coping with pain is directly related to self-management; low self-efficacy, with feelings that the pain is uncontrollable cause physical and psychological dysfunction.</p>	<ul style="list-style-type: none"> · Cognitive interpretation: beliefs concerning controllability of pain · Behavior: coping skills 	<p>Fluctuating pain reduces perceptions of control and mastery over pain</p>	<p>Encourage self-care and self-management strategies, reduce dependence</p>
<p>Stress-diathesis model</p>	<p>Significant psychological stress and limited coping resources predispose a person to pain and being less prepared to deal with it. Thus, pain is more likely to result in functional difficulties and emotional distress.</p>	<ul style="list-style-type: none"> · Emotions: stress, depression, and anxiety · Behavior: coping strategies and skills 	<p>Protective psychosocial factors buffer the emotional impact of pain, whereas distress and emotional dysregulation predispose to pain</p>	<p>Improve stress management skills and social support</p>

Table 1: Summary of Psychological Models of Pain and Disability Highlighting the Psychological Processes Involved and Examples of Treatment Interventions



CONNECTION BETWEEN FORGIVENESS & PAIN

The link between forgiveness and holistic health is often neglected, especially when it comes to pain. We'll look at studies and develop a theoretical argument for forgiveness's applicability to a specific

sort of pain: chronic widespread pain (CWP). When looking at this type of pain, a picture emerges from a biopsychosocial model of health that reveals a significant link between social stress, coping, and forgiveness.

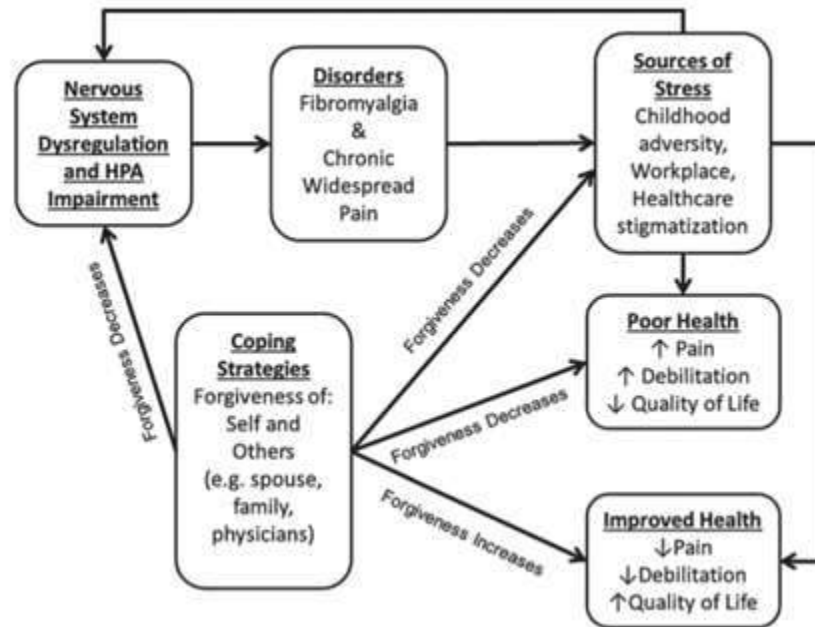


Fig 1: Conceptual model of the stressful consequences of fibromyalgia and chronic widespread pain and the role of forgiveness as a coping mechanism that positively impacts health (Toussaint et al. 2010)

The model represents frequent sources of stress for CWP and Fibromyalgia (FMS) sufferers, as well as the recognized health repercussions of this stress. The impact of stress on central and autonomic function (a hallmark physiological sign of FMS) is also illustrated in the model, as is the decreased functioning

of the hypothalamic-pituitary adrenal cortical axis (HPA) that is typically linked with FMS. Forgiveness is viewed as a coping technique that aids in the relief of common sources of stress, but it also has direct and indirect (through stress) consequences on health, nervous system function, and endocrine function.

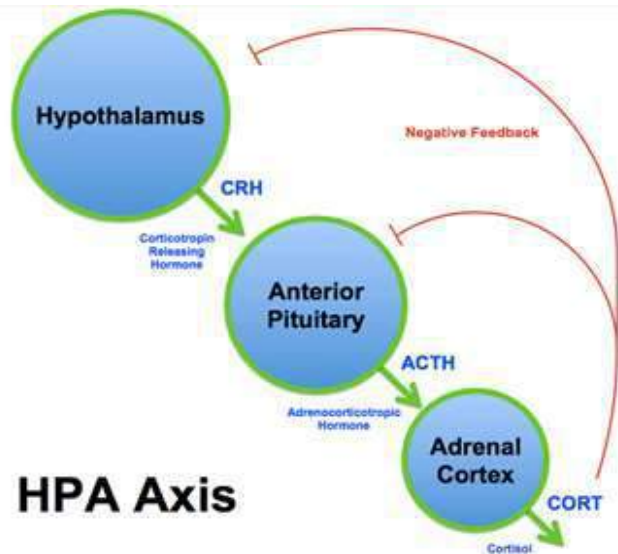


Fig 2: Hypothalamic-Pituitary-Adrenal (HPA) Axis

FMS is linked to debilitating generalized pain, fatigue, and sleep deprivation (Wolfe, Ross, Anderson, & Russell, 1995). Depression is a prevalent comorbidity among FMS sufferers (Uguz et al., 2010). Both disorders, as well as anxiety, have unfavourable consequences on pain severity, pain interference, functional limits, and quality of life that are independent as well as cumulative (Bair, Wu, Damush, Sutherland, & Kroenke, 2008). Patients with FMS have a decreased health-related quality of life and report diminished physical functioning (Neumann, Berzak, & Buskila, 2000). To help the organism adjust

physiologically to the threat, stressors stimulate the hypothalamic-pituitary-adrenal (HPA) axis and/or the sympathetic nervous system (SNS) (Black, 2003). FMS appears to be a stress-related syndrome, according to mounting research. The HPA axis and the SNS have both been shown to be dysfunctional in FMS studies (Martinez-Lavin, 2012; Williams & Clauw, 2009).

Given the relevance of stress to pain, a number of sources of stress that are particularly important, unique, and impactful for CWP and particularly for FMS are reviewed below.

Sources of Stress
Childhood adversity: Emotional, physical, sexual trauma
Workplace: Bullying, harassment, discrimination
Spouse, family, friends: Lack of affection and support from others; difficulties with parenting and marital strife
Healthcare stigmatization: Skepticism from healthcare staff, difficulties with insurance providers, misdiagnosis
Overcommitment: Levels of dissatisfaction with oneself, insecurity, and a lack of social recognition
Perfectionism: Dealing with exceedingly high and unreachable expectations for oneself and others
Anger: Anger at: (a) the person responsible for the injury/illness, (b) the health care provider, (c) the mental health professional, (d) the legal system, (e) insurance and third-party payers, (f) employers, (g) significant others, (h) God, (i) self, and (j) the whole world
Shame: Shame and self-blame over interference with activities of daily living resulting from pain; struggles with self-esteem and dignity

Table 2: Sources of stress for chronic wide-spread pain and fibromyalgia patients



As a result, studying coping is crucial since it can either lessen or exacerbate the effects of these stresses on pain and adjustment. Forgiveness is gaining popularity as a useful coping method for chronic pain sufferers. Forgiveness is a unique coping mechanism that includes affective, behavioural, motivational, and cognitive components (Strelan & Covic, 2006). Forgiveness appears to have health benefits in a variety of groups, including the general public (Toussaint, Williams, Musick, & Everson, 2001; Toussaint, Owen, & Cheadle, 2012), elderly blacks (McFarland, Smith, Toussaint, & Thomas, 2012), and patients with spinal cord injury (McFarland, Smith, Toussaint, & Thomas, 2012). (Webb, Toussaint, Kalpakjian, & Tate, 2010). Furthermore, in physical therapy outpatients (Svalina & Webb, 2012), chronic pain patients (Parenteau, Hamilton, Twillman, & Khan, 2008), and low-back pain patients (Parenteau, Hamilton, Twillman, & Khan, 2008), forgiveness has been demonstrated to be inversely connected to pain (Carson et al., 2005). Though forgiveness is frequently considered of as a personality trait, it can also be looked of as an emotion-focused coping technique for dealing with interpersonal and societal stress (Worthington & Scherer, 2004). The forgiveness process is analogous to the coping process in at least six ways: (a) is a reaction to a stressor, (b) involves appraisals, (c) is emotion regulation, (d) is future-oriented, (e) can be both intra- and inter-personal, and (f) is dynamic and unfolds over time (Strelan & Covic, 2006). Given the broad spectrum of interpersonal and social stressors that are unique and powerful contributors to CWP and FMS, forgiveness as an emotion-focused coping process would seem an ideal and productive response.

Case Study: The author had a patient with severe pain in his head and neck, both parts were bent to the left and no matter what he tried he couldn't straighten them. Surprisingly, no physical adjustment was indicated. Further muscle testing determined that one of the ex-colleagues he had met triggered the neck pain, surfacing judgments of anger and fear. Thus, the author explains the role of forgiveness, that is an active process in which you make a conscious decision to let go of negative feelings whether the person deserves it or not. As you release the anger, resentment and hostility, you begin to feel empathy, compassion and sometimes even affection for the person who wronged you. As the author counselled her patient through the forgiveness of the judgments, his head and neck slowly moved back into normal position. He could turn his head from side to side and said, "It's all better."

RELATIONSHIP BETWEEN SELF-EFFICACY AND CHRONIC PAIN MANAGEMENT

Several recent researches emphasize the link between cognitive-behavioral variables and low back pain (LBP), emphasizing the importance of psychological dysfunctions in determining chronic pain or disability. Poor pain-related self-efficacy, fear of mobility, and catastrophizing may be significant barriers to recovery; yet, they are potentially changeable with evidence-based treatment interventions. Pain catastrophizing, fear of movement, and avoidance behaviour, according to Vlaeyen & Linton's Fear-Avoidance Model, may lead to physical deconditioning and pain perpetuation in chronic LBP. One of the most important psychological factors influencing pain reactions is pain catastrophizing. It's characterized as "an excessive negative attitude toward existing or prospective pain experiences," and it explains a proclivity to misread or exaggerate seemingly dangerous situations. It can lead to greater pain sensitivity, trapping patients in a vicious cycle that may also affect their physical performance. Pain-related self-efficacy is described as the notion that people with chronic pain can carry out specific activities while being in pain. In individuals with LBP, poor pain self-efficacy is a more significant barrier to rehabilitation than various other psychosocial aspects. Patients with chronic LBP who have strong pain self-efficacy had higher levels of activity, working endurance, exercise/stretching performance, lower pain distress and severity, fewer maladaptive pain-related behaviours, reduced catastrophizing, and greater use of various coping methods (i.e., ignoring pain sensations, pacing). On the other hand, low self-efficacy is linked to long-term disability. In primary care patients with musculoskeletal pain, self-efficacy and fear avoidance attitudes are more relevant predictors of disability than pain severity and duration. Improvements in self-efficacy that occur during treatment are linked to improved function and lower self-reported pain.

ROLE OF POSITIVE PSYCHOLOGY IN UNDERSTANDING PAIN INTENSITY AND DISABILITY

Psychological discomfort and inefficient coping mechanisms are linked to more severe pain and physical limits in individuals with orthopedic illnesses, according to a significant body of research. However, little is known about the relationship between pain and physical restrictions and positive psychology (constructs that help people to survive and adapt to adversity).



In individuals with upper extremity disorders, emotional distress (such as depression and anxiety symptoms) and maladaptive coping techniques (such as catastrophic thinking in response to nociception) are consistently linked to higher pain and physical limits. However, identifying and resolving these aspects within the normal flow of orthopedic care is difficult, owing to the stigma attached to mental health difficulties and surgeons' apprehension about discussing these issues with their patients. The positive psychology approach, which emphasizes individual strengths rather than flaws, could bring new insight into the development of effective and acceptable interventions for this demographic. Positive psychology is concerned with more than just the absence of suffering or maladaptive coping. Rather, it emphasizes a person's talents and attributes of personal development and wellbeing. Positive psychology principles-based interventions have been linked to greater well-being and improved function. Such interventions may foster effective communication between physiotherapists and patients, and may increase the likelihood that patients would participate in psychosocial interventions.

Positive-psychology constructs such as satisfaction with life (one's level of individual subjective well-being), gratitude (one's tendency to recognize and respond with grateful emotion to general life events), coping through humor (seeing mirth within stressful experiences), resilience (the ability to bounce back or recover from stress), mindfulness (the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment to moment), and optimism (the ability to remain positive in the face of stress have been consistently shown to confer beneficial effects for mental health and in coping with stress and chronic illness). Prior research has shown that among patients with upper extremity conditions, greater overall mindfulness is associated with lower pain intensity and that a 60-second mindfulness-based video exercise can improve momentary pain, anxiety, depression, and anger in this group. We have also shown that satisfaction with life buffers the effect of pain in individuals with upper extremity musculoskeletal disorders.

CONCLUSION

We all want our patients to believe that they can and will get well; that they will be able to run 6 kilometers every day, garden, and pick up their grandchildren. But how do you build self-confidence in someone else? Past experience, vicarious learning, verbal persuasion, and physiological sensations are the

four main sources of self-efficacy, according to research. (1) Past Experience: This is the most potent and important source of information. Self-efficacy is typically strengthened by previous experiences conquering similar problems; the assumption is that if you've done it before, you can do it again. Assist patients in recalling a time when they triumphed over a physical difficulty. Use this information to remind them of their own strength and resilience. (2) Vicarious Learning: Observing others succeed at the same or a comparable job typically leads to imitation. This encourages patients to assume that if the task isn't too difficult or beyond their existing abilities, they can succeed as well. The more similar the model is to the patient, the stronger the effect (for example, witnessing a 25-year-old guy do cat/cow is unlikely to boost your 75-year-old female patient's self-efficacy). (3) Verbal Persuasion: Respect your patient's concerns and fears; realize that they are valid, but when they appear ready, assist them confront and reframe those thoughts. We want to urge our patients to push themselves a little, to 'lean into the pain' a little, and to accept that some discomfort is normal. We want them to discover their own strengths and abilities, and to know that they have all the resources they need to improve; we're just here to help them along the way. (4) Physiological States: Negative emotional states (e.g., stress, worry, fear, etc.) are negatively connected with self-efficacy beliefs, whereas good emotional states (e.g., excitement, confidence, optimism) tend to boost them. People have learned to interpret their physiological state as a measure of competency; for example, if a patient suffers fear before performing an activity, they will likely take it as a sign that they lack the necessary skills. What's crucial to remember is that it's not just about feeling; it's about how the patient perceives and interprets that experience.

Future research should focus on how to include positive psychology strategies into existing treatments, such as composite CBT-programs for chronic pain sufferers. Positive psychology interventions should not be considered stand-alone treatments for this group of patients, although they may help to enhance the effectiveness of other treatments. Future research will look at whether and for which patients these techniques might be advised. Although the effects appear to be modest, they are significant enough to justify a larger randomized controlled trial. Moreover, it should be considered whether it is more beneficial to incorporate positive psychology techniques into composite CBT programs to optimize the profits for patients suffering from chronic pain problems.



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A COMPARATIVE ANALYSIS OF K-MEANS AND HIERARCHICAL CLUSTERING

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ABSTRACT

Clustering is the process of arranging comparable data elements into groups. One of the most frequent data mining analytical techniques is clustering analysis; the clustering algorithm's strategy has a direct influence on the clustering results. This study examines the many types of algorithms, such as k-means clustering algorithms, and compares and contrasts their advantages and disadvantages. This paper also highlights concerns with clustering algorithms, such as time complexity and accuracy, in order to give better outcomes in a variety of environments. The outcomes are described in terms of big datasets. The focus of this study is on clustering algorithms with the WEKA data mining tool. Clustering is the process of dividing a big data set into small groups or clusters. Clustering is an unsupervised approach that may be used to analyze big datasets with many characteristics. It's a data-modeling technique that provides a clear image of your data. Two clustering methods, k-means and hierarchical clustering, are explained in this survey and their analysis using WEKA tool on different data sets.

KEYWORDS: data clustering, weka , k-means, hierarchical clustering

I. INTRODUCTION

Clustering is a vital part of data mining, and it's also one of the hottest topics of science in recent times. It is a technology that examines the logical or physical relationships between data and divides the data set into many clusters, each of which is made up of similar data sets in nature.

Data clustering is a process in which we group together entities with similar characteristics. Clustering quality depending on the similarity metric and how it's implemented. The clustering's main aim is to find a collection of patterns, points, and connections or objects from a natural grouping. One of the most remarkable data mining technique is clustering. Based on some rules, data may be classified into several classes or clusters, resulting in great similarity among data sets of the same class and substantial differences among data objects of other classes. [1]

Clustering is a method for logically categorizing raw data and looking for hidden patterns in large datasets. It's the act of grouping data into fragmented clusters so that data in one cluster matches data in

another, while data in other clusters varies. Clustering is a common data analysis approach for identifying homogenous groups of objects based on attribute values. Data Clustering has many different real life applications such as image segmentation, data analysis, machine learning, search engines, document retrieval, object recognition and evaluation, computational, economics, libraries, insurances studies.

Clustering algorithms are effective meta-learning tools for assessing the information generated by modern applications. Clustering methods are widely employed in a variety of applications. Data organization and categorization, as well as data modelling as well as data compression. When selecting a clustering algorithm, think about whether it can scale to your dataset. Machine learning datasets can contain millions of instances, but not all clustering algorithms scale well. The similarity of all pairs of examples is computed by several clustering algorithms.

Clustering approaches are used to classify groups of related data in multivariate data sets. There are a variety of clustering methods including:



- Partitioning methods
- Fuzzy clustering
- Hierarchical clustering
- Density-based clustering
- Model-based clustering

II. LITERATURE REVIEW

1. Manish Verma, Mauly Srivastava, Neha ...” A Comparative Study of Various Clustering Algorithms in Data Mining” [5]

The author made a comparison between different clustering techniques. The aim was to measure the algorithm which gives the best performance. It was observed that K-means is faster than all the algorithms that are mentioned in this paper. K-means and EM gives the best results than hierarchical clustering when working on huge data set.

2. U. Kaymak and M. Setnes, “Extended fuzzy clustering algorithms” [6]

The author uses fuzzy clustering algorithm to divide dataset into clusters. Some of the issues using fuzzy algorithm were discussed by the author such as number and shape of clusters, division of data patterns, choosing the number of clusters in the data. Enhanced version of fuzzy means were given and their properties were illustrated. Examples were used to show that the enhanced algorithms does not require any additional input from the user and can determine partition of data on its own.

3. Karthikeyan B., Dipu Jo George, G. Manikandan, Tony Thomas “A comparative study on k-means clustering and agglomerative hierarchical clustering,” [7]

The authors have done a comparative study to determine the best-suited algorithm among K-Means and Agglomerative Hierarchical Clustering. It was concluded that k-means can be best used for larger datasets with minimal runtime and memory change rate. It is also concluded that the agglomeration hierarchical clustering technique is best suited for smaller data sets because of the minimum overall memory consumption.

4. S. H. Sastry, P. Babu and M. S. Prasada, “Analysis & Prediction of Sales Data in SA P-ERP System” using Clustering Algorithms”, [8]

The authors of this paper used grouping procedures for recognizing contrast in item deals and furthermore to recognize and think about deals throughout a specific time. The interest for steel items is repeating furthermore, relies upon numerous

variables like client profile, value, limits and expense issues. Creators have investigated deals information with bunching calculations like K-Means and EM (assumption augmentation) that uncovered many fascinating examples helpful for improving deals income and accomplishing higher deals volumes. K-Means and EM (segment Procedures) calculations are more qualified to assess deals information in correlation with thickness based Procedures.

5. Soumi Ghosh, S. K. Dubey, “Comparative Analysis of K-Means.....” [9]

The paper includes comparison of two clustering techniques, centroid-based K-Means and representative object-based Fuzzy C-Means clustering techniques. This analysis is based on a performance evaluation with these algorithms about how efficient outputs are generated. The results of this comparative research depicts that efficiency of FCM is somewhat closer to K-means. However, computation time is still longer than K-means since the fuzzy measure calculations are involved.

6. M.Venkat Reddy, M. Vivekananda, RUVN Satish. [10]

The researchers have discovered an efficient clustering technique by comparing Divisive and Agglomerative Hierarchical Clustering with K-means. The outcome of paper was that Agglomerative clustering along with k-means is the practical choice to achieve a high degree of accuracy. Divisive clustering with k-means also functions efficiently where each cluster is fixed i.e. where the initial centroids are taken in a fixed number for each cluster rather than by random selection.

7.. N. Sharma .“Comparison the various clustering algorithms of weka tools”. [11]

The authors have compared and contrasted different clustering algorithms. Weka Tool is used to implement all of the proposed algorithms. The purpose of their research is to determine which algorithm is more appropriate and efficient. DBSCAN, EM, Farthest First, OPTICS, and the K-Means algorithms are among these algorithms. They show the benefits and drawbacks of each algorithm in this study. They have demonstrated the benefits and drawbacks of each method in this paper, however based on their study, they discovered that the k-means clustering algorithm is the simplest of the algorithms and fastest algorithm to be used with large datasets.



III. CLUSTERING PROCESS

The analytical processes required in cluster analysis have been established in the literature based on the basic paradigm on Knowledge Discovery in databases. Figure 1 depicts the steps involved in the clustering process.[3]

1. Feature selection

The stage is about choosing characteristics for cluster analysis. Because the class labels aren't predefined in cluster analysis, there's a good chance you'll pick features that are irrelevant or inconsequential. Additionally, removing non-essential information improves clustering results. The process of determining the most effective subset of the original characteristics to employ in clustering is known as feature selection. The application of one or more modifications of the input features to create new salient characteristics is known as feature extraction. To get an adequate collection of characteristics to employ in clustering, one or both of these strategies can be applied.

2. Clustering algorithm

The choice of a clustering algorithm influences the clusters obtained from the data . The results

obtained from clustering algorithms are based on some assumptions which depends on the properties of the data set (geometry and density distribution) and input parameter values since the class labels are not specified. A good clustering algorithm can recognize clusters regardless of their structure.

3. Cluster validation

Cluster validation of the clusters is an assessment of the clusters generated. Clusters are checked to determine a satisfactory quality of the created clusters and to achieve the desired clusters. External clusters can all be used to test clusters with internal indices and relative indices. The clusters generated by the algorithm are assessed in this stage. Visualizing the clusters is a useful way to rapidly double-check the cluster results. [4]

4. Result Analysis

The clusters produced from the initial set of data are analyzed to gain a better understanding of them and to guarantee that the attributes of the clusters are obtained. Integration of expert evaluations with additional experimental findings and analysis might also help to broaden the interpretation.

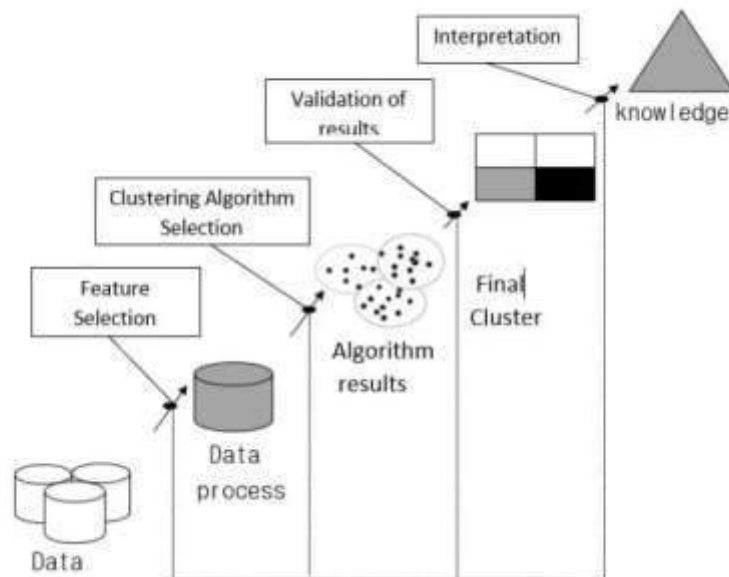


Fig 1 . Clustering Process



IV. CLUSTERING BENCHMARKING CRITERION

The comparative strengths and limitations of each algorithm in relation to the three-dimensional [3-D] characteristics of large data should be analyzed by particular criteria for the evaluation of large-data clustering methods including Volume, Velocity, and Variety.

The efficiency to manage a large amount of data is called volume of a clustering process. The following criteria are taken into account while choosing a good clustering algorithm for the Volume property:

- i) the dataset's size,
- ii) dealing with high dimensionality, and
- iii) managing the noisy data.

The capability to handle various sorts of data is referred to as variety of clustering process. The following criteria are taken into account while choosing a good clustering algorithm for the Variety property:

- i) the dataset type;
- ii) shape of clusters

The speed of an algorithm over massive data is referred to as velocity of clustering process. The different criteria are taken into account while choosing a good clustering procedure for the Velocity property:

- i) the algorithm's complexity;
- ii) the algorithm's run-time performance

V. COMPARITIVE ANALYSIS

V.I. K-Means

The K means clustering algorithm is commonly used. This technique will be useful in extracting meaningful information from a large database using a cluster. The K-means clustering algorithm is a well-known data clustering technique. It is used in a variety of applications, including information retrieval and computer vision. K-means clustering divides n data points into k clusters, allowing for the grouping of comparable data points. It's an iterative strategy for assigning each point to the cluster with the closest centroid. The centroid of these clusters is then calculated again by taking the average.

Advantages

- Simple: - Easy to understand and to implement.
- Efficient: Time complexity is $O(t.k.n)$ very efficient to work with huge data sets
- Requires an input from user.

Disadvantages

- K-Means may be computationally faster only if value of K is small.
- Can only be used if the mean is known.
- Not suitable for high dimensional data
- Sensitive to noise/outliers [12]

V.II. Hierarchical clustering

A hierarchical method creates a hierarchical representation of a set of data items. Dendrograms are made using the Tree of Clusters. Sibling clusters split the points covered by their shared parent, whereas child clusters exist in every cluster node. A typical clustering approach that can be helpful for a range of data mining tasks is hierarchical algorithms. A hierarchical clustering technique creates a succession of clusterings in which each grouping gets nestled into the clustering behind it.

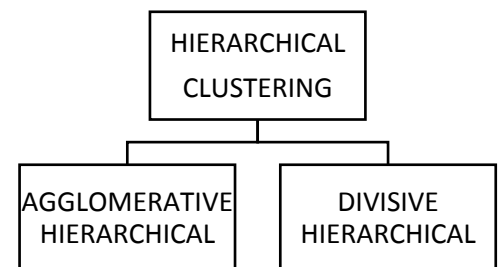
Advantages

- Applicable to all attribute types.
- Easy at handling similarity data.
- Small groups are formed, making analysis and comprehension simpler.
- The number of clusters are not pre-defined, so the user has the ability to dynamically select clusters.
- Concept wise simple.

Disadvantages

- Clustering Cluster merging/splitting is a permanent process.
- It is impossible to correct erroneous judgments afterwards.
- Divisive techniques can be time-consuming to compute.
- Methods aren't always (necessarily) scalable when dealing with huge datasets.
- A termination/readout condition is required.

Hierarchical clustering can be divided into two sub categories:



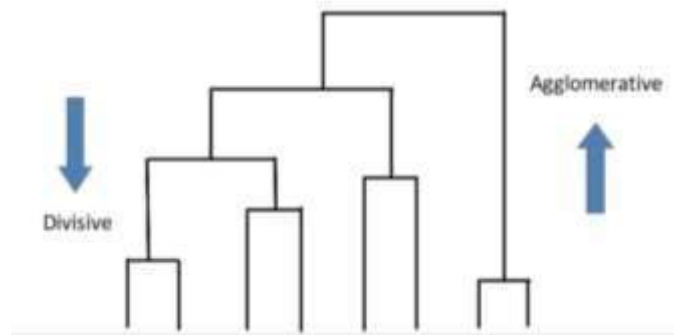


I. Agglomerative Hierarchical clustering

The bottom-up approach is often referred to as the agglomerative approach, since it begins with each object that forms a separate group. It continues to merge the nearby objects or groups. It keeps going until all the groups are combined to one or until the condition of termination is maintained. The aim of agglomerative clustering technique is to group together objects with similar characteristics. [14]

II. Divisive Hierarchical clustering

The divisive clustering method, on the other hand, works from the top down, starting with a single cluster at the top and dividing it down to the bottom. It usually starts in the same cluster with all of the objects. Then, through the application of the K-means clustering, a cluster is divided into smaller clusters. It is down until the termination condition carries every object in one cluster. [13]



VI. WEKA TOOL

Weka is freely available on the Internet and comes with a new data mining document that describes and thoroughly explains all of the techniques that are included. Weka class libraries-based applications may operate on any computer with a Web browser, allowing

users to apply machine learning algorithms to their own data, independent of computer's platform. We used the Weka tool version 3.8.5 in this work to examine the accuracy and speed of simple K-means and Hierarchical clustering algorithms on pre-given datasets.



VII. EXPERIMENT

Various datasets with known clustering are available in the UCI collection of machine learning databases for testing the accuracy and efficiency of simple k-means and hierarchical clustering algorithms. The Diabetes datasets and Hypothyroid datasets, as well as a brief

explanation of datasets utilized in experiment evaluation, are used in this study. [11]

Table 1 lists some of the features of the test datasets – number of attributes and number of instances formed in the given dataset.



Table 1. Description of Data Sets

Datasets	No. of Attributes	No of Instances
Diabetes	09	768
Hypothyroid	30	3772

Table 2. Clustering Results for Data Sets.

	k-means running time(sec)	Hierarchical clustering running time (sec)	time k-means Accuracy %	Hierarchical clustering Accuracy %
Diabeties	0.06	2.14	51.692	65.104
Hypothyroid	0.16	5.74	69.64	93.24

Table 2 shows the clustering findings for cluster k=3.

Fig 2 Shows Running Time when Both Algorithms are applied on the Same Datasets.

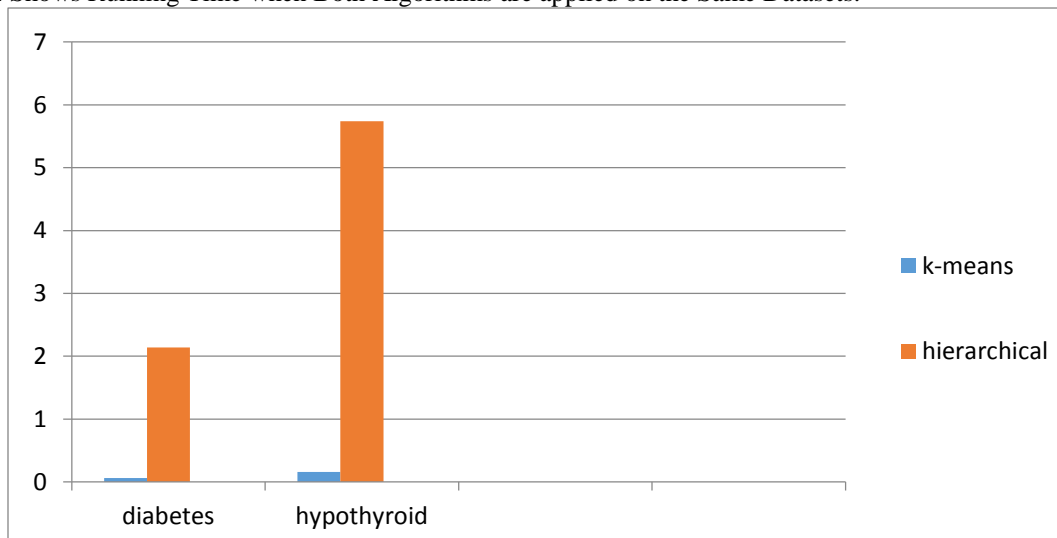


Figure 2. Running time v/s Datasets

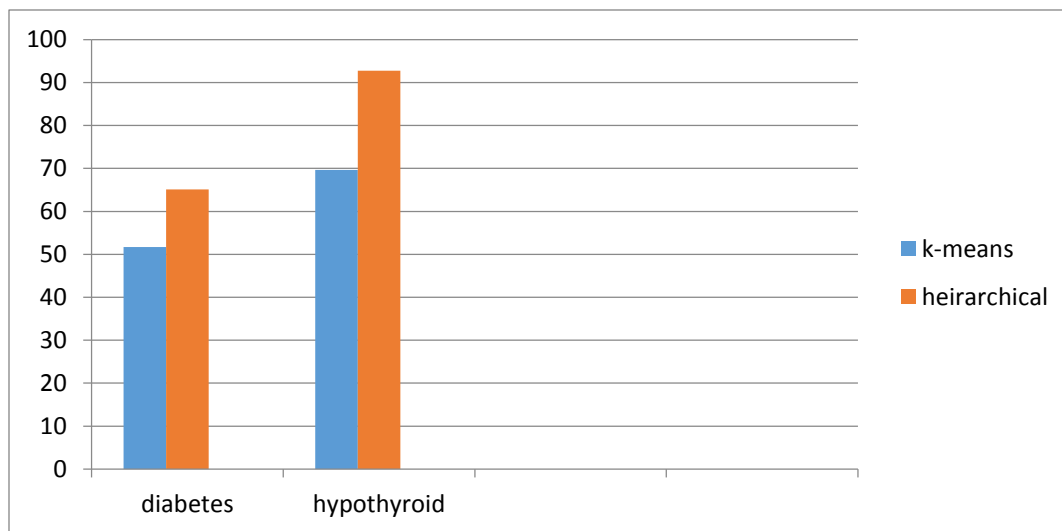


Figure 3. Accuracy v/s Datasets



VIII. CONCLUSION

The K-mean method performs in clustering huge data sets, and its performance improves as the number of clusters grows. For categorical data, a hierarchical algorithm was employed, and according to its complexity, a new approach for giving rank values to each categorical attribute using K-means was applied, in which categorical data is first transformed to numeric by assigning rank values to each categorical attribute. The K-mean algorithm performs better than the Hierarchical Clustering Algorithm. The RMSE lowers as the number of clusters rises, and the performance of the K-Means method improves as the RMSE drops. When clustering certain (noisy) data, all of the methods contain some ambiguity. When clustered, all of the methods exhibit some uncertainty in some (noisy) data. When a large dataset is used, the quality of all algorithms improves dramatically. The K-Means algorithm is extremely sensitive to dataset noise. This noise makes it difficult for the algorithm to cluster data into appropriate clusters, and thus has an impact on the method's outcome. When working with large datasets, the K-Means system results conventional clustering algorithms while still producing high-quality clusters.

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EFFECTS OF LAVA ON OUR ECOSYSTEM AND SURROUNDINGS

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ABSTRACT

Lava is a type of composite fluid material made up of solid minerals (mostly silicates) and gas bubbles suspended in a silicate melt matrix. It is the result of partial melting within the Earth. The composition of igneous rocks visible at the surface is interpreted from their composition, and while they have a wide range of compositions, they are ultimately formed by melting in the Earth's mantle or crust. Basalts are formed mostly from the mantle, whereas granites are derived from the crust. Fractional crystallization, magma mixing, and other processes that alter the original magma composition result in different compositions. When hiking on the Big Island, you must always be cautious. Hiking near active lava in Hawaii Volcanoes National Park, however, necessitates even greater caution. You must wear proper safety clothing, carry and drink plenty of water to stay hydrated, heed official warning signs, and follow a leader who is responsible and knowledgeable about the area. The abundances of major and trace elements are frequently related to the plate tectonic environment in which igneous rocks are found, and their abundances can be utilised to determine the origins of magmas.

INTRODUCTION

Molten rock (magma) that has been ejected from the interior of a terrestrial planet (such as Earth) or a moon is referred to as lava. Magma is created by the planet's or moons internal heat, and it erupts as lava at volcanoes or through cracks in the crust at temperatures ranging from 800 to 1,200 °C (1,470 to 2,190 °F). Lava is the term used to describe the volcanic rock that forms after cooling. Because rocks are so hard, melting them is extremely difficult. Lava flows typically reach temperatures of 700° to 1,250° Celsius, or 2,000° Fahrenheit. The temperature is heated enough deep into the ground, usually around 150 kilometers, that certain minor parts of the rocks begin to melt. The magma (molten rock) will rise to the surface as a result (it floats). The temperatures are so intense deeper inside the planet that the entire outer core is molten. Because the inner core is made up of several substances, it is not molten. Lava flows are described using a variety of terms. The rate of flow front advancement, temperature, and geochemistry of a lava flow, for example, can all be described. These characteristics have an impact on the flow's shape and the danger it

poses. They can also be used to detect whether one lava flow is similar to another. Some of these characteristics must be recorded during the eruption because they fluctuate over time (for example, the temperature of the lava flow core at a specific point), whereas others can be monitored after the eruption has ended (e.g. bulk geochemistry, final flow dimensions).

There are some journals and books written about the topic volcanic eruptions but there are many more to the topic of lava and how it can cause the damage to its surrounding. Mostly the lava is seen as a source of creating land and other things but it come with a price. The amount of toxic gases released during eruption and volcanologists are still trying to find the best possible way to reduce its consequences and how the destruction can be limit.

HAZARDS CAUSED BY LAVA FLOW

Volcanologists are constantly trying to figure out how volcanic dangers behave and how to prevent them. Here are some of the more common risks, as well as some of the ways in which they originate and act. Everything in the path of a lava flow will be knocked



over, engulfed, buried, or ignited by the lava's extraordinarily high temperature. Meltwater from the ice and snow can cause far-reaching lahars when lava erupts beneath a glacier or flows over snow and ice. If it gets into a body of water, or if water gets into a lava tube, the water may boil furiously, resulting in an explosive shower of molten spatter over a large area. When lava buries vegetation, methane gas can travel into underground cavities and explode when heated. Fast-moving pyroclastic flows can arise when thick viscous lava flows, especially those that form a dome, collapse. Volcanic carbon dioxide contributes to the natural greenhouse effect. Because sulphur dioxides are transformed to sulphuric acid in the stratosphere, which is the principal cause of acid rain, they cause environmental difficulties. Sulphate aerosols are also generated, which reflect solar radiation while absorbing heat, cooling the earth. Chemical reactions in which sulphate aerosols participate result in the formation of ozone-depleting material.

Lava flows wreak havoc on the property of those caught in their path. Casualties are uncommon, however, because lava flows are normally slow enough for people and animals to flee, albeit this depends on the viscosity of the lava. Nonetheless, injuries and deaths have happened as a result of people being cut off from their escape path, getting too close to the flow, or, more rarely, the lava flow front moving too swiftly. This happened most famously during the Nyiragongo eruption in Zaire (now Democratic Republic of the Congo). A crater wall was breached on the night of January 10, 1977, and a fluid lava lake emptied out in just an hour.

Volcano ejects pyroclastic flow from a collapsing lava dome, lahars, poisonous gases that move ahead of lava, or explosions created when the flow comes into contact with water are all examples of deaths attributed to volcanoes. Volcanoes also create carbon dioxide (CO₂), sulphur dioxide (SO₂), hydrogen sulphide (H₂S), fluorine gas (F₂), hydrogen fluoride (HF), and other gases, the majority of which is comparatively harmless water vapour (H₂O). This was the situation in 1986, when the overturn of Lake Nyos in Cameroon, Africa, smothered more than 1,700 people and 3,500 cattle in adjacent villages due to a CO₂ eruption from the lake. In the correct circumstances, all of these gases can be dangerous, even deadly. Sulphur dioxide and hydrogen sulphide are both sulfur-based gases with a characteristic acidic, rotten-egg odour, unlike carbon dioxide. SO₂ can react with airborne water vapour to generate sulfuric acid (H₂SO₄), a caustic acid; H₂S is also exceedingly acidic and toxic even in small doses. Both acids irritate soft

tissues (eyes, nose, throat, lungs, and so on), and when the gases combine with water vapour to generate fog, or volcanic fog, which is toxic to breathe and can cause damage to the lungs and eyes. Sulfur-based aerosols can block sunlight and interfere with ozone in the high atmosphere, affecting climate in both the short and long term. A lava bench is a particularly hazardous place. Fluorine gas is one of the most dangerous gases released by volcanoes, despite its rarity (F₂). This gas is a caustic, deadly yellowish brown gas. It is denser than air, like CO₂, and prefers to concentrate in low locations. Hydrogen fluoride (HF), its partner acid, is very corrosive and poisonous, causing severe internal burns and attacking calcium in the skeletal system. Fluorine can be absorbed by plants even after visible gas or acid has faded, and it can kill people and animals for lengthy periods of time after an eruption. Fluorine poisoning and starvation killed more than half of Iceland's cattle and nearly a quarter of its population following the eruption of Laki in 1783. Long after the lava has cooled, areas of recent lava flows remain dangerous. Land is more unstable and can break off into the sea where juvenile flows have built new places. Falling into a lava flow is analogous to falling into shattered glass because flows often split deeply, forming hazardous chasms. When crossing lava flows, rugged hiking boots, long pants, and gloves are recommended.

There are few organization and NGO (non-governmental organization) which are doing their best to spread awareness of the volcanic eruption and how it can be fatal, can cause a lot lives. American Red Cross is organization which operates mainly in the united states of America but it do help in the neighboring countries with funds around the area where volcanoes are active or area where the eruption could happen .WHO has been doing excellent work in the field of providing aid to seekers in these kinds of situation .In recent years ,Hawaii is the area where most volcanic eruption have occurred ,so there are number of organization ,observatory, world heritage sites in and around the volcanoes . Volcanic carbon dioxide contributes to the natural greenhouse effect. Because sulphur dioxides are transformed to sulphuric acid in the stratosphere, which is the principal cause of acid rain, they cause environmental difficulties. Sulphate aerosols are also generated, which reflect solar radiation while absorbing heat, cooling the earth. Chemical reactions in which sulphate aerosols participate result in the formation of ozone-depleting material.

Diverting a lava flow is highly difficult, although it can be done in specific conditions, as it was



in Vestmannaeyjar, Iceland, once. The best design of simple, low-cost barriers to redirect lava flows is still being studied.

Towns destroyed by lava flows

- Kalapana, Hawaii was destroyed by the eruption of the Kīlauea volcano in 1990. (abandoned)
- Koa'e and Kapoho, Hawaii were both destroyed by the same eruption of Kīlauea in January, 1960. (abandoned)
- San Sebastiano al Vesuvio, Italy Destroyed in 1944 by the most recent eruption of Mount Vesuvius during the Allies' occupation of southern Italy. (rebuilt)
- Cagsawa, Philippines buried by lava erupted from Mayon Volcano in 1814.
- The Nisga'a villages of Lax Ksiluux and Wii Lax K'abit in northwestern British Columbia, Canada were destroyed by thick lava flows during the eruption of Tseax Cone in the 1700s.
- Garachico on the island of Tenerife was destroyed by the eruption of Trevejo (1706)

CONCLUSION

Although lava flow emergencies draw worldwide attention, they have not been as thoroughly documented by scientists as other volcanic hazards, nor have they been systematically compared to identify research gaps, best practices, or vulnerability models. Additionally, in some cases the few cities and towns have been destroyed by the lava flow but all this destruction can be prevented by scientist if the communities were aware of lava and how it can cause damage to the nature and its surrounding. Furthermore, lava flow attribute data, as well as the context and decision-making surrounding lava flow modeling carried out during a crisis, are not always released. As a result, we advocate a bigger community debate about how to collect and categorize the requested data, which can help in gathering knowledge regarding lava flow impacts and societal effects, as well as best practices for dealing with lava flow disasters. There are few problems during the volcanic eruption and it can take care by following safety protocols and by taking some preventive measure during the volcanic eruption and after it. Our research also revealed that some evacuation protocols are more effective than others, that some lava flow mitigation techniques have worked, and that submerged land can be repurposed.



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TOMATO'S PHYTOPHTHORA DISEASE AND MEASURES TO CONTROL THEM IN GREENHOUSES

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ABSTRACT

One of the factors hindering the rich, high-quality and environmentally friendly yield of tomato plants grown in greenhouses of the Republic is the presence of various groups of microorganisms (fungi, bacteria, viruses) and various diseases caused by adverse environmental conditions, including phytophthora. An analysis of the literature on measures to combat them is given.

KEYWORDS: Tomatoes, Phytophthora infestans, fungal diseases, monitoring

INTRODUCTION

So far, the scientific basis of diseases of tomato plants in greenhouses and the types of fungi that cause them, their development, distribution laws and measures to combat them have not been developed. Positive resolution of the above issues is one of the most pressing issues of today.

The disease is caused by Phytophthora infestans oomycete fungus. In recent years, tomato phytophthora has become a common disease in greenhouses in Uzbekistan. In cool and humid weather, 60–70 percent of tomato fruits can be damaged. The disease begins during flowering plants. The leaf bands bend down and the leaves hang down; spots appear on the leaves, similar to burns in boiling water, which then turn brown or dark brown, then the leaf tissue becomes slightly pale and thin paper-like [3].

The disease begins during flowering plants. The leaf bands bend down and the leaves hang down; spots appear on the leaves, similar to burns in boiling water, which then turn brown or dark brown, then the leaf tissue becomes slightly pale and thin papery. In humid weather, a soft, thin, oozing mold layer appears around the spots under the leaves. At high humidity and warm temperatures the leaves can completely rot and almost all plants die. When the inflorescences are damaged, the inflorescences and petals darken and dry out. Infected twigs develop elongated or variable shape, reddish-brown spots, the twigs and leaves look like burns. On the fruits appear hard, irregularly shaped, brownish, slightly rough spots and sores on the surface. Such fruits quickly rot completely under the influence of secondary microorganisms. High humidity (rain, dew) and cool

temperature (10 -25°) are favorable conditions for the development of the disease.

The fungus overwinters in open fields in plant debris on the soil and in weeds belonging to the ovipositor family. The disease is also spread from potatoes and tomatoes in fields adjacent to the crop. The emergence of disease in nurseries is very dangerous; symptoms of the disease may not occur at high temperatures, they form phytophthora foci when transplanted into the open field [8].

METHOD OF DETERMINATION OF MUSHROOM TYPES IN HOSPITAL AIR

To study the prevalence of facultative parasitic fungal species that cause disease in the greenhouse, we used Petri dishes with Susa - if, Chapeka, potato agar, Bilay nutrient media. We placed them on top of the plates near the tomato and cucumber plants, placing the first plate on the ground and the rest every 0.5 m upwards. After 5 - 10 min, we covered the plates and allowed them to grow in the laboratory at a temperature of 23 - 25°C. From 3 to 4 days, we conducted observations every day. In doing so, we looked at the microscope with a small object from the back without opening the plates. Once the colonies were well grown, we transferred them to nutrient medium solutions in front of the flame with a sterilized microbiological loop and identified fungal species.

MEASURES AGAINST

Development and application of resistant and tolerant varieties; raising the grooves; pre-sowing seed treatment with an effective seed sprayer; crop rotation; not planting in fields where tomatoes or



potatoes were planted the previous year; planting in fields away from other potato and tomato crops; ensuring good wind circulation in the crop (timely pruning of excess branches, ventilation); giving the recommended minimum amounts of nitrogen fertilizers (these, especially nitrate forms, lead to a strong development of the disease); fungicide for prophylaxis of tomato plants with the appearance of the first signs of disease in the early potato crop during the growing season (mancotseb alone or in combination with metalaxyl, 0.2% ridomil, 0.5% captan, 0.4% copper chloride, 1% Bordeaux liquid and b.) spraying; it is recommended to remove plant debris from the field and dispose of it [5].

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