

SJIF Impact Factor : 7.001
ISI I.F Value : 1.241

ISSN:2455-7838 (Online)
DOI : 10.36713/epra2016



EPRA International Journal of
RESEARCH & DEVELOPMENT
(IJRD)

Monthly, Peer Reviewed (Refereed) & Indexed International Journal

Volume - 5 Issue - 12 December 2020



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International Online Journal

Volume: 5, Issue:12, December 2020

Indexed By:



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EPRA Publishing

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INTENSITY OF LEARNING A FOREIGN LANGUAGE: PURPOSE AND OBJECTIVE

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ABSTRACT

This article examines the features of intensive teaching foreign languages. Short-term foreign language training for adults is an interesting and methodologically relevant area of study. Achievements of intensive methods in the field of enhancing the processes of perception and assimilation of the material basis of communication, in revealing new reserves of its motivation and in the development of adequate forms of collective interaction should become the property of the school methodology as soon as possible in order to raise its authority and effectiveness, to increase the effectiveness of the educational process. A detailed study of intensive teaching of foreign languages in a language university opens up many opportunities for more than one researcher.

KEY WORDS: *methodology, factor, intensity, motivation, language center, training system, adult contingent*

DISCUSSION

The role of the English language in the modern world has changed significantly. English has become not just the language of the world community, there is a "globalization of the English language" [5], that is, all the peoples of the world can communicate with each other in one, well-known and understandable language - English.

The sphere of foreign language teaching methodology is undergoing constant changes. Experts constantly argue about which method of learning a foreign language is more effective. Proponents of the classical method prefer the traditional way of learning a language, since it is who trains all four basic language skills: speaking, listening, reading and writing.

The objective conditions of the modern socio-economic situation determine the need for the emergence of additional educational services and the corresponding institutions of additional education. The main factor here is the changing situation in the labor market, when almost any basic education requires knowledge of a foreign language, most often English. Another factor in the development of the system of additional educational services is the needs of adults themselves, sometimes dictated by motives. These may be needs for additional education, conditioned by the individual's desire for self-improvement, broadening the horizons of life, and the desire to gain greater self-confidence.

Currently on the agenda is the issue of scientific reasonable organization of mass short-term

teaching of foreign languages, the creation of new and diverse courses of teaching foreign languages, designed for a different contingent of students, taking into account the goals and objectives of teaching today, and also reflecting the changes taking place in the modern world; development of new programs, teaching methods, etc.

The ability to master a foreign language is largely degrees depend on a number of factors that must be considered when choosing techniques and teaching methods in each specific situation. Let's consider some of them.

It should be noted that such an approach to teaching a foreign language does not presuppose the assimilation (knowledge) of language units of various levels, but teaching communication in general. This is the main specificity of teaching foreign languages in intensive courses in language centers.

Intensive courses of teaching foreign languages in language centers involve the development of trainees' skills in practical language skills in a short time for communicative purposes, that is, to understand the speech of others and the free expression of their thoughts.

First of all, let us focus on the intensive method of teaching foreign languages. Intensive methodology is a training system that appeared in response to the demand of the times. In the most general form, these requirements can be reduced to the acceleration of the process of teaching foreign



languages with minimal energy consumption of the subject[1.p.188].

The main task of the intensive method of teaching a foreign language is to master, under the conditions of a tight time limit, a foreign language as a means of communication and a means of knowledge, to develop the skills and abilities of understanding oral speech in a foreign language at a normal (natural) or close to normal pace with practically unlimited everyday, social political and general scientific topics.[3]

Intensive teaching of a foreign language is maximally focused on creating a natural language environment, activating students and mobilizing their hidden psychological reserves. As T.I. Kapitonova, G.A. Plotkin and T.M. Teterin, this allows to significantly increase the volume of linguistic material reproduced in typical situations and freely transferred to new situations [8, p. 63].

Signs of intensive learning should also include increased attention to the organization of pedagogical communication in the classroom, the socio-psychological climate in the group, the creation of adequate

Teaching foreign languages at intensive courses in language centers has its own specifics, which is different from teaching at school and university.

Thus, the main contingent of students in intensive courses at language centers is most often adults who study a foreign language in order to carry out professional activities, mainly abroad.

The students of the courses are not students, but individuals who try to live with dignity those few hours of class when they speak a foreign language. And to make them want to talk, they are constantly attracted to participate in changing events. The entire training course is designed for three months (with interruptions). After such a course, a person can freely express himself in a foreign language and solve his life problems. The correct application of the intensive training methodology allows to achieve impressive results in teaching a foreign language, both in terms of the volume of material learned and in terms of training.

The problem of creating intensive foreign language courses that will allow adults to master basic communication skills in the target language as soon as possible is inextricably linked with the problem of choosing the most optimal method of accelerated learning.

Based on the main task of intensive training of the adult contingent - to master the skills of foreign language communication in the shortest possible time, two main factors can be distinguished that characterize intensive training:

1) the minimum required training period to achieve the goal (future speech activity) with the maximum amount of training material necessary for this purpose and its corresponding organization;

2) The maximum use of all reserves of the student's personality, achieved under conditions of special interaction in the study group with the creative influence of the teacher's personality [4, p. 67].

Based on the existing in psychology and teaching methods giving foreign languages a point of view, according to which interconnected learning can be carried out by purposefully forming general skills in one type of speech act and transferring them to another, you can make a list of characteristics common to prepared and unprepared speech:

- The ability to consistently develop thoughts expressed in a foreign language, drawing conclusions and generalizations;
- The ability to use arguments corresponding to the communicative intention in foreign language statements;
- The ability to fully express thoughts expressed in a foreign language;
- The ability to express in a foreign language a subjective and evaluative attitude to the subject of speech.[7]
- In the context of teaching adults to speak a foreign language on CCFL, the specifics of the selection of educational material are as follows:
- The educational material should be necessary and sufficient for the formation of strong foreign language skills and abilities,
- It must correspond to the interests, as well as the level of intellectual, linguistic and general development of adult learners,
- Educational material must be authentic,
- The educational material should carry information about the cultural realities of the countries of the target language,
- It must correspond to speech actions carried out to solve problems of oral speech foreign language communication,
- Linguistic and speech material should ensure the formation of an active and passive stock, i.e. the productive and receptive assimilation of it by adults is sought.
- The selected teaching material is organized according to following principles:
- The principle of information novelty,
- The training material is organized into speech blocks within the framework of a thematic-situational approach.
- The teaching material is organized concentrically,
- The volume of training tasks should be sufficient for group training.

As we noted above, students of courses in language centers are mostly adults with non-philological education. In rare cases, they have experience in mastering a foreign language. In addition, it must be admitted that their basic knowledge in the



field of their native language leaves much to be desired, since they have long been forgotten. In such conditions, the initial courses of teaching a foreign language provide the listeners with the practical skills of oral speech, but do not guarantee its literacy.

Certain difficulties in such conditions also arise on a psychological basis, since the students of accelerated foreign language learning courses are adults with a certain social status. As noted by S.I. Melnik, "we have to train highly qualified specialists in their field, people with a well-established system of views on training. Regardless of what field of science or technology our students specialize in, they are accustomed to the fact that any training course is a strictly defined system of knowledge that must be understood and assimilated.

Therefore, the very obvious fact - when mastering a language, it is important to remember, and not to understand - seems column to them. Hence the latent or explicit opposition to the teacher's attempts to introduce and consolidate this or that material without explaining, a difficult transition to the position of an uncritical imitator, a painful reaction to the teacher's demands to believe him and to obey him without complaint "(Melnik, 1974, 185-86) [2].

Thus, the listeners of courses in language centers are mostly adults with non-philological education. In rare cases, they have experience in mastering a foreign language. In addition, it must be admitted that their basic knowledge in the field of their native language leaves much to be desired, since they have long been forgotten. In such conditions, the initial courses of teaching a foreign language provide the listeners with the practical skills of oral speech, but do not guarantee its literacy.

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A STUDY ON CUSTOMER AWARENESS AND USAGE OF E-BANKING SERVICES THROUGH MOBILE PHONES WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Mobile communication has increased so much in today's world that people are using and doing mobile transaction at a large scale. Mobile commerce is one of the top most emerging concepts which is coming into the market. Mobile banking is a subset of electronic banking which underlies not only the determinants of the banking business but also the special conditions of mobile commerce. It is the latest and most innovative service offered by the banks. The major banks in India are increasingly providing services through electronic channels such as ATMs, internet banking, Tele-banking and mobile banking. The research is an attempt to study the consumer awareness on mobile banking & perception about the same. For the purpose of the study a convenient sampling survey was conducted among 120 respondents in Coimbatore city with the help of e-questionnaire. The tools used for this study are simple percentage analysis, ranking analysis and Likert Scale.

INTRODUCTION

The world is changing is changing at an increasing rate and technology is considered to be the key driver for these changes around us. Slowly but steadily, the Indian customer is moving towards new banking services like internet banking and mobile banking. Day by day increasing change in technology world, it leads to improve e-banking services of various banks. Now-a-days people are educated more than olden days, today human lives become machine oriented and they don't have enough time to visit bank branch than ever before. Mobile phones usage has spread in a very broad manner both in developed and developing countries.

The consumer's acceptance of the usage of mobile banking services depends on many factors, including motivating factors that drive towards the acceptance of such usage such as: (Pursuance, speed of transaction, communication ease of use and assurance). These five

factors included in the research represent the motivating factors that the study proves their positive impact on the usage of mobile banking services.

Banking systems always have an important role to play in every country's economy. It is vital for any nation as it provides for the needs of credit for all the sections of the society. India is not only the world's largest independent democratic country but it is also an emerging economic giant. The growth potential of India is based on its strong banking institutions. The infusion of information technology in the banking sector has completely revolutionized how the banking sector operated. In order to survive in the new globalized world, banks had to opt for this new change. Banking in India has been through a long journey. It has seen a number of changes due to the technology and innovation. Arrival of cards, introduction of Electronic Clearing Service (ECS) introduction of Electronic



Funds Transfer and concept of online banking and mobile banking are the various novelties which took place in the banking sector. Now all the banks have started with the concept of multi-channels, like ATMs, credit cards, debit cards, telephone/mobile banking internet banking etc., The role of banking has now changed from a mere financial intermediary to service provider of various financial services under one roof acting like a financial supermarket.

STATEMENT OF PROBLEM

The e-banking offers various service to the customer's and the facilities of internet banking services can be carried out from their comfort of their home and office with only the usage of internet. The e-banking services help to check the accounts and do all the transactions through online 24/7 without any hassle. They can transfer funds to other accounts maintained with any bank in the world, hence this study focuses on the different services of e-banking and customer's convenience towards it.

OBJECTIVES OF THE STUDY

- To evaluate the awareness of e-banking services through mobile phones among the consumers.
- To identify how frequently e-banking is used by the respondents.
- To determine the factors that motivate the customer to use e-banking services through mobile phones

RESEARCH METHODOLOGY

SOURCE OF DATA

- Primary data is used in the study. It is original data for the purpose of collection of primary data, e-questionnaire were filed by the respondents. The e-questionnaire comprises of close ended.
- Secondary data was also collected for the study books, journal and magazines were referred for this purpose from the library to facilitate proper understand of the study

Research Design

- Sample technique
A convenient sampling technique was adopted for data collection
- Sample size
Sample size taken in this was 150 people
- Area of the study
The area of the study will be confined to Coimbatore city

Tools for analysis

- Simple percentage analysis
- Rank correlation
- Likert Scale Analysis

LIMITATIONS OF THE STUDY

- The study confined 120 respondents.
- The data was collected with 3month time period.
- The consumer's attitude may change in future

REVIEW OF LITERATURE

Dr. N. Yesodha Devi, J. Nancy Sebastina, Dr. V.S Kanchana (2011) Researched a study on customer awareness, opinion reasons for opting mobile banking. The study is based on primary data collected 249 respondents by means of a questionnaire. Random Sampling Technique was applied and statistical tools like Percentage Analysis, ANOVA and T-test, Kendall's coefficient of concordance was carried out in order to reveal the results of the study.

Rashmath Safeena, Hema Date, Abdullah Kanmani and Nisar Hundewale (2012) examined Technology Adoption and Indian Consumers: Study on Mobile Banking. This study deals with the term M-Commerce. The major finding is that bank consumers are likely to adopt mobile banking when it is easy to use. The result of this study shows that perceived usefulness, perceived ease of use, consumer awareness and perceived risk are the important determinants of mobile banking adoption. The Study concludes that majority of consumers are accepting online banking because of many favorable factors.

Prof. Amit P. Wadhe and Prof. Shamrao Ghodke (2013) has done a study on consumer awareness & perception towards usage of mobile banking. The main objective of this study is to find out whether consumers are aware of mobile banking. The result of was found to be that the consumers in the age group of 18-25 years are the ones to adopt mobile banking. In all other groups there is less acceptance of mobile banking.

T. Geetha & V. Malarvizhi (2015) Banking institution are facing competition not only from each other but also from non-banking financial intermediaries as well as from alternative sources of financial. The paper investigates the factors which are affecting the acceptance of e-banking services among the customer and also indicates level of concern regarding security and private issues in India context. Primary data collected from 200 respondents through a structured questionnaire. The findings shows that if



banks provide them necessary guidance and ensure safety of their accounts, customers are willing to adopt e-banking.

- Percentage Analysis
- Ranking Analysis
- Likert Scale Analysis

DATA ANALYSIS & INTERPRETATION

The collected data were grouped, edited, tabulated in a master table and analysed using the following statistical tools.

PERCENTAGE ANALYSIS

TABLE SHOWING WHY HAVE YOU EVER USED ONLINE BANKING SERVICES BY THE RESPONDENTS

S. No	Categories	No. of Respondents	Percentage (%)
1	Do you have internet	45	37.5
2	Don't trust internet services	21	17.5
3	Online services don't enable me to do what I went to do	22	18.3
4	I prefer to have personal human related	17	14.2
5	Find the process too difficult	15	12.5
	TOTAL	120	100

INTERPRETATION

The table shows that 37.5% of respondents do not have internet, 17.5% of the respondents don't trust internet services, 18.3% of the respondents online services me to what I want to do, 6% of the respondents I prefer to

have personal human related.15% of respondents find the process too difficult.

INFERENCE

Majority 37.5% of respondents do not have internet.

RANKING ANALYSIS

TABLE SHOW WICH TYPE OF SERVICES MOSTLY YOU USING

S. No	Particulars	1	2	3	4	5	6	7	8	TOTAL	RANK
1	Balance and transaction history services	15 (8)	18 (7)	12 (6)	15 (5)	16 (4)	14 (3)	9 (2)	3 (1)	756	2
2	Online fund transfer	20 (8)	17 (7)	13 (6)	13 (5)	8 (4)	15 (3)	17 (2)	3 (1)	788	1
3	Card to card fund transfer	13 (8)	14 (7)	17 (6)	12 (5)	5 (4)	5 (3)	11 (2)	13 (1)	667	4
4	Lock /activate debit card ATM	10 (8)	10 (7)	10 (6)	13 (5)	9 (4)	17 (3)	10 (2)	19 (1)	615	6
5	Request a cheque book	15 (8)	10 (7)	9 (6)	10 (5)	14 (4)	11 (3)	9 (2)	14 (1)	645	5
6	Shopping	9 (0)	6 (7)	8 (6)	10 (5)	11 (4)	17 (3)	17 (2)	12 (1)	584	7
7	Share payment	4 (8)	11 (7)	17 (6)	7 (5)	10 (4)	8 (3)	20 (2)	10 (1)	589	8
8	Railway pass /ticket	12 (8)	17 (7)	10 (6)	16 (5)	15 (4)	7 (3)	9 (2)	10 (1)	694	3

**INTRODUCTION**

From the table, it is understood the online fund transfer is ranked 1, balance transaction history services is ranked 2, railway pass /ticket is ranked 3, card to card transfer is ranked 4, request a cheque book is ranked 5, lock active debit card ATM is ranked 6, shopping is ranked 7, share payment is ranked 8,

INFERENCE

The online fund transfer have been rank 1 by the customers are mostly using.

LIKERT SCALE ANALYSIS**TABIL SHOWING PERCEIVENCESS OF INTERNET BANKING SYSTEM**

S.NO	FACTORS	NO. OF RESPONDENTS	LIKERT SACLE VALUES(X)	TOTAL
1	Strongly agree	5	41	205
2	Agree	4	37	148
3	Neutral	3	31	93
4	Disagree	2	9	18
5	Strongly Disagree	1	2	2
	TOTAL		120	466

$$\begin{aligned} \text{LIKERT SCALE} &= \frac{\sum(fx)}{\text{Total number of respondents}} \\ &= \frac{466}{120} \\ &= 3.8 \end{aligned}$$

INTERPRETATION

The likers scale value is greater than the mid value (3) these the respondents are agree with the factors with the factors.

INFERENCE

The respondents are agreeing with the factors.

FINDINGS**SIMPLE FROM PERCENTAGE ANALYSIS**

- Majority 63.7% of the respondents are male
- Majority 40.8% of the respondents are in the group of 20 to 30 years.
- Majority 73.3% respondents are unmarried.
- Majority 71% of the respondents are in the family of 3 to 5 members.
- Majority 62.2% of respondents are at UG level.
- Majority 45% of the respondents are unemployed.
- Majority 45% of the respondents are having monthly income of less than Rs.10,000.
- Majority 56.7% of the respondents are using of e banking from multiple restaurants.
- Majority 37.5% of respondents are do not have internet.
- Majority 39.2% of respondents are once per month.

- Majority 37.5% of respondents are Better information and 24 hours services
- Majority 65% of the respondents are satisfied the using of e banking from multiple restaurants.
- Majority 45% of the respondents are encourage of rewards.
- Majority 31.1% of the respondents are SBI.

FINDING FROM RANK ANALYSIS

- The online fund transfer have been rank 1st by the customers are mostly using

FINDING FROM LIKERT ANALYSIS

- The respondents strongly agree with the perceivenceess of internet banking system
- The respondents strongly agree with the new technology.
- The respondents are not satisfied with the factors.

SUGGESTIONS

1. Online consumers are mainly concerned on safety issues, so the banks should educate their customers on the safety use of their passwords and pin numbers and it should insist the consumers that they change the passwords and



pin numbers frequently so no unauthorized fraudulent practices happen in the e-banking.

2. To increase the awareness of consumers banks should advertise and conduct special awareness programs to make e-banking services more popular among consumers.
3. Bank's should try to give proper training or other solution to solve this problem and try to improve their service level.
4. If banks takes more efforts in reaching to consumers and give information about mobile banking, then more consumers will use mobile banking.

CONCLUSION

The result of the study shows that perceived usefulness, consumer awareness and perceived risk are the important determinants of mobile banking adoption. Majority of the consumers are aware that mobile banking is now available in India, but very few are aware and familiar with various banking transactions that can do with the help of mobile banking, also majority of the consumers have heard about mobile banking but very few have actually used it. Consumer awareness has significant impact on entreat to use in mobile banking. Consumer's are interested because they have heard about it somewhere and think that with the help of mobile banking, they can do there banking transactions anywhere and anytime. Consumer' soften come to know about new products or services through unofficial channels like family, friends and colleagues and through Internet. Thus, word of mouth is one of the strong communication channel which provide information to various consumer groups. On the whole it can be said that technology is now enabling consumers to do their banking transactions just by clicking some buttons on mobile or by sending SMS. So this is acting as a pull fact or to increase adoption of banking.



A STUDY ON CUSTOMER SATISFACTION TOWARDS BATA FOOTWEAR WITH SPECIAL REFERENCE TO TIRUPUR CITY

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ABSTRACT

Bata India is the largest retailer and leading manufacturer of footwear in India. The survey study on “Customer buying behaviour towards branded casual shoes” has been conducted to observe the preference of customer. India ranked second between the footwear producing countries then to China. By increasing popularity of customer relationship management can customer are now placing more importance on customer satisfaction and their relationship with customers.

INTRODUCTION

Bata India is the largest retailer and leading manufacturer of footwear in India and is part of the Bata shoe Organization. The parent company Bata was founded by three sibling; Tomos Bata, his brother Antonin and his sister Anna with a small inheritance in the town of Zlin, Czechoslovakia on August 24, 1894. Initially known as Bata Shoe Company, it was one of the world's first shoe “manufactures”; a term of stitchers shoemakers creating footwear not only for friends and local residents, but also for distance retail merchants.

The survey study on “Customer buying behavior towards branded casual shoes” has been conducted to observe the preference of customer. This system of education is highly appreciated as it provides with the opportunity to acquaint with the outside world. Customer buying behavior is enormous, and highlights the importance of the customer at the center of the marketer's universe.

Customer satisfaction is one of the prime objectives in present retail sector. With the advent of different

market players the inclination for usage of a particular brand has increased. The American Marketing Association defines a brand as “A name, term, sign, symbol or design or a combination of them, intended to identify the goods and service of one seller or group and to differentiate them to those for competitors”.

The research was aimed to explore the pattern of brand preference towards domestic and foreign footwear products and its antecedents taking age and gender as a case among Dire Dawa administration residence. As the world is turning into a global village, new products from abroad are finding their way into the country, the trend of consumption by native people is changing becoming more prone to buying foreign and international brands than the local ones since the advance in communication and information system technology have shrunk distance and homogenized the values, fashion and preference and attitude of the world's population.

In this shoe factory, where Thomos' brother Anthony was registered as its owner, Bata continued in the tradition and produced exclusively Wallchian



stitched, coarse-woollen footwear. The production was organized so that in the workshop components of footwear were cut and upper sides tailored, which were then passed to home-working workers and craftsmen living in Zlin and the surrounding areas, who complete them. This was the usual procedure of work in small shoe factories.

The Footwear industry section of the leather industry in India. India ranked second between the footwear producing countries then to China. The industry is labor intensive and is concentrated in the small and cottage industry division. Analyze of Customer satisfaction has become a very important component in giving outstanding customer service. By increasing popularity of customer relationship management can customer are now placing more importance on customer satisfaction and their relationship with customers. Many of the manufactures are adjusting flexible strategies to attract customer from various classes.

SCOPE OF STUDY

This project is made to give an approach for calculating market structure in terms of customer satisfaction towards purchase of Bata goods. To market out why customer prefer Bata. To distinguish customer satisfaction level towards Bata. To learn brand awareness. The result of the study will help out Bata Company to rectify their fault and to come out with new preparation and promotional activity which help to create a good place in footwear industry again.

STATEMENT OF THE PROBLEM

Customer satisfaction assessment of footwear industry in Bangladesh: A study based on Bata shoe company (Bangladesh) Ltd. "To identify customer satisfaction level of Bata and compare Bata with other shoe. Since the shoes are important fashion product the quality and durability of the shoes should be taken into consideration. Hence consumer satisfaction and preference towards Bata shoe should be analyzed. The study consumer behaviour helps everybody as all are consumers. It is essential for marketers to understand consumer to survive and succeed in this competitive marketing environment.

OBJECTIVES OF THE STUDY

1. To understand the buying behaviour of the customer towards Bata products.
2. To analysis the level of satisfaction towards Bata products.
3. To determine the major factors influencing the customers to buy Bata products.

4. To know customer problem and opinions about Bata products.

RESEARCH METHODOLOGY

Research methodology is the particular approach or technique used to identify, select, process, and analyze facts about the concern. In a research paper, the methodology section allows the reader to critically evaluate a study' average validity and reliability.

GEOGRAPHICAL AREA

The survey carried out with the peoples located in Tirupur city.

SAMPLING DESIGN

SAMPLING SIZE

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

SAMPLING METHODS

The sampling method indicates how the sample are selected from the universe. The researcher has adopted convenience sampling for research. Convenience is method under probability sampling. The researcher selected the respondent based on his convenience.

DATA COLLECTION METHOD

PRIMARY DATA

It acts the main source and was collected through questionnaire.

SECONDARY DATA

It is collected from the journal, articles, etc....

TOOLS USED FOR DATA ANALYSIS

1. Simple percentage analysis.
2. Ranking correlation.

LIMITATION OF THE STUDY

1. The sample respondents taken for the study is limited 120
2. Due to lack of time, the study has been destructed to Tirupur city only
3. The respondents may not be true in filling up the questionnaires.

REVIEW OF LITERATURE

Taposh Ranjan Sarker(2017), "Customer perception towards two giant footwear companies of Bangladesh: BATA" A study on standard procedure and time setting for servicing of single jersey and double jersey knitting machine is done in this work. Servicing is a very vital point for keep machine performance well and for better fabric quality. Here we worked on single



jersey and double jersey knitting machines servicing procedure and time setting.

Prof. Mr.D. Nithyananth, Mr.K.R. Rajkumar(2016), “A study on Marketing Research on customer satisfaction of VKC product” this methodology explain about the overall objective research design, data collection method, sampling procedure, construction of questionnaire tools of analysis. Data constitute foundation and the statistical analyze and interpredation, the first important step in the project work is to obtain data collection by the primary method and suggested the customer like a price, offers, quality of VKC is good and satisfaction.

Aiswarya Krishnadas(2016), “A study on customer satisfaction towards VKC footwear with special reference to Palakkad town” Through this study the researcher analysed the customer satisfaction towards VKC footwear. Most of the customer are satisfied with the quality and durability of VKC footwear. The company can concentrate on new design and give new offers for attracting the customers to overcome competitions.

HISTORY OF BATA FOOTWEAR COMPANY

Bata brand is a multinational footwear and fashion accessory manufacturer footwear and retailer based in Lausanne, Switzerland. A family-owned business, the company is organized into three business units: Bata, Bata industrial and AW Lab. The company has a retail presence of over 5,300 shoes in more than 70 countries and production facilities in 18 countries.

The T. & A. Bata Shoe Company was founded on 24 August 1894 in the Moravian town of Zlín, Austria-Hungary (today the Czech Republic) by TomasBaťa, his brother Antonín and his sister Anna, whose family had been cobblers for generations. The company employed 10 full-time employees with a fixed work schedule and a regular weekly wage.

In the summer of 1895, Tomas was facing financial difficulties. To overcome these setbacks, he decided to sew shoes from canvas instead of leather. This type of shoe became very popular and helped the company grow to 50 employees. Four years later, Bata installed its first steam-driven machines, beginning a period of rapid modernisation.

FORMULA

$$\text{Percentage} = \frac{\text{No. of. respondents}}{\text{Total no. of. Respondents}} * 100$$

In 1904, Tomos read a newspaper article about some machines being made in America. Therefore, he took three workers and journeyed to Lynn, a shoemaking city outside Boston, in order to study and understand the American system of mass production. After six months he returned to Zlín and he introduced mechanized production techniques that allowed the Bata Shoe Company to become one of the first mass producers of shoes in Europe.

Its first mass product, the “Batovky,” was a leather and textile shoe for working people that was notable for its simplicity, style, light weight and affordable price. Its success helped fuel the company’s growth. After Antonin's death in 1908, Tomos brought two of his younger brothers, Jan and Bohus, into the business.

Bata shoes were considered to be excellent quality, and were available in more styles than had ever been offered before. Bata India ltd is engaged in the business of manufacturing and accessories through its retail and wholesale network. The company operates in two segments 1. Footwear & 2. Accessories and investment in joint venture for surplus proper development its product include leather footwear rubber and canvas footwear & plastic footwear.

ANALYSIS AND INTERPRETATION OF THE STUDY

The data collection from the samples have systematically applied and presented in the tables under various heading in the following pages. They were also arranged that a detailed analysis can be makes as to present suitable interpretation for the same. The data have been analysed by using the following statistical tools.

- Simple Percentage Analysis
- Ranking Correlation

SIMPLE PERCENTAGE ANALYSIS

The percentage analysis is used, mainly to find distribution of the customer in each category as the values are expressed in percentage, it facilities comparison. It is the method to represent raw streams of data as a percentage (a part in 100-percent) for better understanding of collected data.

**TABLE SHOWING THAT WHICH OF THE FOLLOWING IS PREFERRED MOST BY RESPONDENTS**

S. NO	Factor	Number of Respondents	Percentage (%)
1	Formal	25	21%
2	Casual	44	36%
3	Sports	35	30%
4	Any other	16	13%
	Total	120	100%

*(Source : Primary data)***INTERPRETATION**

The above table show that 21%(25) respondents are preferred Bata formals, 36%(44) respondents are preferred Casual, 30%(35) respondents are preferred Sports, 13%(16) respondents are preferred Any other Bata footweas.

INFERENCE

- Majority 36%(44) of the respondents are preferred by Casual

TABLE SHOWING WHAT IS THE AVERAGE LIFE SPAN OF BATA FOOTWEARS FEEL ABOUT RESPONDENTS

S. No	Life Span	Number of the Respondents	Percentage (%)
1	6 month – 1 years	36	30%
2	1 years – 2 years	67	56%
3	Above 3 years	17	14%
	Total	120	100%

*(Source : Primary data)***INTERPRETATION**

The above table show that 30%(36) respondents are average life span of bata footweas 6 month – 1 years. 56%(67) respondents are average life span 1 years – 2 years, 14%(17) respondents are average life span above 3 years.

INFERENCE

- Majority 56%(67) respondents are average life span 1 years – 2 years.

RANK ANALYSIS

Ranking is a relationship between a set of items such that, for any two items, the first is either 'ranked higher than', 'ranked lower than' or 'ranked equal to' the second. In this study, ranking analysis is applied for the responses collected which are ranked from (10 to 1) towards various sources of information by the respondents and also for the performance towards online delivery app and the problems faced by the respondents while ordering food online from the applications.

**TABLE SHOWING RANK THE FACTORS WHICH INFLUENCE RESPONDENTS TO PURCHASE BATA FOOTWEAR**

Particular	1(5)	2(4)	3(3)	4(2)	5(1)	TOTAL	RANK
Collections	48 240	39 156	19 57	10 20	4 4	120 477	I
Guaranties & Warranties	22 110	47 188	29 87	17 34	5 5	120 424	II
Privacy of information	26 130	31 124	40 120	19 38	4 4	120 416	III
Service	29 145	29 116	32 96	23 46	7 7	120 410	IV
Responses	29 145	30 120	20 60	22 44	19 19	120 388	V

(Source : Primary data)

INTERPRETATION

It is observed from the above table that collection ranked first, Guaranties & warranties ranked second, privacy of information ranked third, service ranked fourth and response ranked fifth.

FINDINGS & SUGRESSIONS AND CONCLUSIONS

FINDING

SIMPLE PERCENTAGE METHOD

- Majority 54%(53) are male respondents.
- Majority 68(56%) of the respondents age 19-25 years.
- Majority 74%(89) of the respondents are unmarried.
- Majority 71%(85) of the respondents are between 3-5 members.
- Majority 77%(92) of the respondents are Under Graduates.
- Majority 31%(38) of the respondents are unemployed.
- Majority 40%(48) of the respondents monthly income upto Rs. 10,001 to Rs. 20,000.
- Majority 66%(80) of the respondents are choosing the reason of Quality.
- Majority 36%(44) of the respondents are preferred by Casual .
- Majority 75%(90) of the respondents are comfortable with Bata footwears.
- Majority 41%(49) of the respondents are known about Bata footwear by friends and relatives.
- Majority 64%(78) respondents are convenient of purchase to cash.
- Majority 62%(74) of the respondents are spend on to purchase 500-1000.
- Majority 56%(67) respondents are average life span 1 years – 2 years.

- Majority 72%(87) respondents think that location of bata showrooms at the right location.
- Majority 54%(65) of the respondents are buying Bata footwear once in six month.

RANKING METHOD

- It is observed from the above table that collection ranked first, Guaranties & warranties ranked second, privacy of information ranked third, service ranked fourth and response ranked fifth.

SUGGESTIONS

- The advertisement for Bata product can be further increased, hence it can promote sales.
- The variety of the product can be increased and further development.
- The availability of Bata product can be increased, thus every people can make use of it.
- If promotion of Bata footwear increases in rural areas it may increase in sales.
- Large production of Bata footwear may increase the its availability and sales throughout the year.

CONCLUSION

In modern economy, it is very important to know about the customer satisfaction of any product. The study shows that the customer are satisfied in using the Bata product. The brand attracts and influence to buy the Bata footwear products. The quality, availability and the variety are also the important factors that influence the people to buy the Bata product. Hence Bata footwear are waterproof it may used for all seasons. Major reason for its profitability is its long lasting quality. It is consider to be one of the biggest in



the organization footwear section. It is also largest branded PU footwear manufactures in India. Most customer are satisfied with the Brand name, quality and durability of Bata footwear.

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SOME COMMENTS ON THE MEETING OF SUFI ALLAYAR AND MASHRAB

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ABSTRACT

This article presents an analysis of scientific comments on the meeting of the great thinkers and Sufists Sufi Allayar and Boborahim Mashrab.

KEY WORDS: *Sufi Allayar, Boborahim Mashrab, Tangri, Rumi, Shams Tabriziy, Quran, hadith, saint, Sufist, educated, mentor, scholar, Kattakurgan, Kabadiyon.*

DISCUSSION

Literary scientist Mirzo Kenjabek gave the following points about meeting Sufi Allayar and Mashrab: this is meeting two sea unification, two great contemporaries, two murshidi perfect, two spiritual darga, two scientists, two orif, two lovers, two poets.

Majma-ul-Bahraini - the address where the Quran was seen with the expression, Hazrat Khizr alayhissalam and Hazrat Musa alayhissalam. "It is said that the two seas are actually the ones of Musa and Khizr alayhissalom. Khizr alayhissalom-the sea of external sciences, Musa alayhissalom-the sea of apparent sciences, he says. In the place of Mavlano Jalaliddin Rumi and Shams Tabrizi in the city of Kunyo, a monument is also installed, saying that the two seas are united place. Undoubtedly, the Prophet himself is the one who united the two seas-zahir and batin, sharia and sect in his body. In Mashrab is more of a part of sect science."

The story of the Samarkand literary critic Erkin Musurmanov is one of the literary critics who wrote a pen about the work of Boborahim Mashrab and in subsequent years. He thought about Sufi Allayar and Mashrab and gave the following information: Sufi Allayar is one of the largest representatives of Uzbek literature. Prior to us, the poet had such works as "Маслакул муттақийн" ("Тақволилар маслаги"), "Муродул орифин" ("Орифлар муроди"), "Махзанул мутеъин" ("Мутеъинлар хазинаси"), "Саботул ожизин" ("Ожизлар саботи"). Its literary heritage is widely spread not only in Central Asia, but also among the peoples of the Caucasus, Siber, Turkey and the people's Republic of China living in the territory of the Xinjiang Uighur autonomous district .

In the science of decency, the expression al-mujazul is used in relation to classical texts. This phrase, which itself is short, concise - it means but miraculous, helps us to explain why in a little less than three hundred years it is necessary to write three review books, each of which is in the status of an independent work, to the work "Sabotul ojizin". The first part of the phrase refers to the form of a miracle, the second-to the meaning of a miracle. It turns out that many meanings, each of which gives meaning to several sentences, are beautifully placed in one sentence, called javomi'ul kalim. Since the Quran and Hadith are in the same style from beginning to end, they have admired the hearts, admired the minds. The charm of the same style prompted scientists, writers to contemplate, incessantly calling himself. Sufi Allayar, faithful to the tradition of ancestors, also worked in the spirit of this charm.

Mazjub Namangoni's work "Tazkiratu-l-avliyo" gives the following information about his life opposite Mashrab: "Devonai Mashrab received his suluk scholarship from the Ofokhuja. It was from the little caliphs. But he came across and stood for four years. The winner was detailed from the interview of his suluk Khujam Poshsho. One day, asked from Khujam Poshsho: "Is knowledge better than the Sufi Allayar or is knowledge occupied by Devonai Mashrab?" Khujam Poshsho said: "Sufi Allayar knowledge is such that he can teach it to the students in madrasahs. The knowledge of the Devonai Mashrab is science, who is only accessible to some from the conversation of the holy."

Inoyatulla Suvonkulov, who conducted a scientific research on the work of Sufi Allayar, published a small scientific work of the meeting kalandar Mashrab and Sufi Allayar. In it, the



researcher stated that the scientist met Mashrab with Sufi Allayar twice in Kattakurgan, the third time in the Kabodiyon. It is also worth remembering the legend that Mashrab was once in Samarkand. In Samarkand there was a fortress of Safo Khoja and two more neighborhoods named "Mullo Kalandar", "Eski Kalandar". When Mashrab came to Safo Khoja, it was the moment when he returned from the pilgrimage and takya was being built at the address where he lives. Safo Khoja worked together Mashrab in the construction of the mosque. Safa Khoja brick collect and Mashrab brick and mud sticking out while the crawl. Then it turned out that Safo Khoja tied her to a small tree. And the one who leaned on the tree and bent it, the same tree grew up bent, now they call it a "healing tree". Patients passing under the same tree wish themselves healing, childless. And Mashrab when the third time came to the Kattakurgan, the Sufi Olloyor was at the cemetery. We read such lines in one of the gazelles of Mashrab:

Топмасак Сўфи изин Каттақўрғона
юриб,

Хўш, Оллоҳёр деб азми Ҳисор истар
кўнгил .

In the book of the miracle of Ishoq Bagistani "Tazkirai kalandaron", where he met at the cemetery in 1710 year with the famous Sufi Olloyor, quoted him as follows: "We came to Kabodiyon together with Shah Mashrab. Kabodiyon has been a shrine since ancient times. Mawlana Nasir Khisraw was born here."

"The king and seven caliphs and the poor came again to the takyahouse of Qabodiyon. Shah Mashrab's going to the cemetery became popular among country at little opportunity. After a little opportunity it became known that while the eshani Sufis were there, after a while two Eshani Sufis' student came and told him to serve the king, they said, "O King kalandar, eshani Sufi of pirim will call you to their locks." Shoh Mashrab: after the pleasing early prayer Juma, we will go to the eshon hazrati Sufi."

Sufi Allayar will meet Mashrab.

The last meeting between the two great poets was a conversation that opened their worldview. In this question-answer, it was revealed how much the philosopher Mashrab went up as a scientist, and even the great question of the Sufi Allayar was helpless before his reasoning. The soul of eshon Suphi Olloyor Shah Mashrab, who propagated the main part of his activity through artistic speech among the religious ahkomlarni people, listened to the words of love, which shred their inner understanding, as if the world had set fire to him. These were the conclusions that Shoh Mashrab made about life, existence and the hereafter .

After greetings, Sufi Allayar turned to Shah Mashrab and said: "Mashrab as a poet is famous to

the world. I dreamed of communicating with you, the God conveyed this dream. Welcome!" he says. Then there will be a strange conversation between the king and the prophet. In between, the Shoh Mashrab says, "O my sufi, you have been flattering the pulisirost all your life. And Huzuriy means flattering to hell. Is not hell and the pulisirost present in the same light in the same light? Child the past from the beginning of man's life to stand on the road itself-do; is it not less than the suffering of hell that the unjust have fallen on his head, suffering, and countless calamities? My sufi, take a look under your feet "pulisirost" and hell is there in that."

Mashrab read this gazal by turning to the Sufi Allayar:

Англа бу сўзни эй санам, ошиқи муддао
ўзум,

Асло юракда бағри йўқ дунёда, бедаво
ўзум.

Sufi Allayar and the people around begin to ask for forgiveness from the Mashrab debates. Then the Sufi Allayar turned to the shoh Mashrab and said: "Mashrab, do not go into sin. Allah created heaven and hell for the righteous and unbelieving servants. It is obligatory for both you and us to warn unaware servants of this fact." Then the shoh Mashrab exclaimed, "O my sufi, if the truth be done, the hell will be filled with all sinners, and there will be no place for them to stand before, and the angels of doom will not come out of the fire of their works. And anesthetic remains empty. Now that there is a soul in the flesh, it is better to repent about the concerns of this light world..."

Mashrab will be a guest in Kabodiyon for more than a month. The people have great respect for Mashrab. Literary scholar I.Suvonkulov commented on the great priestly conversation between Sufi Allayar and Mashrab: "Sufi Allayar and Mashrab were great propagandists of the Naqshbandi sect. The Sufi Allayar believes that Allah has a strong belief in both his hell and paradise, and that those who fall into sin in this world will inevitably burn in hell and be deprived of Allah's mercy. That is why he propagates the Shariah with the intention that Muslim slaves should be educated in Islam." Mashrab, on the other hand, goes through the Shari'a and serves in the way of the sect with his works. It promotes universal ideas, honors man. It motivates him to purify his heart. He strives for the sect. Sufi Allayar has created in various genres of lyrics. As the orientalist and literary scholar Shukhrat Sirojiddinov quotes: The main part of his major works in the religious spirit is written in masnavi form. He created his lyrical works in the form of quatrains, ghazals, tuyuq, soqiynoma, masnaviy. By the 17th and 18th centuries, the Naqshbandi sect had developed both length and breadth. Sufi Allayar also creatively used these qualities of the Naqshbandi sect in his works. Not



only that, he created a great philosophical work called "Murad ul-Arifin", which enriched this doctrine with new ideas, new considerations. The merit of Sufi Allayar is that if our forefathers such as Khoja Ahror Wali, Mahdumi Azam and Boborahim Mashrab set an example in applying the teachings of the Naqshbandi sect to social life, schools, madrassas, entered the educational system. This is his great virtue. It is no exaggeration to say that Sufi Allayar has become a teacher and mentor of the times, of millions of people, with this service. Indeed, both of these pains are the pains that a pure heart desires, this love is a symbol of purity. Sufism, on the other hand, is a provision that teaches purity of heart and purity of spirit. The conclusion is that the rich philosophical-artistic-moral heritage of Mashrab and Sufi Allayar, their teachings are a spiritual wealth of high educational value even today.

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THE MAIN PROBLEMS IN DISTANCE LEARNING THE ENGLISH LANGUAGE

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ANNOTATION

English is very important for a person, but any method of learning it, including distance learning, has a set of disadvantages and difficulties. They must be taken into account when planning classes. The work is devoted to current problems of learning English distance.

KEYWORDS: *English, learning problems, distance learning.*

DISCUSSION

Today, the desire for their child to know English is inherent in the majority of the adult population of our country. This is easily explained by the fact that this language is international. Having mastered the English language, anyone can more or less explain themselves in almost any country in the world. It is the official language of Europe and the main technical language of the world. Such reasons make it very important and a priority to study.

At the moment, the world around us provides people with many different tools for learning English. There are a huge number of schools that teach using different methods and provide an opportunity to master it just sitting at home and completing the tasks provided. However, despite the simplicity of providing information and a variety of tools for most people, learning a foreign language remains a very long and painful process. Most often, people refuse further training, citing a lack of appropriate abilities and skills. This is far from the case. Anyone can learn a foreign language, at least for the reason that they have already learned one language - their native language. The question is only with the correct presentation of information and an effective and efficient teaching system.

Language is one of the most important means of transmitting information from one person to another. Without it, the existence and development of the entire human society would be completely impossible. At the same time, the modern expansion

and significant changes in international relations between States, as well as the internationalization of most areas of everyday social life, make English a constantly popular language in any aspect of human life. At present, it is becoming one of the most important factors in both socio-economic and scientific and technological progress of the entire human society. Such aspects significantly increase the status of English as a General education discipline and the motivation to study it.

The vector of development of modern education should be focused on the development of the student's personality, his creative and cognitive abilities, as well as on the formation of deep personal motives and incentives for students to get the best education that is available in the present. At the same time, one of the main tasks is to instill in students the desire to learn and correct, systematic training in this process. This approach allows you to raise an independent person who can learn about the world without outside help. The same is true for adults who want to learn English. It is enough to teach them to learn and further training will be more like proofreading work than the work of a teacher with a student. Modern technical methods allow any student to find all the necessary materials freely available on the Internet and, with due attention and perseverance, thoroughly study them. The teacher will only need to set the pronunciation and explain the basic grammatical rules. The student is quite capable of mastering everything else independently.



When learning foreign languages, both remotely and in other ways, most students experience similar problems that prevent them from learning new knowledge:

1. Psychological severity is one of the most common problems in learning any language. It consists in the fact that the student sets himself too high a bar. They want to learn how to speak the language they are learning perfectly. Get rid of the accent and write without a single mistake. At the same time, we all know that a rare native speaker uses it correctly and writes without errors. Most people do not know the grammar of their own language very well, but for some reason they try to avoid mistakes in what they are learning. The applicant begins to strive to correctly pronounce sounds, letters and diphthongs, which leads to listening to many English songs and watching movies without translation without improving their knowledge. After all, a person simply cannot understand what they say in the film because of the abundance of accents and slang. It is because of this approach that a complex of ignorance of the language and a belief in the lack of the necessary skills and abilities to learn it eventually begins to develop. To solve this difficulty, the applicant needs highly qualified assistance from a teacher who practices spoken English, unlike most teachers who teach a language that is spoken only by the Royal family. However, there are not many teachers who can teach "spoken" English, especially in small cities. Here, modern technical development comes to the aid of the applicant, which has made the possibility of teaching remotely quite real. Today you can sign up for courses and learn English at the proper level through the video chat program.

2. Grammar - it is one of the main stumbling blocks. The thing is that it is a rather cumbersome design that requires unquestioning execution. At the beginning of language learning, the teacher always tries to explain the grammar rules to his students. However, they eventually become what makes language learning lose its interest and appeal. The solution to the problem is a thorough preparation of the necessary rules by the teacher in a soft and understandable game form. This approach provides students with a deeper understanding of the basic grammatical rules and makes them easier to learn. In addition, by teaching your student remotely, the teacher can prepare various interactive tools that will make the lesson interesting and memorable.

3. Distraction - loss of interest is one of the most important reasons why a person may stop learning English. This is especially noticeable in distance learning. In this case, the applicant does not feel psychological pressure from the teacher and he ceases to be an authority for him. As a result, interest drops and it does not matter whether the student was in the class or completely missed it. All the

information given to him in a few hours will have a very low percentage of assimilation. It will just be a waste of time. This problem should be solved individually, selecting interesting information for each individual student. Both the teacher and the student should avoid books, films, and audio tutorials that are not interesting to the student. Classic detective stories that are interesting to most people can be a great help for learning English. In addition, you can find a lot of different news and essays on the Internet that may appeal to the applicant.

4. Thinking in the language you are learning - another important obstacle to learning a new language is that most people think in Russian and only then translate words into a foreign language. After that, they usually compare what they say with the grammar rules they know, and after all the actions they perform, they pronounce the resulting sentence. This approach is incredibly tedious for a person and greatly slows down his thinking. The way out of this situation is to skip all the steps and develop the habit of immediately thinking in the language you are learning. In fact, this approach is the only correct one for rapid learning of English. This is how children learn their native language. They don't know any grammar rules and learn to do everything correctly through trial and error. The theory of correct speech itself begins to be studied by them much later. The most important thing in learning a new language is the practice of interpersonal communication, not the theory of grammatical rules. The applicant always strives to learn how to speak with native speakers, and not to fill out regulations and documents. Every teacher should know about this and try to help their student in any way.

5. Listening - it is very difficult for a student to perceive English speech by ear, especially if it is spoken language filled with wordplay and slang. Usually, in this case, students fall into a kind of stupor and completely lose interest in the subject. It should be noted that this situation is absolutely not a cause for panic. Often, even native speakers are not always able to fully understand their interlocutor. The problem of listening is solved by a large practice of listening and watching various films in English with Russian subtitles. This approach allows the human brain to correlate a spoken word with its instant translation, which improves its memorization tenfold and significantly expands the vocabulary.

Surveys conducted by the author show that distance learning has the following advantages for students. First, it is a modern type of training, which is an important motive for choosing it. Secondly, the surveyed students note that they save time, i.e. there is no need to get to the place of study. Also important is the fact that distance learning, as well as online training, is much cheaper than traditional training. There is also an advantage in the form of a flexible learning schedule and relative freedom, which is a



definite plus for those students who are able to properly and efficiently plan their time, as well as for those who combine study with work. It should also be noted that students are practically not distracted in the learning process (which is the case in the classroom), and therefore learn more information.

According to the surveyed students, the disadvantages of distance learning are also present. First, many experienced temporary technical difficulties in the form of poor communication or computer problems.

As for the advantages, it should be noted convenience, saving time on movement and solving territorial problems, which is obvious. Also, with proper advertising and high quality of the "product", it is possible to train more students, and in the case of providing paid services, it is also possible to earn additional income, which is important in modern conditions. The advantage is also the ability to create an interesting high-quality "product" by showing your creativity.

There are also disadvantages. First, there are acute issues related to the observance of copyright holders' rights. Without the permission of the copyright holders, it is forbidden to post materials (texts, photos, videos) if they are intended for commercial use. No problems will arise, of course, if the authors themselves create educational materials, and buy photos and drawings on certain sites. Second, the creation of courses requires a sufficient amount of time, and if the courses involve checking written papers and other activities, the time spent by the teacher increases significantly. Technical problems also sometimes occur. The novelty of this phenomenon is also a disadvantage to some extent, since the legal support for distance learning is not sufficient, and most practical issues are the responsibility of educational organizations, which must include the issues of distance learning necessary for the implementation of programs in their local regulations. These are issues such as student identification, assessment requirements, final certification, and others. All these points are extremely important and need to be worked out in detail.

Modern English is one of the most important means of communication for people of different nationalities around the world. In addition, it is a common language of international business documentation. This makes it practically necessary for everyone to study it.

In conclusion, I would like to note that distance learning and online learning are new and modern types of training. It is impossible to ignore them, since they are already mentioned at the legislative level. At the same time, there is no need to switch completely to these new types, since there are still many shortcomings. The best solution, in our

opinion, is to introduce elements of distance learning into traditional education, which will help to improve the quality of education and increase demand for educational services.

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AN ARTISTIC CONDITIONAL SYMBOL IN THE STORY OF ASKAD MUHTAR "CHODIRXAYOL"

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ANNOTATION

The article addresses the work of one of the major representatives of Uzbek literature of the 20th century, the writer Askad Muhtar. Writer's skill in storytelling was considered on the example of the work "Chodirxayol". Created at the last stage of the creative activity of the writer, an absolutely unexpected artistic image in the "Chodirxayol" was revealed on the basis of analyzes that artistic reality acquires a symbolic essence.

KEYWORDS: "Chodirxayol", Uzbek literature, writer, prose, genre, story, conditionality, symbol, shura period, eroti, image of spirituality, interpretation, irony, idea, artistry, criterion, analysis, image.

DISCUSSION

The story of Askad Mukhtar "Chodirxayol" was a great literary phenomenon not only in the work of Askad Muhtar, but also in Uzbek storytelling in general, it demonstrated radical qualitative changes in Uzbek storytelling. What does the word "Chodirxayol" mean? First of all, let's clarify this question. This word is explained in the "Explanatory Dictionary of the Uzbek language" as follows: "Chodirxayol old. Uzbek traditional type of puppet theater: all parts (members) of the puppet are connected with threads, connected to a bench and move the doll by pulling the puppet threads behind the tent (curtain)". [Uzbek language. Explanatory Dictionary, 2008: 503] why did Askad Mukhtar put the word "Chodirxayol" in the title of the story? If you get acquainted with the story, then in the artistic text the word "Chodirxayol" is not emphasized much. This word is met in the exposition of the story. But this does not mean that a random, surfing name is chosen for the story. For this, naturally, it is necessary to conduct an artistic-aesthetic analysis of the story. To the story "Chodirxayol" X.Dustmuhammad, S.Komilova, S.Matyoqubov and more scientists, gave a positive assessment to the researchers. Including, X.Dustmuhammad wrote that the story "Chodirxayol" was a novelty in our literature with its undermeans. [Dustmuhammadov X. 1995: 29]

"Chodirxayol" is like a separate mainland in the narrative of the Askad Muhtar. Because the writer gives deep meaning to artistic-conditional symbols in the story. It tells the story, but is limited to giving

artistic symbolic signs to the reality at the time of the event. When the Askad Muhtar storytelling is waved before our eyes in the form of a holistic system, one can feel that the author tossed a pen without deviation from the realistic creative method. But one of the last stories of the Askad Muhtar relies on artistic conditional symbols in the "Chodirxayol". "Chodirxayol" really attracts the reader with his deep artistry. It encourages him to think deeply, to think deeply about the true reality of the time of the event, the tragedy of truly social, spiritual problems. In the story, the people of the era of shura, who are deprived of thinking, are cynical. Most likely, we are putting the narrative fiction into a narrow mold by defining the social structure. Therefore, if we get rid of all kinds of regiments and look at the story with a thoughtful glance, the writer in general derides "over the people who can not think independently" in the history of mankind. Of these, even a rat refers to an artistic symbolism to the idea that he is smarter. But these thoughts are not openly expressed in the story. An important artistic and philosophical idea, which the writer wanted to say in the "tent dream", is understood by the means of the tag.

Seven workers in the story do not even have a name. They are simply the first, second, third... It is said that the seventh is only. In general, the story has a very deep symbolic meaning of reality, nameless heroes, the leader Hokim Turaevich, a one-way phone, each of the images of the rats. The story begins with this exposition: "there is always a tumultuous mound here. In the place where the hill was carved, a steep wall, a shovel-it was spilled from



a hoe, salty pressed shoulders, a sparrow tattoo, a casket lily. This noise is heard all over the place at times, as if fifteen to twenty years away. The hill is carved, a large hollow is formed, a hollow, a little light with two bulbs burning on top of the tray of honor. The work here, despite the whims of nature, snow - it's frost, it's flood-it's cold, it's cold, it's hot, the road to the gorge where the soil is poured, the path is fine, from there the bark of the hill looks flabby, the surface of which is rotting in the shank grasshoppers." [Asqad Mukhtar, 2015: 164-165.] We read the exposition part of the story you think that the heroes of hamono Askad Mukhtar's "Жанжалкаш", "Куртак" stories evolved, and forty years later they became a dumb man. After all, we pay attention to the behavior of the heroes of the story: "one of the most working is inside, carving the soil from the back wall with text. He is a medium-sized, energetic man from the larynx, from every tattoo a beautiful palf-lilac spills on the ground, his eyes appear dimly even in dimples from the thimble. The second is throwing the soil into the lily-of-the-valley with a waist. As the light falls from behind, the meow of the cornflower seems to be lipillae as the shadow of the tent-tree doll, and the person who went near noticed the grass of the ardent intensities of work in the spruce" [Askad Mukhtar, 2015: 165.] To come to such a conclusion, Askad Mukhtar went through the Soviet era system with his heroes, stepping on 40-50-th year until independence, surpassing many passions. Now his hard-working, incredibly tired heroes have become tongue-in-cheek. But they are still in black labor. It can be seen in the life and work activities of seven heroes in the "Жанжалкаш", "Куртак". The seven workers tirelessly plow the Earth, two of them take out the soil from the silt and form Hills. They will understand each other no gestures. Because they are engaged in this labor for a lifetime. Seven the labor of the earthenware will also remind the subconscious "Sizif afsona". Here's how the seven heroes are described in the story: "they are seven in themselves, two in one, that is, the third and the fourth in the lily. These are very similar to each other, whether the brothers are: as they pour both the faces from the Spruce, and the fluffy furrows. They understand each other from an eye view. The soil is poured into the place where the mociday went and cut the road. The fifth is in the light, next to the old writing desk at the entrance... yes, by the way, do not stop, let's say better this sixth. Because it is... The fifth is in the hoe. It is also distinguished from others by this, it scrapes the ground of the carved cave, and the stone that rolled from the soil-it cleanses from the incisions. Even if he himself is old, still energetic, frowning is reconciling. Now let's come to the golden mean. He, as we have said, next to the old writing desk (there is also a dust-soaked phone case on the desk) is solidified on the board. It is not known what

kind of eye it is, because it wears glasses. This is what appears to be a lop on the mirror face. But he does not differ from others only in this. The difference is that at first, as we have already said, it hardens next to the table, as if tied to it. Then it will not work. Once upon a time, in his youth, he founded this "honor board", which decorated him with pictures of all eyes, and the facade of the cave with a slogan. Now he is using his brain to keep track of the effects of these and not move.

The seventh man, with a hoe in his hand, then arrived. Its height is neither low nor high. Itself is round as if he was born hugging with a hoe. It appeared suddenly as if it had come out from the back of the hill and rolled down." [Asqad Mukhtar, 2015: 165-166.] The hero of the sixth number of the story recalls such heroes of the story as Rustam ("Куртак"), Fariha ("Жанжалкаш"), Nazmi ("Ҳаётга чақирик"), Mehri Zokirovna ("Қанот жуфт бўлади") of the Askad Muhtar. Indeed, in the first storytelling phase of the Askad Muhtar, a series of images were created, such as the steward, the head of section, the factory workers and the head, the author, half a century later, the author treats them with a critical spirit, a bitter irony. In the story, the author's bitter cynical attitude to the heroes is noticeable. But the heroes themselves do not understand, they are not active. True, they are physically active, in a tireless movement. That is, six of them are incessant, unstoppable plow land. The goldsmith manages them. His eyes are also numb. Because, as the author ironically put it, there is always a pattern in his eyes. His inconspicuous eyes are not visible. He waits for the command day and night in front of the one-hand phone. If the Hokim Turaevich says where to roast, six workers will roast that land. Why should you chase? Is this the end of the hives? Ends with what is the last? About this, not one of the heroes of the story even thinks. Even the sixth who ruled them was from the happiness of thinking. This mindlessness, this brainlessness reminds the state of the USSR of the near past. On the example of Hokim Turaevich stood from the center and embodied the personality of the managing colonialist, invisible, commander-in-chief. Landowners are the symbols of the colonial people. Look at the misfortune that the earthenwomen will roast the earth, and the earth will remain under them. Even under the sixth Earth, he does not miss his political-ideological vigilance. Here's what's called in the story about it: "You're getting stuck in the way of soil – that's the third and fourth of the floor talk started! But in the conditions of dying to provide the sixth job from an ideological point of view, the excessive object would listen quietly." [Asqad Mukhtar, 2015: 170.] The earthlings are a symbolic embodiment of the thoughtless people who, during the time of the former union, fell into the mood of the



arable, the state of the arable, do not want to use their brains. After all, if we pay attention to the dialogue of heroes: "yes, they are thinking, – continued sixth. They said, "We thought to save the caves. But since it is dangerous for us to say digs from the outside, there is a complete suppression of a hill somewhere. Therefore, the task is such:"be careful and act independently, depending on the circumstances yourself." After receiving the assignment, everyone took a free, deep breath and calmed down. Just as they got rid of the passion of the black earth, with a miracle, and suddenly, as they came out into the light, they sat down."[Asqad Mukhtar, 2015: 171.] Seven in the depths of the black earth, too, throws blankets into the shadow of the Hokim Turaevich, thanking and applauding with each other the leader, that is, the "great". They do not even think about saving their lives. Just expect a command from a top, one-way phone. Taking command, along a line, performance is absorbed into their blood. For their lives and destinies, too, the "Big" should be a headache. We see a deep meaning in the so-called "Chodirxayol" of the subconscious story. If the seven is a symbolic sign to people who have become dolls, then the doll is a symbol of a centralized colonial government. The phone is also one-sided. That is, it is intended only for issuing orders. People's grief cannot be heard at all. These emblems are symbolic signs of violent politics, in which the slogan" judgment is strict, there is no place to complain seven "how to make an independent move on a very tightened head. When the "puppet man" made a whim that I would make, he brought plasticine to his fourth son. The torn paper of the same toy instruction also served as an important detail for connecting the artistic composition in the story. "- Stop it! – said one of the brothers, the fourth, - stop, the friends... this one... not "thinking", "playing", "after playing", that is, when my little son did not do whimsical things that a doll-man would make, I would take out a plasticine, that's the paper of that... As long as the bread is rolled up, the friends!". [Asqad Mukhtar, 2015: 176] in fact, the doll-people –is the seven themselves! - the irony that the thought goes through our imagination. The rat pierces the ground, and from the outside a crack falls under the ground. In the solution of the story, a bitter irony is made to the fact that the mind of "Puppet-people with brains over what the rat has achieved" does not do, it is impossible not to understand it at all. After all, the end of the story ends like this: "first looked out: –do not bloom from your mouths, as the rats showed the way! Do not let the adult come and misunderstand us!..". [Askad Mukhtar, 2015: 177] in fact, this is seven, a doll-people should follow themselves, not from an adult. He would have cried, putting a dod on their own condition. And the doll, which stopped thinking-people say from the thoughts of an adult, and not from himself, is a gift. It is necessary that

there is no more tragedy. The conclusion is that in "Chodirxayol", created at the last stage of the Askad Muhtar storytelling, an absolutely unexpected artistic image, artistic reality acquires a symbolic essence. This story was reflected not only in the story of the Askad Muhtar, but also in the history of Uzbek storytelling as a whole. The writer symbolizes the life of the peoples (former USSR), who lived in the conditions of colonization in a broader sense, the life of the people in the arid, subjugated, tended to the psychology of slavery, using the elements of sarcasm, ironically, symbolized in the reality taken into the pen in the "tent".

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THE IMPORTANCE OF STATE INSTITUTIONS IN THE ETHNO-CULTURAL DEVELOPMENT AND PRESERVATION OF SPIRITUAL HERITAGE

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ANNOTATION

In this article highlights of the importance of state institutions in the ethno-cultural development and preservation of spiritual heritage and the role of culture, which contains the main value of the existence of individual peoples, small ethnic groups, and entire states; its significance as a set of formal and informal institutions, various social phenomena that affect the preservation, dissemination and reproduction of spiritual values that need to be identified and revived, even in new forms, and applied in the socialization of the younger generation.

KEY WORDS: *culture, national culture, ethno-cultural development, spiritual heritage, spirituality, state institutions.*

DISCUSSION

The most important role in human life and society is played by the culture to act as a means of accumulation, storage and transfer of human experience, fostering personal development, which socializers, learning the knowledge, values, norms, traditions of his people, becomes a member of society. Culture is the connecting core in the unity of all members of society, in their unity and integration. The values, ideals, norms, and patterns of behavior that are accepted in the process of socialization form and regulate the behavior of the individual.

Culture contains the main meaning and the main value of the existence of individual peoples, small ethnic groups, and entire States. They cannot exist outside of culture. A person lives in a natural environment, but it is also significant for him that he lives in an environment created once by the culture of his ancestors and created now by himself. Understanding the necessity and importance of preserving the environment, nature, we must understand the significance of the task of preserving the cultural environment, because, as we know, if nature is necessary for a person's biological existence, then the cultural environment is necessary for spiritual, moral life, social organization, without which, of course, neither man nor human society can do without. Meanwhile, the issues related to ethnic culture, the restoration and preservation of cultural values in modern society are raised, in our opinion, and are studied very poorly, more often formally.

Sometimes certain types of cultural heritage, remnants of the cultural past are studied, archival data and documents are studied, but not always the influence of the cultural environment, its moral significance and influence on a person is studied. At the same time, there is no doubt about the power of the educational impact on people, especially young people, of the ethnic heritage, culture and traditions of the people. G. N. Volkov, the founder of ethnopedagogics, quite rightly noted that the people in the purest form are always represented by children. When the national dies in children, it means the beginning of the death of the nation [1].

Culture is also significant as a combination of formal and informal institutions, various social phenomena that affect the preservation, dissemination and reproduction of spiritual values. Therefore, among the priority tasks in the state's cultural policy is the task of preserving ethnic cultural traditions and preserving ethnic and cultural diversity. This problem is especially relevant today, when there is a spiritual disintegration of society, the values of the older generation are lost, and the norms of national culture are forgotten.

In this regard, it is necessary to pay close attention to the spiritual and moral values of our society that have been historically formed and justified by all the experience of human existence, which must be identified and revived, even in new forms, and applied in the socialization of the younger generation.



In forming a moral personality, Uzbekistan have always adhered to special methods, techniques, forms and means of preparing children for life that have been developed over the centuries. In this sense, the national pedagogy of of particular importance today. Being a historically hard-won theory and practice of progressive personality formation, it reflects the socio-economic history of the people, the environment of ethnic traditions, and the fundamental moral principles of society. An appeal to the culture and traditions of our ancestors allows us to update the system of personality formation and increase the educational potential of both the family, public and state institutions, and society as a whole.

The newest values and norms that are formed in one way or another with the development of society cannot but relate to the previous ones, because there is a concept of permanent values. That is why traditional regulators of people's behavior contained in ethnic culture are so relevant. A certain theoretical processing and practical support of what is traditional is necessary, which does not contradict the declared program social attitudes and serves as a factor of stabilization of society [2].

Moral education is the most important direction of forming the moral and ethical image of the individual, such stable human qualities as honesty, kindness, truthfulness, humanity, loyalty, patriotism, culture of interpersonal and interethnic relations, feelings, consciousness and behavior based on universal spiritual and moral values. Purposeful perception, comprehension and understanding of all material and spiritual aspects of culture without exception, understanding of its national and universal values will allow the younger generation to acquire its status, become a full-fledged exponent of a truly progressive national and universal culture. However, first of all, it is necessary to revive the traditional, undeservedly forgotten folk mechanism of real perception, comprehension, understanding, not momentary, but constant careful application of cultural values in the daily life of teenagers.

In this regard, folk pedagogy is of particular importance as an expression of the most essential sphere of national culture - pedagogical culture. Folk pedagogy offers nationally specific, surprisingly wise mechanisms for developing, saving and further developing national culture. Folk pedagogy is a mirror of all the progressive pedagogical activity of the people for many centuries.

Progressive representatives of all times and peoples derived their vital ideas from folk pedagogy, drew them from the storehouse of universal culture. "Education created by the people themselves and based on popular principles has an educational power that is not present in the best systems based on abstract ideas," wrote K.D.Ushinsky .

Due to the deformation of the education system, a well-coordinated system of personal

education has not been used in recent years, and sometimes the national experience of education and training is ignored. With some attention to individual folk traditions, the original folk practice of raising a real son (daughter), worker (worker), friend (girlfriend), family man, father (mother), master (mistress), mentor (mentor) was completely forgotten. The historically proven positive links between the main links (man-man, man-society, man-nature), the main functions and rules of humane interethnic, interpersonal and business relations have been lost, and the basic principles of national education have been forgotten.

As you know, the primary role in the formation of the individual, in its moral and spiritual development, in familiarizing with national and universal values, belongs to the family. After all, it is in the family that the child goes through the first stages of socialization, is introduced to the norms of behavior, morals of the human community. The first acquaintance and awareness of national traditions, their role and significance for each person occurs in the family. And everything that the future citizen learns from the spiritual heritage of his ancestors fits into his consciousness as naturally as possible, is assigned to them in conditions that are not artificially created, but natural, and is accepted as a condition of normal human life. The role of a teacher begins to manifest itself at the next stage of life, when it begins to understand everything that was accepted unconditionally and unconditionally, when it becomes necessary to understand everything that surrounds you, what you deal with in everyday life, that somehow connects you with other people. Then it is necessary to reveal the potential of national traditions and customs, to work on fostering interest in the native culture and on the problem of self-awareness as a carrier of this culture.

No less important is the work of public and state organizations, which, in our opinion, can and should develop mechanisms for the preservation and restoration of spiritual heritage. It is difficult not to agree with G.N.Volkov, the founder of ethno-pedagogics, who noted: "the issue of deep and scientific justification of national and regional factors in the upbringing of children is Particularly acute, because the preservation and revival of cultural heritage begins with its own region and plays an important role in the upbringing of the younger generation." In this regard, Likhachev D.S. he rightly argued that the responsibility for the preservation of cultural values and culture as such lies with the state. The state, in particular, is responsible for the self-renewal of culture in the country. Culture in all its forms has the right to financial support from the state: support for education and protection of cultural values, first of all, and the culture of all ethnic groups living on the territory of the state.



With all the awareness of the importance and the need to preserve traditional culture, socio-pedagogical, moral significance, is especially popular at present, it is impossible to restrain the efforts of only individual teachers, representatives of cultural intellectuals, the process of "forgetting" and "ignoring" important for the further cultural development of folk traditions, In conditions of domination of mass culture, the prevalence of the "consumer society", it is necessary to determine the most appropriate effective ways of conservation and transmission of traditional cultural values. It is necessary to consolidate all the spiritual forces of society, cultural understanding and implementation of a set of measures to preserve traditions, and therefore the entire culture of the people. Currently, this is reflected in the organization of events related to ethnic culture: organization and holding of national holidays, exhibitions of artistic creativity, Amateur performances. All this is important for the preservation and further development of modern national culture, but, in our opinion, it is more informative and entertaining. To revive the most important and popular in modern society, people's tradition, necessary as we see, activities, projects in which representatives of a particular ethnic group were not just spectators but immediate participants, that would give you the opportunity to experience the phenomena of ethnic culture from the inside, would understand the importance and necessity of a particular folk tradition.

The importance of the activities of state services and departments in the harmonization of interethnic relations, in the prevention of ethno-political, ethno-confessional conflicts and contradictions becomes obvious. It becomes clear that significant resources for social development and comprehensive education of young people, hidden in progressive national traditions and culture, which solves the problem of educating the younger generation - through the regulation of spiritual qualities necessary for correct behavior in a particular sphere of personal or public life from the point of view of a particular society or people, can be preserved and revived with the direct participation of the state. Activities of state institutions and departments contribute to strengthening civil unity and harmonization of interethnic relations, preserving the ethnic and cultural diversity of peoples. Traditional norms, time-tested and developed by entire generations, are a moral guideline that allows you to preserve your identity, your belonging to the history and culture of your people. The past centuries, its own system of rules and norms of behavior, communication, the specificity of perception and sensations of the surrounding world, their identity, their character and psychological characteristics, its spiritual culture is an invaluable experience in the education of today's youth.

So, state support for traditional culture is in demand due to the need to preserve historical memory and cultural specifics, it is necessary because it actually provides, through the system of cultural and educational institutions, the unity of those meanings and meanings that give the state stability, and the people the opportunity to preserve and update the cultural heritage.

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BUKHARA AND MASHRAB (Features of the period)

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ANNOTATION

This scientific article analyzes the views of the thinker poet Boborahim Mashrab on his arrival in Bukhara, his acquaintance with the cultural life in the place, his interaction with the scientists of Bukhara, thinker and sufi Bahouddin Naqshband, his first teacher Mullo Bazar Oxund, who studied science in Bukhara.

Also, the political life of Bukhara state in the XVII-XVIII centuries, the peculiarities of the period were studied.

KEYWORDS: Bukhara, Movarounnahr, Khiva, Samarkand, Abdulazizkhan, Subkhankulikhan, Qunduz, Balkh, Mahmudkhan, Mullo Bazar Oxund, juybor, Sheikh, sufi, mosque, science, culture, king, qalandar, Naqshband, Gijduvan, Hamadani, Mashrab.

DISCUSSION

In the XVII century, Movarounnahr was given to the rule of the sheybanids, which lasted one century (1501-1598), and from 1601 the rule of the Ashtarakhans began directly.

100 years after the death of Amir Temur, the economic and cultural life of Movarounnahr had taken a path towards crisis as a result of political viability. By the beginning of the XVII century each of the Uzbek tribes of seed and had its own sphere of influence, the state within the Khan itself, the state within the beck-state. "The mangites - in Bukhara, kungirots in Khorezm, minglar in Fergana, the kenegas in Amudaryo had taken into their hands the reins of governance in the adjacent regions to the two coasts. The khans were weak, forced to share a career, depending on the position of the seeders. The emirs and princes rose to the height of self-rule, mutual strife disputes between officials in Central power, hit-collapse dried up the country"[1].

"At a time when the ashtarkhanids were standing on the edge of a mutual massacre, Imamkulikhan (1611-1642) occupied the throne" [2]. In the time of Imamkulikhan, some peace was established. During his reign, the Bukhara Khanate becomes a powerful state. However, the rise of the tribes against the central authority and the mutual

wars forced the Bukhara Khan to repeatedly draw an army against them, but these moves would often end with the defeat of the khan's armies: academic I.Muminov wrote: "beats would harm the broad masses of the people, only the nobility would hate them. Such a strike also undermined economic ties between the nomadic and more advanced inhabitants of Movarounnahr"[3].

Even in the years of the rule of Bukhara Abdulaziz (1645-1680), the head of the people did not come out of the war. Khiva Khan Abulgozihon (1643-1663) and his son Anushakhon (1663-1687) carried out several robbery marches to the Bukhara territories. Khorezmians attacked the surroundings of Korakol, Bukhara in 1655 year, plundering the lands. Abdulazizkhan, who did not find an opportunity to strike at enemy troops, to stop mutual wars, abandoned the throne. Even during his brother Subkhonkulikhan(1680-1702), who settled in his place on the throne, the relationship of Bukhara Khiva continued to be complicated. In particular, the Khiva Khan of the Samarkand emirs recognized the rule of Anushakhon, and his reading of khutba in his name caused some of the emirs' dissatisfaction. In such a situation, Subkhonkulikhan was supported by Mahmudbiy kataghan, the Samarkand people were punished. Nevertheless, the relationship between



Bukhara and Khiva remained tense. Mutual struggles, political unrest, which remained tireless at the beginning of the XVIII century at the end of the XVII century, aggravated the situation of the people's masses, increased taxes, escalation of bribery, and the resettlement of the country's economy into ruin, led to a collapse. In the Subkhonkulikhan period, a decree was issued on the collection of taxes for 7 years in a year. This led to further poverty of the population, the carelessness of the land, the crisis of farming, the rise in prices.

Literary critic Abdusattor Jumanazar noted in the monograph "Mashrab": in the Balkh 1114 (1702-1703) Odil otaliq ibn Kupak goes to his hand and head in Mahmud katagon goes to the to Kunduz. After the death of the just Fatherland, the grandson of Subkhonkulikhan Mukimkhon ibn Iskandarkhon calls him from the Kunduz. Subkhonkulikhan died in Bukhara at the age of hijri 1114 on the 21st day of the month of rabi us-soni (1702 year 14 September) 77 years. The throne is occupied by the 20-year-old son Ubaydullah. Mukim Muhammad ibn Iskandar sulton ibn Subkhonkulikhan, a resident of the Balkh region, does not want to be subordinated to his uncle, and in the meantime, mutual hostility arises. The battle is intense and the Mahmudbiy paternity, with extensive experience in politics, will take advantage of such a situation. He kills the Mukim Muhammad Sultan and takes the throne of the Balkh and declares himself the king of the Balkh in the name of Mahmoud Bahodurkhon. Ubaydullah went with an army to the Balkh at the beginning of hujri 1119 year (April 1707 year) and invades with great difficulty. After this battle, Mahmudbiy qatagon escapes to the Kunduz and remains in that place until the end of his life. In the second half of 1707, Balkh and Kunduz became two independent provinces with their own policies. Mahmudbiy qatagon cannot return to the Balkh until this is done. Muarrikh Muhammad Yakub, says that he will rule for some time in the Kunduz and will die under the house in the earthquake of hijri 1126 year (1714). The analysis of the data collected shows that around seventy youth of Mahmudbiy qataghan died [4]. There is a fact that Mahmud qataghanbiy who gave judgment to the death of the Prophet Muhammad died under the roof not after 3 days as he predicted 3 years later.

The position of the pious in the country of Bukhara during the ashtarakhanids was also higher than the position of the Uzbek seeds. Their interference in state affairs led to a gradual oblivion of the achievements of the Middle Ages in the field of Exact Sciences (geometry, mathematics, medicine, astronomy), the establishment of the dominance of the divine worldview only in explaining the world, the progress of society. This caused primarily religious fanaticism, national intolerance, the suffocation of Social Thought and secular development: "as a result, Movarounnahr, the cradle

of Science and culture, became a politically, economically and culturally disadvantaged country in the time of the Ashtarakhans. The role and prestige of Joybor sheikhs in the socio-political life of the state of ashtarakhani was very great"[5]. Bukhoro Khans were not limited to awarding Joybor khodzhas with Land-Water, cash and valuable gifts, but also sought a parish with them. Joybor Masters also had a certain influence on the appointment of any person to a higher position, dismissal from his career and other duties.

Shoh Mashrab simply did not carry out the pilgrimage. As Mansur, who reached the level of "martyr excellence", reached the tranquility of the soul, the king became a guest of his native land Turkistan before his last trip to Mashrab. Passing through Bukhara, Bahouddin Naqshband visited the tomb and other hole places. A group of mullahs there and their great mawlono Sharif began to argue, sharply criticizing the apparent views of the mullahs, after which he leaves[6].

He did not live in a busy city, but was widely promoted among the people by the teaching of the city, city and country kezib. After leaving the village of mashraqhoja, he went to many countries: Yorkent, from there to Khutan, Kumul, Turfon, then he went to Ghulja. The Mashrab will return from the Ghulja to the Kashgar. Then comes to Namangan his native land after him, to Tashkent on the instruction of Ufoqhoja and again to Ufoqhoja. After that, he started the qalandarhuja movement. Baborahim Mashrab, who has been visiting the lands for 18 years, is also in places such as Yemen, India, Dakan, Isfahan, Khorasan, Herat, Mashhad, Iran, Mecca, Medina, Halab, Sheroz, Sham, Rum, then Bukhara, Tashkent, Shahimardon, Saripul, Shibirgan, Andkhoy in Afghanistan[7]. By I.Abdullaev "uzbek art and literature" weekletter and the article "Mashrab and "Mabdai nur", published in the number of April 12, 1991, tells about which lands he went to in a gazal about the biography of the poet:

Заминни хок этиб, бағридин эмди осмон
кетдим,

Фалакни тай қилиб, аршдин ўтуб то
ломакон кетдим.

Чиқибон лوماкондин бозина дорулфано
узра,

Қарор олмай, гаҳи улён бориб, гаҳи буён
кетдим.

Тижоратни қибоб айлаб, тилаб ул холи
рухсорин,

Яманни шахридин бир лаҳзада Ҳиндустон
кетдим.

Дақанда неча кун ман истиқомат айлабон
кўрдим,

Тамоми расми кофирни кўруб, ман
Исфаҳон кетдим.



Хуросонни ҳавоси яхши, аммо одами
кофир,
Ҳироту Машҳадни сайр этиб, юрти Эрон
кетдим.
Мадина, Маккани тавоф айлабон ҳам чоҳи
Замзамни,
Чоҳар ёрни тавоф айладим, йиғлаб равон
кетдим.
Ҳалаб, Шероз билан Шоми шарифу Румни
кўрдим,
Бухоро мулки индим, ўтубон Тошкон
кетдим.
Яно ҳам Шоҳмардон шер даргоҳин тавоф
айлаб,
Сарипулу Шибирғон, Андхўй худ ҳам ки он
кетдим.
Қарори топмадим рўйи заминга, Машрабо
ҳаргиз,
Ажални илқидин, аё дўстлар, охир равон
кетдим[8].

In this poem he wrote: "Since he was also in Yemen, he went to India and stayed for a few days in the city of Dakan, then went to Isfahan, Herat, traveled Mashhad, went to Iran, visited Mecca, Medina, drank from the waters of the zamzam spring, saw Halab (Aleppo), Sheroz, Damascus (Syria), Rum, returned from there to Bukhara, then went to Tashkent, then Shahimardon, writes that he was in places"[9]. In all the articles and books written so far, it was written that the poet did not go to Mecca and returned from the road. It is also quite hand in hand to make Mashrab an atheist.

Concluding on the peculiarities of the ideological directions of Central Asia of the XVII-XVIII centuries, it is possible to observe that this period received mutual struggles for domination in Movarounnahr, occupation, aggression, aggression. Between Khiva and the Kokand Khanate, which separated from the Bukhara Khanate in the village of Chodak in the Independent 1818 year of the Chust district, there were internal conflicts, the people lived in urdobi and experienced unrest. All this did not remain without a negative impact on the existing ideology, spirituality. The intellectual layer of society and cultural figures sought to keep a soul in such conditions. Science and culture in Bukhara, Samarkand, Khiva, Kokand cities continued to develop passively.

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Mashrab comes into the city of Bukhara, and in the neighborhood of Pirmast you say Bukhara as you lie in the Suvdon."..man is going to pray there, saying,"let the enter the mosques. As far as I'm concerned, the sufi is standing ready to leave the door of the mosque. The king dreamed of sleeping in the mosque at night: "O Prophet, do not let go of the door, I am a stranger, I will be in the mosque tonight[10]"-they said. When he looked at the Sufi, he said,"it is strange that he is a Kalandar," he gave the key of the mosque to the king. The mistress knocks a pile on the mistress and connects her ass to the mistress. And he himself goes to sleep, going out to the pulpit of kindness. Sufi came to the mosque in the morning and saw a lamp burn and his ass tied to the sanctuary of the mosque. With a stick in his hand, he beats and pumps the ass. Sufi look will witness that the donkey is tied with a chain of peas, and he will tie the donkey out and will urge the mosque to pray by standing in a corner and saying: "O Kalandar, what is the tie of the donkey to the altar?"the shoh Mashrab said, "You shall not leave behind your palms, which you have received six coins, lest the thief take them away, but you shall put them before you, and pray, and the man shall take this ass for fifteen coins, and the man shall not take my ass for a thief, and my ass shall go to the beast.

The last years of the poet's life came to Balkh, when he settled in Bukhara, then in India, then in the opposite 3-4 year. During this period, the governor of the Balkh region was Mahmudkhan qataghan. Rumor has it that Mashrab Mahmud qataghan meets well and puts the soup in front of him, while mash gives the soup to his dog. The dog does not look at the soup. Mahmudhan's life grew, seeing that neither he nor the dog did not eat soup, he himself ate it. The second day is also called Mashrab Mahmudkhan. Then he said: "Shoh Mashrab say, O Mahmudhan, give this throne to your client. As long as it will be good. Let on sit". Mahmudkhan descended from that



throne here. Vacated the hotel. And the shoh Mashrab entered the hotel, and ascended the throne, and laid the cloths on the cloths. The shoh Mashrab said: "O Mahmudkhan, take your throne!" The minister came and said that the throne was full of salvation. And the minister tore his collar and said to the king, " O King, from which bank are you devouring the qalandar? The coming of a Kalandar from the Fergana land is the salvation of the throne of King Mahmud, – that will remain forever misfortune. If you do not believe, go and see for yourself!" [12] " – he said. King Mahmudkhan with horse army came to jump. The throne of is sunk with salvation. Mahmudkhan said: "O Mashrab, what have you done with this?" The shoh Mashrab was crying out: " I did it. What happens if I sit on the throne of you. You sit to the land" [13].

Taking Boborahim close to himself and telling him some of the footage from his life, Bazar Oxund speaks with pleasure that he sold his book "Sahihi Buhari" as "I will sell my precious book" only to be saved from a woman's veil, adding a little money and buying it, and that Khoja Ismail al-Bukhari turned the world around and filled the did not see fasting, until the surrender of the soul, lived strangely, did not know what wealth is a household, from time immemorial scribes will tell the fate of steam past eating momentum.

Boborahim Mashraf received his first education from Mullo Bazar Oxund, who originally returned from namangan, a study in Bukhara. However, the cardigan was wearing in the presence of hole Ofoquja. The meaning of the word "Ofoq" means "Pole of world", and in the narrative poem it is called: "two Ofoq passers-by in the world: one is the son of Abdul-ul-Ghijduvani, the other is the Ofoquja." Mashrab worried: "Sharif from that is more meaningless if I go to your services," they read this gazal:

Надоматда тўқуб ёш, васлинг излаб
юргоним беҳроқ,
Ғаму дардинг рафиқ айлаб, мудом оқ
юргоним беҳроқ.
Жаҳон айвонида юрган, муҳаббат ўтиға
қуйган,
Суяр қуллар изини кўзларимга сурганим
беҳроқ.
Ўшал Мажнуни ҳайрондек юрак-бағрим
оқар кўздин,
Санамни ҳажрида саҳрову чўлни кезганим
беҳроқ.
Қиёмат ҳашроғида сўралғай барча
қирдорим,
Яқомни чок этиб Аллоҳ, букун дод этганим
беҳроқ.
Муяссар бўлмаса жаннат ичида давлату
дийдор,

Биҳиштдин кечибон дўза ичида куйгоним
беҳроқ.

Хазон бўлмай гулистони баҳори умр, эй
Машраб,

Саҳар вақтида булбулдек фиғонлар
қилганим беҳроқ [14].

In the world of mysticism of the XVII-XVIII centuries, two great teachings became the leading force. The first was connected by the name of Gazzali and the second by the name of Ibn Al-Arabi. A huge, incomparable scholar of the history of Sufism, Usman Turar, has thoroughly studied each sect and its founders.

Qadiriya, Yassaviya, Naqshbandi, Khilvatiya, Rufoia, Mawlavi, Shozaliya, Saadiya, Dasuqiya, Bedavi, Akbaria, Suhrawardiya, Kubraviya, Madyaniya, Chishdiya, Bayramiya sects [15]. In particular, in some of Abdulkhalik Ghijduvani's advice to the people of the sect, it is stated: "do not enter into work (mathematics) without learning knowledge. For a thorough understanding of the ways of religion, fiqh and Hadith are learned.. Do not strive to occupy a career, become a leader, anyone who aspires to leadership will not find relief.. do not approach the circle of rulers.." [16]. Again they said: "Whoever befriends three things, his place is hell. The first is to love to eat delicious food. The second is to put lipstick on wearing elegant and royal clothes. The third is the one who dreams of the conversation of the poor without ignoring the conversation of the poor. After all, each of these is formed by the desire and desire of hoyu [17]. Adherence to the sunnah of the rasul is a matter of employment. Whoever does not follow his religion risks " [18]. Khoja Ahror: "dervesh, do not deal with the constantly mention of the Prophet (s.a.v.) is an expression from the study and assimilation of noble deeds, including softness, cabbage, loyalty, humility, etc." [19].

In particular, although the famous Hojagon sect and its chain of offices came to the name of Boyazid Bistomy, Junaid al-Baghdad approved the idea [20]. The formation of the hodjagon sect is associated with Bukhara.

The teachings of Yusuf Hamadani came from two sufi schools-Yassawi and Khojagon. Yassavi tariqat Ahmad Yassavi, and Khodagon tariqat are related to the names of Abdulkhalik Ghijduvani [21].

In general, the teachings of Yusuf Hamadani had a great influence on the sufi leeches that arose in Central Asia and were an important ideological source especially in the establishment of the school of Khodagon. This sect functioned in the XII-XIV centuries. Hodjagon found his sufi teaching as a component of Islamic culture in his own way.

According to the founder of the khojagon sect, Hazrat Abdulkhalik Ghijduvani, its protesters, Hazrat Orif ar-Revgari, Khoja Mahmud Anjir al-Fag'nawi, Khoja Ali Romitani, Khoja Muhammad Baboi



Samoi, Hazrat Sayid Amir, the life and religious-irfanian heritage of the potters "from the point of view of historicism, Naqshbandiya is the last of all classical sects... It can be said that naqshbandiyalik is the Supreme stage of classical perfection of the sufi sect"[22].

Bahouddin Naqshband in the Islamic world, Bahouddin Balogardon, Hazrat Bahouddin, Shahi Naqshband, Khoja Bahouddin, Imam Rabbani, Hojai Buzrug and Khoja ul haq and those who are famous for such honorable names as religion. In the sources, the name-patronymic of Bahouddin Naqshband is mentioned by different names. This disambiguation page lists articles associated with the title Bahouddin Muhammad ibn Burhaniddin Muhammad Al-Bukhari.

The main religious-philosophical ideas of the naqshbandian sect rely on the following three sources:

-eleven rashes (rule) of the sect. Four of them are the basic rules of the famous kalima (chahor kalima): "hush dar rest", "khilvat dar conference", "nazar bar qadam", "safar dar vatan;

-the main motto of the sect is "Dil ba yoru dast ba kor";

-the pattern consists of band "virtues", that is, supplications, exclamations and ugit, that is, patterns aimed at enlightening wisdom, that is, high humanism, halal purity.

The spiritual aspect in the theoretical basis and practice of Naqshbandi consists of: sharia, sect, enlightenment and truth, they consist of the following 7 rules: repentance, vara, zuhd, faqr, patience, tavakkul and rido.

In the XIV century, Khoja Bahouddin Muhammad encouraged the enlightenment to be achieved through strict observance of the sunnah of the Prophet Muhammad, honest work and hard prayer. He conveyed the four popular principles of achieving perfection in the way of Hodjagon to eleven.

The literary critic Dilorom Hamroeva called one of his studies about the poet "Afsana and truths about the profession". In this article, Mullo Bazar Ohund, the first teacher, expressed his own thoughts about Ofoqhuja and noted that the poet revered both his teachers in his poems, that he was a spiritual teacher and piru murshid, because he was a person of spirituality: "Mashrab is one of the most vivid manifestations of Uzbek classical poetry. The literary environment, the socio-political period, in particular the role of its masters in the development of poet creativity can not be overemphasized. It is not known from whom he took the first lesson. Only in the mangabas it is written that he went to school at the age of seven, and from the age of fifteen he studied at the Mullo Bazar Oxund hand. Mullo Bazar is one of the remarkable men of his time in the Oxund. First mentor, Mullo Bazar Ohund, was famous in Bukhara,

as the poet noted. Contemporaries glorify him with the nickname devonajon. Mashrab described it as: "[24]

Маърифатнинг гулзори Мулло Бозор
девона,

Ошиқларнинг сардори Мулло Бозор
девона.

Йўқтур асло кийнаси, баҳри урфон
сийнаси,

Нури Ҳақ ойинаси Мулло Бозор девона.
Жойларидур Наманган, Ҳақ йўлда жон
берган,

Муридларини севган Мулло Бозор
девона.

Ичларидур тўла нур, пирларидур Баҳодур,
Бухорода ул машҳур, Мулло Бозор
девона.

Машраб ўзи девона, ишқ ўтига парвона,
Йўл юродур сарсона, Мулло Бозор
девона[25].

So he was a sahibhol and a majzub man. This evidence is of great importance in studying the life of the Mashrab. Because, as they say in the stories of the Mashrab, Mullo Bazar Ohund was not "Saint modarzod", "Masti mustagriq" until he recognized. It is natural that in it there was a wit, a sharp vision, a mind and a peculiar mood. But the Mashrab was attracted by leeches. D.Hamroeva noted: "that is, first there was a solic, then a majzub. In some, the first seduction was a victory. They entered the leech after that. Of course, the seduction is a donation to his loved servant of the truth. But pir can educate his student in this way. The Mashrab was bred from leeches and seduction at this time. Mullah Bazar Oxund, who saw this quality in him, sent him to Qashqar"[26].

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A STUDY ON CUSTOMER SATISFACTION OF VOLKSWAGEN WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Volkswagen has been one of the leading manufacturers in terms of hatchback production, which traditionally has been a popular segment in Europe. The brand offered a range of hatchbacks from A-segment, B-segment, and C-segment. The Golf traditionally has been the strongest selling vehicle for the brand in Europe, followed by the smaller Polo which apart from the European market also has a stronghold in emerging markets. Sales for the hatchback category has slowed down due to the rise of the SUV segment

KEY WORDS: *Customer's satisfaction, Customer Simple percentage analysis, Likert scale analysis*

INTRODUCTION

Customer satisfaction (often abbreviated as CSAT) is a term frequently used in marketing. It is a measure of how products and services supplied by a company meet or surpass customer expectation. Customer satisfaction is defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals.

The Marketing Accountability Standards Board (MASB) endorses the definitions, purposes, and constructs of classes of measures that appear in *Marketing Metrics* as part of its ongoing Common Language in Marketing Project. In a survey of nearly 200 senior marketing managers, 71 percent responded that they found a customer satisfaction metric very useful in managing and monitoring their businesses.

It is seen as a key performance indicator within business and is often part of a Balanced Scorecard. In a competitive marketplace where businesses compete for customers, customer

satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy.

A business ideally is continually seeking feedback to improve customer satisfaction.

"Customer satisfaction provides a leading indicator of consumer purchase intentions and loyalty. "Customer satisfaction data are among the most frequently collected indicators of market perceptions. Their principal use is twofold:"

"Within organizations, the collection, analysis and dissemination of these data send a message about the importance of tending to customers and ensuring that they have a positive experience with the company's goods and services."

"Although sales or market share can indicate how well a firm is performing *currently*, satisfaction is perhaps the best indicator of how likely it is that the firm's customers will make further purchases *in the future*. Much research has focused on the relationship between customer satisfaction and retention. Studies



indicate that the ramifications of satisfaction are most strongly realized at the extremes."

On a five-point scale, "individuals who rate their satisfaction level as '5' are likely to become return customers and might even evangelize for the firm. (A second important metric related to satisfaction is willingness to recommend. This metric is defined as "The percentage of surveyed customers who indicate that they would recommend a brand to friends." When a customer is satisfied with a product, he or she might recommend it to friends, relatives and colleagues. This can be a powerful marketing advantage.) "Individuals who rate their satisfaction level as '1,' by contrast, are unlikely to return. Further, they can hurt the firm by making negative comments about it to prospective customers. Willingness to recommend is a key metric relating to customer satisfaction."

STATEMENT OF THE PROBLEM

This paper makes a study on the customer satisfaction of Volkswagen car. The entry of new multinational car companies had made fall in the demand for Volkswagen. The paper confined to determine the liking and disliking feature of Volkswagen enjoyed by its customer

SCOPE OF THE STUDY

- The research measures the experience of the customer.
- Defines and analysis the experience based on key deliverable.
- Gains insight in customer expectation

OBJECTIVES OF THE STUDY

- To identify the opinion of the customer satisfaction on Volkswagen
- To know the factors affecting the buying decision of the customers with the regard to the Volkswagen
- To analyze the market potentiality for the Volkswagen cars

RESEARCH METHODOLOGY

The preparation of the report included extensive study of the organization and market research, which was the primary source of the report. I have collected information from customer by preparing questionnaires

Primary data

The primary data was obtained through specially designed questionnaire schedule that will be logically framed and basically aimed at achieving the objectives of the study.

Secondary data

The secondary data are data which have already been collected by someone. Its main source is journals, newspapers, magazines and internet etc.

Sampling method

The selection criteria were based upon the data availability, convenience and the level of participation. Hence, the convenience sampling method is adopted

TOOLS FOR ANALYSIS

The study has various satisfied tools for the analysis of data. They are percentage analysis and cross tabulation.

- Simple percentile analysis
- Linkert scale analysis

LIMITATIONS OF THE STUDY

- The study is based upon primary data, so wrong information given by the respondents may mislead the findings.
- The sample size is restricted to 120 respondents

REVIEW OF LITERATURE

Ruan and xiaowen (2016) "With the fast economic development, china has been the largest automobiles market in the world since 2009. china has been the most important market for global automobiles enterprises in the past years. Germany Volkswagen brand has been enjoying the top popularity in Chinese market and china has been the largest market for Volkswagen automobiles. This study indicated that Chinese customer had very positive comments on germany country of origin image due to the friendly relationship between china and germany ;due to the popularity of automobiles manufacture and automobiles engineering ; due o fame of germany which mainly behaved as a developed country and had rich experiences and innovations in automobile manufacture and development.

Angie zhou (2016) "the Volkswagen scandal is a notorious example of how corporations can shape the ethical and political issue of the environment. The Volkswagen group that is headquartered in Wolfsburg, germany owns Bentley, Bugatti, Lamborghini, Audi and Skoda. The company is also facing lawsuits and criminal charges and the future of company looks grim. The analysis attempts to examine the problems of social concern presented by the behavior of Volkswagen in the international economy and provide some recommendation to increase the system of accountability within the global auto industry



Christopher soh xuan yi (2016) Volkswagen group is a german multinational automotive manufacturing company headquartered in Wolfsburg, the purpose of this plan focuses towards generating greater brand awareness, gaining a larger market presence to achieve higher sales-revenue. Through market research and data from interim and investor reports, it aim to retain and increase customer, generate sales and profit margins.

Researcher can better be appreciated only through the interpretations why this finding are, what can make others to understand the real significance his/her research finding.

The Tools used for analysis are

4.1 Simple percentage Method

4.2 Likert’s scaling technique value Analysis

ANALYSIS AND INTERPRETATION

Analysis and interpretation is essential for usefulness and utility of resources finding Analysis of data and interpretation in a general way involves a number of closely related operations, which are performed with a purpose of summarizing the collected data, organizing these in such manner that they answer the research question.

SIMPLE PERCENTAGE ANALYSIS

This analysis is carried out for the most of the question givens in questionnaires. This analysis described the classification of the respondents failing each category. The percentage analysis is used mainly for the standardization and comparisons are in support with the analysis

FORMULA

$$\text{Percentage} = \frac{\text{Number of Respondents}}{\text{Total No. of Respondents}} \times 100$$

TABLE 4.1.1
TABLE SHOWING GENDER OF THE RESPONDENTS

S.NO	GENDER	NO.OF. RESPONDENTS	PERCENTAGE (%)
1	Male	33	22.5
2	Female	87	72.5
	TOTAL	120	100

(Source : Primary Data)

INTERPRETATION

In the above table 4.1.1 shows out of total 120 respondents, 72.5% of the respondents are male and 22.5% of the respondents are female.

Majority, 72.5% of the respondents are male.

LIKERT SCALE ANALYSIS

A Likert scale analysis is a method of measuring attitudes. Ordinary scale to response to a question or statement, order in hierarchical sequence from strongly negative to strongly positive, used mainly in behavioral science and psychiatry. In Likert’s method a person’s attitude is measured by combining (additional or average) their responses across all items.

FORMULA

$$\text{Likert scale} = \frac{\sum fx}{\text{Total number of respondents}}$$

Where;

F= Number of respondents

X= Likert scale value

FX= Total score



MID VALUE

Mid-value indicates the middle most value of the Likert Scale

LIKERT'S SCALING METHOD

TABLE 4.2.1

TABLE SHOWING THE FEATURES OF VOLKSWAGEN FACILITIES

S.NO	FACTORS	NO.OF. RESPONDENTS (F)	LIKERT VALUE (X)	TOTAL SCORE (FX)
1	Excellent	65	5	325
2	Good	29	4	116
3	Average	25	3	75
4	Poor	1	2	2
5	Bad	-	1	-
	TOTAL	120		518

(Source: primary data)

$$\begin{aligned} \text{LIKERT SCALE VALUE} &= \sum FX / \text{No. of Respondents} \\ &= 518/120 \\ &= 4.31 \end{aligned}$$

INTERPRETATION

Likert scale value is 4.31, so the features of Volkswagen facilities are excellent.

- Majority, 45.8% of the respondents are say yes.

FINDINGS OF THE STUDY

Finding of simple percentage analysis

- Majority, 72.5% of the respondents are male.
- Majority, 40% of the respondents are 18years-25 years and 26years-35years.
- Majority, 64.2% of the respondents are married.
- Majority, 60.8% of the respondents are nuclear family.
- Majority, 51.7% of the respondents are under graduate.
- Majority, 42.5% of the respondents are students.
- Majority, 41.7% of the respondent's monthly income are Rs.25, 00,000 – Rs. 35, 00,000.
- Majority, 30% of the respondents using by 3 years.
- Majority, 40% of the respondents are friends and relatives.
- Majority, 42.5% of the respondents are preferred for good designs.
- Majority, 43.3% of the respondents are good.
- Majority, 35% of the respondents are average.
- Majority, 40% of the respondents are good.
- Majority, 31.7% of the respondents are very well and well.
- Majority, 50.8% of the respondents are feel average.

Findings of likert scale analysis

- Likert scale value is 4.31, so the features of Volkswagen facilities are excellent.
- Likert scale value is 3.93, so the features of Volkswagen design are good.
- Likert scale value is 3.76, so the features of Volkswagen service are good.
- Likert scale value is 3.89, so the features of Volkswagen mileage are good.
- Likert scale value is 3.59, so the customers are satisfied with comfort.
- Likert scale value is 3.19, so the customers are satisfied with design.
- Likert scale value is 3.1, so the customers are satisfied with space value.
- Likert scale value is 3.08, so the customers are satisfied with maintenance cost.

SUGGESTIONS

- More attractive advertisement has to provide through various advertisement.
- Respondents are incurring high maintenance costs and it has to be considered by the manufacturer
- Respondents are also facing problems in mileage & performance, so this is another suggestion to the manufacturer is to an additional care



- Company should upgrade or innovate a new technical features in Volkswagen
- The company should keep in mind that the need of young generation.

CONCLUSION

Today there are number of brands of products available in the market which differ in price , taste, and performance , quality etc., but customer prefers to purchase their brands due to various reasons. The attitude of customer's may change their preference of the choice of the product that may influence because of various factors like price, appearance, performance etc., so the manufacturers may give more attention to the customer preference which may host to the possession of company in the market. The present study reveals that majority of the respondents preferred to buy Volkswagen for its design and comfort, so the company holds maintain it and increase the more number of customers.

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PRIVACY PROTECTION AND INTRUSION AVOIDANCE FOR CLOUDLET-BASED MEDICAL DATA SHARING

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Article DOI: <https://doi.org/10.36713/epra5789>

ABSTRACT

Remote health monitoring and older health care has become a popular application with the advance of wearable medical devices. Privacy protection and intrusion avoidance for cloudlet-based medical data sharing data collected from patients through wearable devices (such as heartbeat, blood pressure, etc.) must be passed to cloud-run applications to implement various services such as expert advice, emergency assistance, etc.

The cloud storage system provides distributed clients with convenient file storage and sharing services. To solve integrity, we present identity based data outsourcing , outsourcing and original auditing concerns about outsourced documents, the program is equipped with an ideal feature that facilitates existing recommendations to protect outsourcing data.

1. INTRODUCTION

Privacy protection and intrusion avoidance the huge amount of data collected by body area network(BAN) nodes requires scalable, on-demand, powerful, and secure storage and processing infrastructure. Projects reports on Privacy protection and intrusion cloud computing plays an important role in achieving the aforementioned objects.

Project on Privacy protection and intrusion avoidance for cloudlet- based medical data sharing. The cloud computing environment connects different devices ranging from miniaturized sensor nodes to high-performance supercomputer to deliver people-centric and context-centric services to individuals and industries. The possible integration of BANs with cloud computing will introduce a viable and hybrid platform that must be able to process the enormous amount of data collected from multiple BANs

With the development of healthcare big data and wearable technology as well as cloud computing and communication technologies cloud-assisted healthcare big data computing becomes critical to meet users evergrowing demands on health consultation .The trace of the disease treatment process for the retrieval of realtime disease information .Healthcare social platform, such as Patients Like Us can obtain information from other

similar patients through data sharing in terms of user's own findings. Though sharing medical data on the social network is beneficial to both patients and doctors the sensitive data might be leaked or stolen, which causes privacy and security problems without efficient protection for the shared data . Therefore, how to balance privacy protection with the convenience of medical data sharing becomes a challenging issue. With the advances in cloud computing, a large amount of data can be stored in various clouds including cloudlets and remote clouds facilitating data sharing and intensive computation

2. LITERATURE SURVEY

2.1“Data privacy in cloud-assisted healthcare systems: State of the art and future challenges”.

The system is privacy-assured where cloud sees neither the original samples nor underlying data. It handles well sparse and general data, and data tampered with noise.

2.2“Behaviour rule specification-based intrusion detection for safety critical medical cyber physical systems”.

We demonstrate that our intrusion detection technique can effectively trade false positives off for a high detection probability to cope with more



sophisticated and hidden attackers to support ultra safe and secure MCPS applications.

2.3“Cloudlet mesh for securing mobile clouds from intrusions and network attacks”.

We have specified A sequence of authentication, authorization, and encryption protocols for securing communications among mobile devices, cloudlet servers, and distance clouds.

2.4 “Cloudlet-based efficient data collection in wireless body area networks”.

The proposed work also attempts to minimize the end-to-end packet delay by choosing dynamically a neighbour cloudlet, so that the overall delay is minimized.

2.5 “Privacy-preserving multi-keyword ranked search over encrypted cloud data”.

We first offer a basic idea for the multi keyword ranked search over encrypted cloud data (MRSE) based on effective comparison measure of coordinate matching.

2.6“A collaborative intrusion detection and prevention system in cloud computing”.

We propose a collaborative model consists of the Intrusion Detection and Prevention System functions based distributed IDS and IPS, with the use of a hybrid detection technique for addressing the problems of attacks encountered, specifically distributed attacks such as port scanning attacks and distributed internally established within a Cloud Computing environment by users entitled to access, including the integration of the Signature Apriori Algorithm for generating new attack signatures whose objective is to develop the functioning of our security system to be able to detect and block various types of attacks and intrusions.

2.7 “Security models and requirements for healthcare application clouds”.

We describe an EHR security reference model for managing security issues in healthcare clouds, which highlights three important core components in securing an EHR cloud.

3. PROPOSED SYSTEM

- ✓ In this project, this paper proposes a cloudlet based human services framework. The body information gathered by wearable device is transmitted to the adjacent cloudlet. That information is additionally conveyed to the remote cloud where specialists can get for disease finding.

- ✓ In the main stage, user's vital signs gathered by wearable gadgets are conveyed to gateway of cloudlet. In this stage, information security is the primary concern. In the second stage, client's information will be additionally conveyed toward remote cloud through cloudlets.
- ✓ A cloudlet is framed by a specific number of cell phones whose proprietors may require as well as offer some particular information substance.
- ✓ Considering the client's medical information are put away in remote cloud, we order these medical information into various types and take the relating security approach. Not with standing over three phases based information security assurance.

4. MODULES EXPLANATION

1. Patient

In this module, there are numbers of patient are there. Patient should register to the application before they do some operation into applications and register patient details are stored in patient module. After registration successful they has to login by using authorized username or email and password. After that they will do some operations like Send Appointment Request to doctor, Access Request from doctor, Receive Prescription from doctor

2. Doctor

- Doctor should Login to the application.
- Doctor can view Patient Request
- Doctor can send Request Access to Cloudlet one or two
- Doctor can view patient information's
- Doctor can update patient health records like BP, Send prescription details to patient

3. CloudLet

In this module, the Cloudlet has to login to application by using username and password. After login successful they can do some operations such as Add Doctor details, View all Doctor Information, view Patient, and view the Intruder Detection Details

4. Intruder

Intruder Login to application Intruder can view patient records and it is encrypted format Intruder can try to modify patient data means alert notification will send to patient or cloudlet

5. SYSTEM ARCHITECTURE

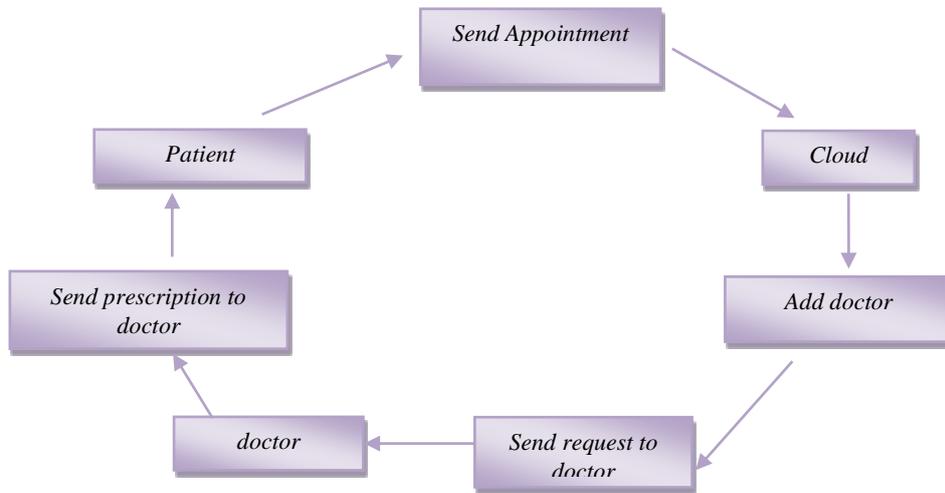
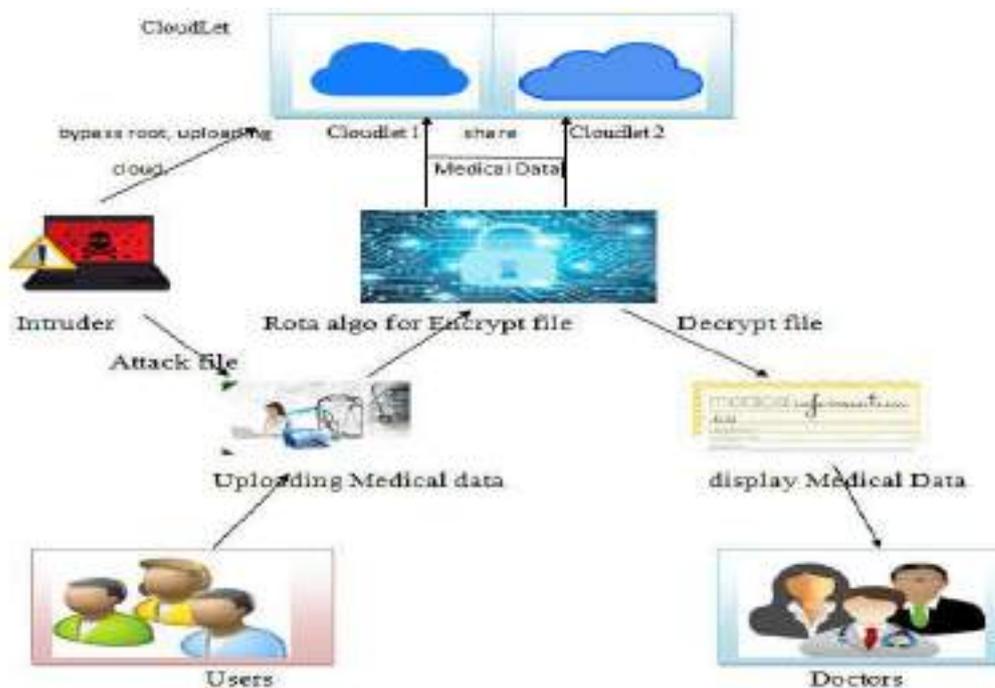


Fig.5.1 System architecture

In this figure the patient has login to application and send the appointment request to cloud owner and then cloud owner view the request of patient and choose the doctor according to patient details and doctor has to login to application and can view the patient request and send the prescription to

the patient. Patient can view the prescription report and patient has to send a received message to the doctor.

6. DATA FLOW DIAGRAM



6.1 Data Flow Diagram Dataflow Diagram



It is defined as a graphical representation of how the data flow through a data system and also models its process aspects. The DFD represents what type of data is given to system in form of out and what kind of output will be received from the output

7. RELATED WORK

Our work is closely related to cloud-based privacy preserving and cloudlet mesh based collaborative IDS. We will give a brief review of the works in these aspects. Cloud-based Privacy Preservation Despite the development of the cloud technology and emergence of more and more cloud data sharing platforms, the clouds have not been widely utilized for healthcare data sharing due to privacy concerns. There exist various works on conventional privacy protection of healthcare data.

In Lu et al. a system called SPOC, which stands for the secure and privacy-preserving opportunistic computing framework, was proposed to treat the storage problem of healthcare data in a cloud environment and addressed the problem of security and privacy protection under such an environment.

The article proposed a compound resolution which applies multiple combined technologies for the privacy protection of healthcare data sharing in the cloud environment. In Cao et al. an MRSE (multikeyword ranked search over encrypted data in cloud computing) privacy protection system was presented, which aims to provide users with a multi-keyword method for the cloud's encrypted data. Although this method can provide result ranking, in which people are interested, the amount of calculation could be cumbersome. In Zhang et al. a priority based health data aggregation (PHDA) scheme was presented to protect and aggregate different types of healthcare data in cloud assisted wireless body area network (WBANs).

The article investigates security and privacy issues in mobile healthcare networks, including the privacy-protection for healthcare data aggregation, the security for data processing and misbehavior. describes a flexible security model especially for data centric applications in cloud computing based scenario to make sure data confidentiality, data integrity and fine grained access control to the application data. give a systematic literature review of privacy protection in cloud-assisted healthcare system.

Collaborative IDS based on cloudlet mesh A number of prior works have studied different intrusion detection systems with quite some advances. For example, proposed a behavior-rule specification-based technique for intrusion detection. The main contribution is the performance outperforms other methods of anomaly-based techniques.

Proposed a collaborative model for the cloud environment based on distributed IDS and IPS (intrusion prevention system). This model makes use of a hybrid detection technique to detect and take corresponding measures for any types of intrusion which harm the system, especially distributed intrusion. However, collaborative IDS based on the cloudlet mesh structure is a new kind of intrusion detection technique, which was first proposed in Shi et al.

8. ADVANTAGES AND DISADVANTAGES

8.1 ADVANTAGES

- ▲ A cloudlet based healthcare system is presented, where the privacy of users' physiological data and the efficiency of data transmissions are our main concern. We use NTRU for data protection during data transmissions to the cloudlet.
- ▲ So as to share information in the cloudlet, we utilize client comparability and notoriety to develop confidence in show.
- ▲ We isolate information in remote cloud into various types and use encryption system to ensure them individually.

8.2 DISADVANTAGES

- ▲ Sources communication energy feeding.
- ▲ Virtually, medical records sharing is a dangerous and stimulating issues
- ▲ Causes communication energy consumption. Practically, medical data sharing is a critical and challenging issue No Trust.

9. CONCLUSIONS

In this paper, we investigated the problem of privacy protection and sharing large medical data in cloudlets and the remote cloud. We developed a system which does not allow users to transmit data to the remote cloud in consideration of secure collection of data, as well as low communication cost. However, it does allow users to transmit data to a cloudlet, which triggers the data sharing problem in the cloudlet. Firstly, we can utilize wearable devices to collect users' data, and in order to protect users privacy Cost and detection rate of the entire IDS system. The optimal configuration is shown to use 4 IDS's with a 75% detection rate under a minimum system cost of 0.02. Only relative costs are shown here. make sure the transmission of users' data to cloudlet in security. Secondly, for the purpose of sharing data in the cloudlet, we use trust model to measure users' trust level to judge whether to share data or not. Thirdly, for privacy-preserving of remote cloud data, we partition the data stored in the remote cloud and encrypt the data in different ways, so as to not just ensure data protection but also accelerate the



efficacy of transmission. Finally, we propose collaborative IDS based on cloudlet mesh to protect the whole system. The proposed schemes are validated with simulations and experiments.

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ON UNCERTAIN MEASURE

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ABSTRACT

In this work we studied some rustles that related with uncertain measure and this kind of measure is the first basic idea for uncertainty theory which found in (2007) and refined in (2010) by Prof. B. Liu, also we introduced some of the new properties for uncertain measure in addition we introduced the idea of continuous uncertain measure.

INTRODUCTION

Some information and knowledge are usually represented by human language like "about 100km", "approximately 39°C", "roughly 80kg", "low speed", "middle age", and "big size". How do we understand them? Perhaps some people think that they are subjective probability or they fuzzy concepts. However, a lot of surveys showed that those imprecise quantities behaved neither like randomness nor like fuzziness. In other words, those imprecise quantities behaved cannot be quantified by probability measure (Kolmogorove in 1933), capacity (Choquet in 1954), fuzzy measure (Sugeno in 1974), possibility measure (Zadeh in 1978), and credibility measure (B.Liu and Y.Liu in 2002). In order to develop a theory of uncertain measure, (B.Liu) defined a new measure, (B.Liu) founded an uncertainty theory that is a branch of mathematics based on normality, self-duality, countable subadditivity and product measure axioms [9].

This work consists of introduction and two chapters. In chapter one, we recall some basic definitions of sigma field, probability measure uncertain measure, uncertain variable, Also, we recalled first basic some properties of uncertain measure. Chapter two is devoted to continuous uncertain measure and it's Properties.

Chapter 1

In this chapter, we gave some basic definitions, properties, results and some of the basic concepts that related with uncertain measure. In section one, we defined (Sigma field) and recalled some of the applications and theorems that related with it. In sections two, we recalled the definition of the uncertain measure and recalled some of the applications and the first properties for it.

**§(1.1) Sigma Field****Definition (1.1.1)[1,10]**

A family F of subsets of a set Ω is called a σ -field (σ -algebra) on a set Ω , if

(1) $\Omega \in F$

(2) If $A \in F$, then $A^c \in F$

(3) If $A_n \in F, n = 1, 2, \dots$, then $\bigcup_{n=1}^{\infty} A_n \in F$

A measurable Space is a pair (Ω, F) , where Ω is a set and F is a σ -field on Ω . A subset A of Ω is called measurable (measurable with respect to the σ -field F), if $A \in F$, i.e., any member of F is called a measurable set.

• It is clear to show that

(1) $\phi \in F$: for $\Omega \in F$ and $\phi = \Omega^c \in F$. (2) If $A_n \in F, n = 1, 2, \dots$, then $\bigcap_{n=1}^{\infty} A_n \in F$,

$\limsup_{n \rightarrow \infty} A_n \in F$ and $\liminf_{n \rightarrow \infty} A_n \in F$. (3) If $A_1, A_2, \dots, A_n \in F$, then $\bigcup_{i=1}^n A_i \in F$ and

$\bigcap_{i=1}^n A_i \in F$

Example (1.1.2)[1,10]

(1) The family $F = \{\phi, \Omega\}$ is a σ -field on Ω . (2) The family F of all subsets of a set Ω is a σ -field on Ω . (3) The family F of all finite subsets of R is a σ -field on R iff Ω is finite. (4) The family F of all bounded subsets of R is not a σ -field on R . (5) If A is subset of a set of Ω , then $F = \{\phi, A, A^c, \Omega\}$ is a σ -field on Ω .

Theorem (1.1.3)[1]

If $\{F_\lambda\}_{\lambda \in \Lambda}$ be an arbitrary family of σ -field on a set Ω with $\Lambda \neq \phi$, then $F = \bigcap_{\lambda \in \Lambda} F_\lambda$ is a σ -field on Ω .

Definition (1.1.4)[1]

Let G be a family of subsets of a set Ω . The smallest σ -field containing G called the σ -field generated by G and it is denoted by $\sigma(G)$



• It is clear to show that (1) $\sigma(G)$ = intersection of all σ -fields on Ω , which contain G .

(2) $\sigma(G) = G$ iff G is σ -field on Ω .

Definition (1.1.5)[1]

Let (Ω, τ) be a topological space. The σ -field generated by τ is called the Borel σ -field and it is denoted by $\beta(\Omega)$, i.e. $\beta(\Omega) = \sigma(\tau)$. The member of $\beta(\Omega)$ are called Borel sets of Ω .

Definition (1.1.6)[1]

Let G be a family of subsets of a set Ω , and let $A \subset \Omega$. The restriction (or trace) of G on A is a collection of all sets by the form $A \cap B$, where $B \in G$, and it is denoted by G_A (or $A \cap G$)

$$G_A = A \cap G = \{A \cap B : B \in G\}$$

G_A is a family of subsets of A . The σ -field $\sigma(G_A)$ generated by G_A some time denoted by $\sigma_A(A \cap G)$, i.e., $\sigma(G_A) = \sigma_A(A \cap G)$

Theorem (1.1.7)[1]

Let G be a family of subsets of a set Ω , and let $A \subset \Omega$

(1) $A \cap \sigma(G)$ is a σ -field on A . (2) $\sigma(G_A) = A \cap \sigma(G)$ (3) If G is closed under finite intersection and $A \in G$, then $G_A = \{B \in G : B \subset A\}$ (4) If G is a σ -field on Ω , then G_A is a σ -field on A .

Definition (1.1.8)[1]

Let F_i be a σ -field of subsets of Ω_i , $i = 1, 2, \dots, n$, and let $\Omega = \prod_{i=1}^n \Omega_i$. A measurable rectangle in Ω is a set $A = \prod_{i=1}^n A_i$, where $A_i \in F_i$ for each $i = 1, 2, \dots, n$. The smallest σ -field containing the measurable rectangle is called the product σ -field, and denoted by $\prod_{i=1}^n F_i$. If all F_i coincide with fixed σ -field, the product σ -field is denoted by F^n .

§(1.2) Uncertainty Space

Definition (1.2.1)[1]

A measure on a σ -field F is a non-negative, extended real valued function P on F such that whenever $A_1, A_2, \dots, A_n, \dots$ form a finite or countably infinite collection of disjoint sets in F , we have

$$P\left(\bigcup_{n=1}^{\infty} A_n\right) = \sum_{n=1}^{\infty} P(A_n) \quad (1.1)$$



- If $P(\Omega) = 1$, P is called a probability measure.
- A measure space is a triple (Ω, F, P) where Ω is a set, F is a σ -field on Ω and P is a measure on F . If P is a probability measure, (Ω, F, P) is called probability space.
- If (Ω, F, P) is a probability space, the set Ω is called the sample space, the subsets of Ω which belong to F are called events.

Definition (1.2.2)[7]

Let (Ω, F) be a measurable space. A set function $\mu : F \rightarrow R$ is said to be an uncertain measure on F if it satisfies the following axioms:

Axiom 1.(Normality Axiom) : $\mu(\Omega) = 1$ for the universal set Ω .

Axiom 2.(Self-Duality Axiom): $\mu(A) + \mu(A^c) = 1$ for any event A .

Axiom 3.(Countable Subadditivity Axiom): For every countable sequence of events $\{A_n\}$, we have

$$\mu\left(\bigcup_{n=1}^{\infty} A_n\right) \leq \sum_{n=1}^{\infty} \mu(A_n)$$

An uncertainty space is a triple (Ω, F, μ) where Ω is a set, F is a σ -field on Ω , μ is a uncertain measure on F . In 2009, Liu proposed the fourth axiom of uncertainty theory called product measure axiom.

Axiom 4.(Product Measure Axiom): Let (Ω_k, F_k, μ_k) be uncertainty spaces for $k = 1, 2, \dots, n$. Then the product uncertain measure μ is an uncertain measure on the product σ -field $F_1 \times F_2 \times \dots \times F_n$ satisfying :

$$\mu\left(\prod_{k=1}^n A_k\right) = \min\{\mu_k(A_k) : A_k \in F_k, k = 1, 2, \dots, n\}$$

That is, for each event $A \in F = F_1 \times F_2 \times \dots \times F_n$, we have

$$\mu(A) = \begin{cases} \alpha, & \alpha > 0.5 \\ 1 - \beta, & \beta > 0.5 \\ 0.5, & o.w \end{cases}$$

where $\alpha = \sup\{\min\{\mu_k(A_k) : k = 1, 2, \dots, n\} : A_1 \times A_2 \times \dots \times A_n \subseteq A\}$,
 $\beta = \sup\{\min\{\mu_k(A_k) : k = 1, 2, \dots, n\} : A_1 \times A_2 \times \dots \times A_n \subseteq A^c\}$

**Remark (1.2.3)[2]**

Probability measure satisfies the above three axioms, probability is not a special case of uncertainty theory because the product probability measure does not satisfy the product measure axiom.

(4) If **Example (1.2.4)[5,7]**

Let $\Omega = \{a, b, c\}$. $F = \{\phi, \{a\}, \{b\}, \{c\}, \{a, b\}, \{a, c\}, \{b, c\}, \Omega\}$

Define $\mu : F \rightarrow R$ by

$$\begin{aligned} \mu(\phi) &= 0, & \mu(\{a\}) &= 0.6, & \mu(\{b\}) &= 0.3, & \mu(\{c\}) &= 0.2, \\ \mu(\{a, b\}) &= 0.8, & \mu(\{a, c\}) &= 0.7, & \mu(\{b, c\}) &= 0.4, & \mu(\Omega) &= 1 \end{aligned}$$

Then μ is an uncertain measure because it satisfies the four axioms.

And

(1) If $A_1 = \{a, b\}$, $A_2 = \{a, c\}$, then $A_1 \cup A_2 = \Omega$, $A_1 \cap A_2 = \{a\}$, $A_1 \cap A_2^c = \{b\}$, and

- $\mu(A_1 \cap A_2) + \mu(A_1 \cap A_2^c) = \mu(\{a\}) + \mu(\{b\}) = 0.6 + 0.3 = 0.9$, $\mu(A_1) = \mu(\{a, b\}) = 0.8$
 $\mu(A_1) \neq \mu(A_1 \cap A_2) + \mu(A_1 \cap A_2^c)$

$$\mu(A_1 \cup A_2) + \mu(A_1 \cap A_2) = \mu(\Omega) + \mu(\{a\}) = 1 + 0.6 = 1.6$$

- $\mu(A_1) + \mu(A_2) = \mu(\{a, b\}) + \mu(\{a, c\}) = 0.8 + 0.7 = 1.5$
 $\mu(A_1 \cup A_2) + \mu(A_1 \cap A_2) \neq \mu(A_1) + \mu(A_2)$

(2) If $A_1 = \{a\}$, $A_2 = \{b\}$, then $A_1 \cap A_2 = \phi$, and

- $\mu(A_1 \cup A_2) = \mu(\{a, b\}) = 0.8$, $\mu(\{a\}) + \mu(\{b\}) = 0.6 + 0.3 = 0.9$
 $\mu(A_1 \cup A_2) = \mu(\{a, b\}) \neq \mu(\{a\}) + \mu(\{b\})$

(3) If $A_1 = \{a\}$, $A_2 = \{a, c\}$, then $A_1 \subset A_2$ and $A_2 - A_1 = \{c\}$

- $\mu(A_2 - A_1) = 0.2$, $\mu(A_2) - \mu(A_1) = 0.7 - 0.6 = 0.1$
 $\mu(A_2 - A_1) \neq \mu(A_2) - \mu(A_1)$

$A_1 = \{a\}$, $A_2 = \{b\}$, then

$$\mu(A_1 \cap A_2) = \mu(\phi) = 0$$

- $\mu(A_1) \cdot \mu(A_2) = 0.18$
 $\mu(A_1 \cap A_2) \neq \mu(A_1) \cdot \mu(A_2)$

Example (1.2.5)[7]

Suppose that $u : R \rightarrow R$ is a nonnegative function satisfying $\sup\{u(x) + u(y) : x \neq y\} = 1$



Then for any set A of real numbers, the set function

$$\mu(A) = \begin{cases} \sup\{u(x) : x \in A\}, & \text{if } \sup\{u(x) : x \in A\} < 0.5 \\ 1 - \sup\{u(x) : x \in A^c\}, & \text{if } \sup\{u(x) : x \in A\} \geq 0.5 \end{cases}$$

is an uncertain measure on R .

Ans:

Step1: We prove the normality ,i.e., $\mu(R) = 1$.the argument breaks down into two cases .

Case 1: Assume $\sup\{u(x) : x \in R\} < 0.5$.but this is impossible because $\sup\{u(x) + u(y) : x \neq y\} = 1$,then $\mu(R) \neq 1$.

Case 2: Assume $\sup\{u(x) : x \in R\} \geq 0.5$.then $\mu(R) = 1 - \sup\{u(x) : x \in R^c\}$
 $= 1 - \sup\{\phi\} = 1$

Step2: We prove the self-duality ,i.e., $\mu(A) + \mu(A^c) = 1$. the argument breaks down into two cases .

Case 1: Assume $\sup\{u(x) : x \in A\} < 0.5$.

Then $\mu(A) = \sup\{u(x) : x \in A\}$

$$\mu(A^c) = 1 - \sup\{u(x) : x \in ((A^c)^c)\} = 1 - \mu(A) .$$

Case 2: Assume $\sup\{u(x) : x \in A\} \geq 0.5$.

Then $\mu(A) = 1 - \sup\{u(x) : x \in A^c\}$

$$\mu(A^c) = 1 - (1 - \sup\{u(x) : x \in A^c\}) = 1 - \mu(A)$$

Step3: We prove the countable subadditivity of μ . For simplicity, we only prove the cases of two events A_1 and A_2 . the argument breaks down into two cases .

Case 1: Assume $\mu(A_1) < 0.5$ and $\mu(A_2) < 0.5$.

Then $\mu(A_1 \cup A_2) < 0.5$. But since $\sup\{u(x) + u(y) : x \neq y\} = 1$,

Then $\mu(A_1 \cup A_2) \leq \mu(A_1) + \mu(A_2)$.

Case 2: Assume $\mu(A_1) \geq 0.5$ and $M(A_2) < 0.5$.When $\mu(A_1 \cup A_2) = 0.5$, since $\sup\{u(x) + u(y) : x \neq y\} = 1$

then $\mu(A_1 \cup A_2) \leq \mu(A_1) + \mu(A_2)$.



Example (1.2.6)[7]

Suppose $u : R \rightarrow R$ is a nonnegative and integrable function such that $\int_R u(x)dx \geq 1$.

Then for any Borel set A of real numbers, the set function

$$\mu(A) = \begin{cases} \int_A u(x)dx, & \text{if } \int_A u(x)dx < 0.5 \\ 1 - \int_{A^c} u(x)dx, & \text{if } \int_{A^c} u(x)dx < 0.5 \\ 0.5, & \text{o.w} \end{cases}$$

is an uncertain measure on R .

Ans:

By the same answer of example (1.2.5).

Example (1.2.7)[7]

Suppose $u : R \rightarrow R$ is a nonnegative function and $v : R \rightarrow R$ is a nonnegative and integrable function such that

$$\sup\{u(x) : x \in A\} + \int_A v(x)dx \geq 0.5 \text{ and } \sup\{u(x) : x \in A^c\} + \int_{A^c} v(x)dx \geq 0.5$$

for any Borel set A of real numbers. Then the set function

$$\mu(A) = \begin{cases} \sup\{u(x) : x \in A\} + \int_A v(x)dx, & \text{if } \sup\{u(x) : x \in A\} + \int_A v(x)dx < 0.5 \\ 1 - \sup\{u(x) : x \in A^c\} - \int_{A^c} v(x)dx, & \text{if } \sup\{u(x) : x \in A^c\} + \int_{A^c} v(x)dx < 0.5 \\ 0.5, & \text{o.w} \end{cases}$$

is an uncertain measure on R .

Ans:

By the same answer of example (1.2.5).

The first basic properties of an uncertain measure are collected in the following theorem.

Theorem (1.2.8)[7]

Let (Ω, F, μ) be an uncertainty space, then

- (1) $\mu(\phi) = 0$.
- (2) If $A_1, A_2 \in F$ and $A_1 \subset A_2$, then $\mu(A_1) \leq \mu(A_2)$
- (3) If $A_1, A_2, \dots, A_n \in F$, then $\mu(\bigcup_{k=1}^n A_k) \leq \sum_{k=1}^n \mu(A_k)$.



(4) $\max\{\mu(A_1), \mu(A_2)\} \leq \mu(A_1 \cup A_2) \leq \mu(A_1) + \mu(A_2)$ for all $A_1, A_2 \in F$.

(5) $\mu(A_1) + \mu(A_2) - 1 \leq \mu(A_1 \cap A_2) \leq \min\{\mu(A_1), \mu(A_2)\}$ for all $A_1, A_2 \in F$.

(6) $0 \leq \mu(A) \leq 1$ for all $A \in F$.

Proof :

(1) Since $\mu(A) + \mu(A^c) = 1$ for all $A \in F$ and $\Omega^c = \phi$, then $\mu(\Omega) + \mu(\phi) = 1$

$$\Rightarrow \mu(\phi) = 1 - \mu(\Omega) = 1 - 1 = 0$$

(2) Since $A_1 \subseteq A_2 \Rightarrow \Omega = A_1^c \cup A_2 \Rightarrow 1 = \mu(\Omega) \leq \mu(A_1^c) + \mu(A_2) = 1 - \mu(A_1) + \mu(A_2)$

$$\Rightarrow \mu(A_1) \leq \mu(A_2).$$

(3) Put $A_k = \phi$ for all $k \geq n + 1$

$$\Rightarrow \{A_k\} \text{ is a sequence of disjoint sets in } F \Rightarrow \bigcup_{k=1}^{\infty} A_k = \bigcup_{k=1}^n A_k$$

$$\mu\left(\bigcup_{k=1}^n A_k\right) = \mu\left(\bigcup_{k=1}^{\infty} A_k\right) \leq \sum_{k=1}^{\infty} \mu(A_k) = \sum_{k=1}^n \mu(A_k) + \sum_{k=n+1}^{\infty} \mu(A_k) = \sum_{k=1}^n \mu(A_k) + \mu(\phi) = \sum_{k=1}^n \mu(A_k)$$

(4) Let $A_1, A_2 \in F$

$$\text{since } A_1 \subseteq A_1 \cup A_2, A_2 \subseteq A_1 \cup A_2 \Rightarrow \mu(A_1) \leq \mu(A_1 \cup A_2), \mu(A_2) \leq \mu(A_1 \cup A_2)$$

$$\max\{\mu(A_1), \mu(A_2)\} \leq \mu(A_1 \cup A_2)$$

since from (3), we have $\mu(A_1 \cup A_2) \leq \mu(A_1) + \mu(A_2)$

hence $\max\{\mu(A_1), \mu(A_2)\} \leq \mu(A_1 \cup A_2) \leq \mu(A_1) + \mu(A_2)$ for all $A_1, A_2 \in F$

(5) Let $A_1, A_2 \in F$

$$(a) \text{ Since } \mu(A_1^c \cup A_2^c) \leq \mu(A_1^c) + \mu(A_2^c)$$

$$\Rightarrow -\mu(A_1^c \cup A_2^c) \geq -\mu(A_1^c) - \mu(A_2^c) = -(1 - \mu(A_1)) - (1 - \mu(A_2)) = \mu(A_1) + \mu(A_2) - 2$$

$$\mu(A_1 \cap A_2) = 1 - \mu((A_1 \cap A_2)^c) = 1 - \mu(A_1^c \cup A_2^c) \geq 1 + \mu(A_1) + \mu(A_2) - 2 = \mu(A_1) + \mu(A_2) - 1$$

Hence, $\mu(A_1) + \mu(A_2) - 1 \leq \mu(A_1 \cap A_2)$ for all $A_1, A_2 \in F$

(b) Since $A_1 \cap A_2 \subseteq A_1, A_1 \cap A_2 \subseteq A_2 \Rightarrow \mu(A_1 \cap A_2) \leq \mu(A_1), \mu(A_1 \cap A_2) \leq \mu(A_2)$

$$\Rightarrow \mu(A_1 \cap A_2) \leq \min\{\mu(A_1), \mu(A_2)\}$$



Therefore $\mu(A_1) + \mu(A_2) - 1 \leq \mu(A_1 \cap A_2) \leq \min\{\mu(A_1), \mu(A_2)\}$ for all $A_1, A_2 \in F$

(6) Let $A \in F$

Since $\phi \subset A \subset \Omega$, then $\mu(\phi) \leq \mu(A) \leq \mu(\Omega)$

Since $\mu(\phi) = 0$, $\mu(\Omega) = 1$, then $0 \leq \mu(A) \leq 1$.

Chapter2

In this chapter we have reviewed Null-Additivity theorem and Asymptotic theorem . Also, we have defined continuous uncertain measure and recalled some properties that related with it.

§(2.1) Sequences of Sets

Let $\{x_n\}$ be a sequence of real numbers. Define

$$\limsup_{n \rightarrow \infty} x_n = \inf \left\{ \sup \{x_m : m \geq n\} : n \geq 1 \right\} \text{ and } \liminf_{n \rightarrow \infty} x_n = \sup \left\{ \inf \{x_m : m \geq n\} : n \geq 1 \right\}$$

If $\limsup_{n \rightarrow \infty} x_n = \liminf_{n \rightarrow \infty} x_n$, we say that the limit exists and write $\lim_{n \rightarrow \infty} x_n$

Definition(2.1.1)[1]

Let $\{A_n\}$ be a sequence of subsets of a set Ω . The set of all points which belong to infinitely many sets of the sequence $\{A_n\}$ is called the upper limit (or limit superior) of $\{A_n\}$ and (in symbol A^*) and defined by

$$A^* = \limsup_{n \rightarrow \infty} A_n = \{x \in A_n : \text{for infinitely many } n\} = \bigcap_{n=1}^{\infty} \bigcup_{k=n}^{\infty} A_k = \lim_{n \rightarrow \infty} \bigcup_{k=n}^{\infty} A_k$$

Thus,

$$x \in A^* \text{ iff for all } n, \text{ then } x \in A_k \text{ for some } k \geq n$$

The lower limit (or limit inferior) of $\{A_n\}$, denoted by A_* is the set of all points which belong to almost all sets of the sequence $\{A_n\}$, and defined by $A_* = \liminf_{n \rightarrow \infty} A_n = \{x \in A_n : \text{for all but finitely many } n\}$

$$= \bigcup_{n=1}^{\infty} \bigcap_{k=n}^{\infty} A_k = \lim_{n \rightarrow \infty} \bigcap_{k=n}^{\infty} A_k$$

Thus,

$$x \in A_* \text{ iff for some } n, \text{ then } x \in A_k \text{ for all } k \geq n$$

Theorem (2.1.2)[1]

Let $\{A_n\}$ be a sequence of subsets of a set Ω .



$$(1) (\limsup_{n \rightarrow \infty} A_n)^c = \liminf_{n \rightarrow \infty} A_n^c$$

$$(2) (\liminf_{n \rightarrow \infty} A_n)^c = \limsup_{n \rightarrow \infty} A_n^c$$

$$(3) \liminf_{n \rightarrow \infty} A_n \subseteq \limsup_{n \rightarrow \infty} A_n$$

Proof:

Since $\limsup_{n \rightarrow \infty} A_n = \bigcap_{n=1}^{\infty} \bigcup_{k=n}^{\infty} A_k$

$$(\limsup_{n \rightarrow \infty} A_n)^c = \left(\bigcap_{n=1}^{\infty} \left(\bigcup_{k=n}^{\infty} A_k \right) \right)^c = \bigcup_{n=1}^{\infty} \left(\bigcap_{k=n}^{\infty} A_k^c \right) = \liminf_{n \rightarrow \infty} A_n^c .$$

(2) Since $\liminf_{n \rightarrow \infty} A_n = \bigcup_{n=1}^{\infty} \bigcap_{k=n}^{\infty} A_k$

$$(\liminf_{n \rightarrow \infty} A_n)^c = \left(\bigcup_{n=1}^{\infty} \left(\bigcap_{k=n}^{\infty} A_k \right) \right)^c = \bigcap_{n=1}^{\infty} \left(\bigcup_{k=n}^{\infty} A_k^c \right) = \limsup_{n \rightarrow \infty} A_n^c .$$

(3) Since $\bigcap_{k=n}^{\infty} A_k \subseteq \bigcup_{k=n}^{\infty} A_k \Rightarrow \bigcup_{n=1}^{\infty} \bigcap_{k=n}^{\infty} A_k \subseteq \bigcap_{n=1}^{\infty} \bigcup_{k=n}^{\infty} A_k \Rightarrow \liminf_{n \rightarrow \infty} A_n \subseteq \limsup_{n \rightarrow \infty} A_n .$

Definition (2.1.3)[1]

A sequence $\{A_n\}$ of subsets of a set Ω is said to converge if $\limsup_{n \rightarrow \infty} A_n = \liminf_{n \rightarrow \infty} A_n = A$ (say)

And A is said to be the limit of $\{A_n\}$, we write $A = \lim_{n \rightarrow \infty} A_n$ or $A_n \rightarrow A$

Definition (2.1.4)[1]

A sequence $\{A_n\}$ of subsets of a set Ω is said to be increasing if $A_n \subset A_{n+1}$ for $n = 1, 2, \dots$. It is said to be decreasing if $A_{n+1} \subset A_n$ for $n = 1, 2, \dots$. A monotone sequence of sets is one which either increasing or decreasing.

Theorem(2.1.5)[1]

Any monotone sequence is converge. But the converse is not true.

Proof:

Let $\{A_n\}$ be a monotone sequence of subsets of a set Ω .

If $\{A_n\}$ is an increasing $\Rightarrow A_n \subset A_{n+1}$ for $n = 1, 2, \dots$



$$\Rightarrow \bigcup_{k=n}^{\infty} A_k = \bigcup_{n=1}^{\infty} A_n \quad \text{and} \quad \bigcap_{k=n}^{\infty} A_k = A_n \quad \text{for } n = 1, 2, \dots$$

$$\limsup_{n \rightarrow \infty} A_n = \bigcap_{n=1}^{\infty} \left(\bigcup_{k=n}^{\infty} A_k \right) = \bigcap_{n=1}^{\infty} \left(\bigcup_{n=1}^{\infty} A_n \right) = \bigcup_{n=1}^{\infty} A_n \quad \text{and} \quad \liminf_{n \rightarrow \infty} A_n = \bigcup_{n=1}^{\infty} \left(\bigcap_{k=n}^{\infty} A_k \right) = \bigcup_{n=1}^{\infty} A_n \quad \text{Thus,}$$

$$\limsup_{n \rightarrow \infty} A_n = \liminf_{n \rightarrow \infty} A_n = \bigcup_{n=1}^{\infty} A_n$$

Therefore the sequence $\{A_n\}$ is converge, while, if $\{A_n\}$ is decreasing

$$\Rightarrow A_{n+1} \subset A_n \quad \text{for } n = 1, 2, \dots \Rightarrow \bigcup_{k=n}^{\infty} A_k = A_n \quad \text{and} \quad \bigcup_{k=n}^{\infty} A_k = \bigcup_{n=1}^{\infty} A_n \quad \text{for } n = 1, 2, \dots$$

$$\limsup_{n \rightarrow \infty} A_n = \bigcap_{n=1}^{\infty} \left(\bigcup_{k=n}^{\infty} A_k \right) = \bigcap_{n=1}^{\infty} \left(\bigcup_{n=1}^{\infty} A_n \right) = \bigcap_{n=1}^{\infty} A_n \quad \text{and} \quad \liminf_{n \rightarrow \infty} A_n = \bigcup_{n=1}^{\infty} \left(\bigcap_{k=n}^{\infty} A_k \right) = \bigcap_{n=1}^{\infty} A_n$$

Thus $\limsup_{n \rightarrow \infty} A_n = \liminf_{n \rightarrow \infty} A_n = \bigcap_{n=1}^{\infty} A_n$. Therefore the sequence $\{A_n\}$ is converge.

Example (2.1.6)[1]

Let $\Omega = R$ and $A_n = \begin{cases} (0, 1 - \frac{1}{n}] & , n \text{ odd} \\ [\frac{1}{n}, 1) & , n \text{ even} \end{cases}$, then the $\{A_n\}$ is converge but not monotone.

Remark (2.1.7)[1]

If $\{A_n\}$ is an increasing sequence of subsets of a set Ω and $\bigcup_{n=1}^{\infty} A_n = A$, we say that the A_n from an increasing sequence of a set with limit A , or that the A_n increase to A , we write $A_n \uparrow A$. Also If $\{A_n\}$ is a decreasing sequence of subsets of a set Ω and $\bigcap_{n=1}^{\infty} A_n = A$, we say that the A_n from a decreasing sequence of a set with limit A , or that the A_n decrease to A , we write $A_n \downarrow A$.

Theorem (2.1.8)[1]

Let $\{A_n\}$ be a sequence of subsets of a set Ω and let $A \subset \Omega$

(1) If $A_n \uparrow A$, then $A_n^c \downarrow A^c$

(2) If $A_n \downarrow A$, then $A_n^c \uparrow A^c$

**Proof :**

(1) Since $A_n \uparrow A \Rightarrow A_n \subset A_{n+1}$ for $n = 1, 2, \dots$ and $\bigcup_{n=1}^{\infty} A_n = A$

$\Rightarrow A_{n+1}^c \subset A_n^c$ for $n = 1, 2, \dots$ and $\bigcap_{n=1}^{\infty} A_n^c = (\bigcup_{n=1}^{\infty} A_n)^c = A^c \Rightarrow A_n^c \downarrow A^c$.

(2) Since $A_n \downarrow A \Rightarrow A_{n+1} \subset A_n$ for $n = 1, 2, \dots$ and $\bigcap_{n=1}^{\infty} A_n = A$

$\Rightarrow A_n^c \subset A_{n+1}^c$ for $n = 1, 2, \dots$ and $\bigcup_{n=1}^{\infty} A_n^c = (\bigcap_{n=1}^{\infty} A_n)^c = A^c \Rightarrow A_n^c \uparrow A^c$.

Theorem (2.1.9) (Null-Additivity Theorem)[7]

Let (Ω, F, μ) be an uncertainty space, and let $\{A_n\}$ be a sequence of events in F with $\mu(A_n) \rightarrow 0$ as $n \rightarrow \infty$. Then for any $A \in F$, we have $\lim_{n \rightarrow \infty} \mu(A \cup A_n) = \lim_{n \rightarrow \infty} \mu(A - A_n) = \mu(A)$

Proof :

Since $A \subset A \cup A_n \Rightarrow \mu(A) \leq \mu(A \cup A_n)$ for each n , and since $\mu(A \cup A_n) \leq \mu(A) + \mu(A_n)$ for each n . It follows that

$$\mu(A) \leq \mu(A \cup A_n) \leq \mu(A) + \mu(A_n)$$

For each n . Thus we get $\mu(A \cup A_n) \rightarrow \mu(A)$ by using $\mu(A_n) \rightarrow 0$.

Since $(A - A_n) \subset A \subset ((A - A_n) \cup A_n)$, we have

$$\mu(A - A_n) \leq \mu(A) \leq \mu(A - A_n) + \mu(A_n).$$

Hence $\mu(A - A_n) \rightarrow \mu(A)$ by using $\mu(A_n) \rightarrow 0$.

Remark (2.1.10)[7]

It follows from the above theorem that the uncertain measure is null-additive, i.e., $\mu(A_1 \cup A_2) = \mu(A_1) + \mu(A_2)$ if either $\mu(A_1) = 0$ or $\mu(A_2) = 0$. In other words, the uncertain measure remains unchanged if the event is enlarged or reduced by an event with uncertain measure zero.

Theorem (2.1.11) (Asymptotic Theorem)[7]

Let (Ω, F, μ) be an uncertainty space. For any sequence $\{A_n\}$ of events in F , we have



$$\lim_{n \rightarrow \infty} \mu(A_n) > 0 \text{ if } A_n \uparrow \Omega \text{ and } \lim_{n \rightarrow \infty} \mu(A_n) < 1 \text{ if } A_n \downarrow \phi$$

Proof :

Assume $A_n \uparrow \Omega$. Since $\Omega = \bigcup_{n=1}^{\infty} A_n$, it follows from the countable subadditivity axiom that

$$1 = \mu(\Omega) \leq \sum_{n=1}^{\infty} \mu(A_n).$$

Since $\mu(A_n)$ is increasing with respect to n , we have $\lim_{n \rightarrow \infty} \mu(A_n) > 0$. If $A_n \downarrow \phi$, then $A_n^c \uparrow \Omega$. It follows from the first inequality and self-duality axiom that $\lim_{n \rightarrow \infty} \mu(A_n) = 1 - \lim_{n \rightarrow \infty} \mu(A_n^c) < 1$

which complete the proof.

Example (2.1.12)[7]

Assume Ω is the set of real numbers. Let α be a number with $0 < \alpha < 0.5$. Define a set function as follows,

$$\mu(A) = \begin{cases} 0, & A = \phi \\ \alpha, & A \text{ is upper bounded} \\ 0.5, & A \text{ and } A^c \text{ are upper unbounded} \\ 1 - \alpha, & A^c \text{ is upper bounded} \\ 1, & A = \Omega \end{cases}$$

It is easy to verify that μ is an uncertain measure. Write $A_n = (-\infty, n]$ for $n = 1, 2, \dots$.

Then $A_n \uparrow \Omega$ and $\lim_{n \rightarrow \infty} \mu(A_n) = \alpha$. Furthermore, we have $A_n^c \downarrow \phi$ and $\lim_{n \rightarrow \infty} \mu(A_n^c) = 1 - \alpha$.

Theorem (2.1.13)[2]

Let (Ω, F, μ) be an uncertainty space. For any sequence $\{A_n\}$ of events in F , we have

(1) If $A_n \uparrow A$, then $\lim_{n \rightarrow \infty} \mu(A_n) \leq \mu(A)$.

(2) If $A_n \downarrow A$, then $\lim_{n \rightarrow \infty} \mu(A_n) \geq \mu(A)$.

Proof :

(1) Since $A_n \uparrow A \Rightarrow A_n \subseteq A_{n+1}$ for $n = 1, 2, \dots$, and $\bigcup_{n=1}^{\infty} A_n = A \Rightarrow A_n \subset A$ for $n = 1, 2, \dots \Rightarrow \mu(A_n) \leq \mu(A)$ for $n = 1, 2, \dots$



so that $\lim_{n \rightarrow \infty} \mu(A_n) \leq \mu(A)$.

(2) Since $A_n \downarrow A \Rightarrow A_n^c \uparrow A^c \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n^c) \leq \mu(A^c) \Rightarrow \lim_{n \rightarrow \infty} (1 - \mu(A_n)) \leq 1 - \mu(A)$

$\Rightarrow \lim_{n \rightarrow \infty} \mu(A_n) \geq \mu(A)$.

§(2.2) Continuous Uncertain measure and it's properties

Definition (2.2.1)[3]

Let (Ω, F, μ) be an uncertainty space. We say that μ is

(1) continuous from above at $A \in F$, if $\lim_{n \rightarrow \infty} \mu(A_n) = \mu(A)$ whenever $\{A_n\}$ of events in F with $A_n \downarrow A$.

(2) continuous from below at $A \in F$, if $\lim_{n \rightarrow \infty} \mu(A_n) = \mu(A)$ whenever $\{A_n\}$ of events in F with $A_n \uparrow A$.

μ is called continuous from above if it is continuous from above at A for all $A \in F$, also μ is called continuous from below at A for all $A \in F$.

Theorem (2.2.2)[2]

Let (Ω, F, μ) be an uncertainty space. Then the following statements are equivalent:

(1) μ is continuous from above at $A \in F$. (2) μ is continuous from below at $A \in F$.

Proof:

(1) \Rightarrow (2)

Let $\{A_n\}$ be a sequence of events in F with $A_n \uparrow A$, we have $A_n^c - A^c \downarrow \phi \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n^c - A^c) = \mu(\phi) = 0$.

Since

$$\begin{aligned} \mu(A_n^c - A^c) &\geq \mu(A_n^c) - \mu(A^c) \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n^c - A^c) \geq \lim_{n \rightarrow \infty} \mu(A_n^c) - \mu(A^c) \\ \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n^c) - \mu(A^c) &\leq 0 \Rightarrow 1 - \lim_{n \rightarrow \infty} \mu(A_n) - 1 + \mu(A) \leq 0 \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n) \geq \mu(A) \end{aligned}$$

Since

$\lim_{n \rightarrow \infty} \mu(A_n) \leq \mu(A) \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n) = \mu(A)$. That is μ is continuous from below at $A \in F$.

(2) \Rightarrow (1)



Let $\{A_n\}$ be a sequence of events in F with $A_n \downarrow A$, we have $A_n^c \cup A \uparrow \Omega \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n^c \cup A) = \mu(\Omega) = 1$.

Since $\mu(A_n^c \cup A) \leq \mu(A_n^c) + \mu(A) \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n^c \cup A) \leq \lim_{n \rightarrow \infty} \mu(A_n^c) + \mu(A)$

$1 \leq \lim_{n \rightarrow \infty} \mu(A_n^c) + \mu(A) \Rightarrow 1 \leq 1 - \lim_{n \rightarrow \infty} \mu(A_n) + \mu(A) \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n) \leq \mu(A)$

Since $\lim_{n \rightarrow \infty} \mu(A_n) \geq \mu(A) \Rightarrow \lim_{n \rightarrow \infty} \mu(A_n) = \mu(A)$. That is μ is continuous from above at $A \in F$.

Theorem (2.2.3)[3]

Let (Ω, F, μ) be an uncertainty space. For any sequence $\{A_n\}$ of events in F .

(1) If μ is continuous from above, then $\limsup_{n \rightarrow \infty} \mu(A_n) \leq \mu(\limsup_{n \rightarrow \infty} A_n)$.

(2) If μ is continuous from below, then $\liminf_{n \rightarrow \infty} \mu(A_n) \geq \mu(\liminf_{n \rightarrow \infty} A_n)$.

Proof:

Since $\bigcup_{n=k}^{\infty} A_n$ is an increasing sequence and $\bigcup_{n=k}^{\infty} A_n \supset A_k$, we get

$$\mu(\limsup_{n \rightarrow \infty} A_n) = \mu(\lim_{n \rightarrow \infty} \bigcup_{n=k}^{\infty} A_n) = \lim_{n \rightarrow \infty} \mu(\bigcup_{n=k}^{\infty} A_n) \geq \limsup_{n \rightarrow \infty} \mu(A_n)$$

(2) Similarly $\bigcap_{n=k}^{\infty} A_n$ is decreasing and $\bigcap_{n=k}^{\infty} A_n \subset A_n$. Thus

$$\mu(\liminf_{n \rightarrow \infty} A_n) = \mu(\lim_{n \rightarrow \infty} \bigcap_{n=k}^{\infty} A_n) = \lim_{n \rightarrow \infty} \mu(\bigcap_{n=k}^{\infty} A_n) \leq \liminf_{n \rightarrow \infty} \mu(A_n)$$

Definition (2.2.4)[3,7]

Let (Ω, F, μ) be an uncertainty space. μ is called continuous if for any sequence $\{A_n\}$ of events in F with $\lim_{n \rightarrow \infty} A_n$ exists, we have $\lim_{n \rightarrow \infty} \mu(A_n) = \mu(\lim_{n \rightarrow \infty} A_n)$. The triple (Ω, F, μ) is called a continuous uncertainty space if μ is continuous.

Theorem (2.2.5)[2]

Let (Ω, F, μ) be an uncertainty space. Then μ is continuous if and only if it is continuous from above (or continuous from below).

Proof: Suppose μ is continuous from below, then μ is continuous from above theorem (2.2.3), we have



$$\mu(\liminf_{n \rightarrow \infty} A_n) \leq \liminf_{n \rightarrow \infty} \mu(A_n) \leq \limsup_{n \rightarrow \infty} \mu(A_n) \leq \mu(\limsup_{n \rightarrow \infty} A_n)$$

Since $\lim_{n \rightarrow \infty} A_n$ exists, we get the equation $\lim_{n \rightarrow \infty} \mu(A_n) = \mu(\lim_{n \rightarrow \infty} A_n)$.

Example (2.2.6)[11]

Let $f, g : R \rightarrow R$ be two nonnegative functions such that $\int_R f(x)dx = 1$, $\inf\{g(x) : x \in R\} = 0$ and $g(x) \leq 1$ for any $x \in R$. For any Borel set A of real numbers, define a set function μ as follows:

$$\mu(A) = \frac{1}{2} \int_A f(x)dx + \frac{1}{4} (\inf\{g(x) : x \in A^c\} + 1 - \inf\{g(x) : x \in A\})$$

Then μ is a continuous uncertain measure.

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A STUDY ON CONSUMER'S PREFERENCE TOWARDS FAST FOOD SERVICE WITH SPECIAL REFERENCE TO KFC IN COIMBATORE CITY

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ABSTRACT

The powerful fragmentation of consumers nowadays, represents a tendency that should be taken into consideration, in order to identify and improve the quality dimensions of the products which are important for each category of consumers. Young people are not concerned with food preparation and that is why, they prefer to go out for their meals. They usually go to fast-food restaurants, especially when there is nobody to cook for them (while they study away from home) and also when they want to socialize. Although they have the necessary knowledge about the nutritional value of food and its effects on their body, they don't act accordingly. Fast – food restaurants are famous because they serve the food very fast, they are cheap and they easily replace homemade food. Although people, who are usually very busy working, find fast-foods advantageous, we should all be aware of the fact that fast-food products are high in calories, fats, sugar and salt. Even so, young people admit that it is very difficult for them to change their food habits - especially because they don't have time and discipline to do it. The accessibility of the location is another motive for young people to prefer fast-foods. Unlike the restaurants, which are located in less accessible areas for the young people, fast-foods are located in their way towards their home or downtown, and they are more numerous. Easiness of finding a fast-food could be associated with the lack of time or the hurry. Choosing one particular fast-food depends on its flexibility and capacity to adapt to young people's needs.

KEY WORDS-Consumer Satisfaction, Favours towards KFC, Preference of Fast Food

INTRODUCTION

Multinational fast food outlets initially faced protests and non-acceptance from Indian consumers. This was due to primary perception that these fast food players serve only chicken and do not serve vegetarian meals. In addition, fast food is perceived expensive besides being out-of-way meals in Indian culture. Today, fast food industry is getting adapted to Indian food requirements and is growing in India. It is gaining acceptance primarily from Indian youth and younger generations and is becoming part of life. Keeping in view the Indian habits and changing preferences towards food consumption, this study has its focus to understand the factors affecting the perception of Indian youth, in the age group of 20-30 years, towards consumption of fast food outlets.

STATEMENT OF THE PROBLEM

In the past few years a number of MNC fast food outlets have opened up in India. A huge number

of them are widely spread over the metro cities like Chennai, Mumbai, Delhi, Kolkata, Hyderabad, Pune etc. Service quality is the key factor contributing towards preference of international fast food restaurants. A study on the customer's perception towards KFC fast food outlets in Coimbatore city helps for further development and growth of the company to a greater extent.

OBJECTIVES OF THE STUDY

- To identify existing opportunities for KFC fast food restaurants at Coimbatore.
- The overall objectives of the study is to analyse the fast food consumption and lifestyle of consumer *segments* for developing the marketing strategies in fast food
- To know the attitude of the customers towards fast food consumption and their expectations from the outlets.

**RESEARCH METHODOLOGY****DATA COLLECTION**

Both primary and secondary data were used.

PRIMARY DATA

Primary data is the data that is collected for the first time by the researcher. The primary data are collected with specific set of objective to assess the current status of any variable studied. The primary data were collected using structure questionnaire in Google form.

SECONDARY DATA

Sources of secondary data include journals. All this helped in authenticating the kind of information obtained from our primary sources and thus helped to get a very objective view of the study.

RESEARCH DESIGN❖ **AREA OF THE STUDY**

The area of the study refers to Coimbatore city.

❖ **SAMPLE METHOD**

Sampling is the selection of some part of an aggregate or totally on the basis of which it is made. Convenient sampling is used for this research.

❖ **REASON FOR AREA OF THE STUDY**

The city of "COIMBATORE" is called as "MANCHESTER OF SOUTH INDIA" with a salubrious climate. The city is endowed with a large number of educational institutions, textile mills, foundries and agro based industries. So it is easy to reach Coimbatore. It is the third largest city in Tamil Nadu.

❖ **SOURCE OF DATA**

- The study used only primary data. The data was collected from 126 respondents by using questionnaire method.
- The questionnaire had been prepared in such a way that the respondents were able to answer in useful manner.

❖ **SAMPLING DESIGN**

For the purpose of the study, 126 respondents were selected.

Convenience sampling method was administered in this study.

❖ **TOOLS FOR ANALYSIS**

The following statistical tools were used in the study.

- a) Simple percentage analysis
- b) Ranking analysis
- c) Likert analysis

LIMITATIONS OF THE STUDY

The following are the limitations of the study:

- The respondent of this study belongs to Coimbatore city.
- The limitation of convenience sampling method is applied to this study.
- The time period of the study was limited.

REVIEW OF LITERATURE

D.P. SUDHAGAR (2017)¹, the trend of the eating out has become a fashion for all the generations depending on various factors. So it is very important for the fast food outlet managers to see and eater the needs and expectations of the customers dining in the restaurant. The present study will aim to see the factors associated with fast food outlets. Customer's holds strong importance towards food taste, healthy food, nutritional value of the food, hygienic food service, reasonable pricing, food safety, and other food services compared to menu varieties, prompt food service, food presentation attractiveness and innovation in fast food. The study successfully accomplishes the overall objective of the research by taking out the gaps in the food quality attributes of the fast food outlets in Chennai city, South India.

ASHAKIRAN AND DEEPTHI R 2012, to system of consumption of foods which has several adverse effects of health. Lifestyle changes has compelled us so much that one has so little time to really think what we are eating on large scale and its impact on health needs emphasis and health education which are greatly contribute to its limited consumption and switching over to healthy eating habits for the better living. It is not impossible to win war which junk foods against indicates a clear cut difference in their mean score of their attributes and also dimensions identified with factor analysis

ANITHA GOYAL AND N.P.SINGH 2007, this paper seeks to estimate importance of various factors affecting the choice of fast food outlets by Indian Young consumers. Design/Methodology/approach-the study applies multivariate statistical tools to estimate importance of various factors affecting the choice of fast food outlets by Indian young customers. Though the rating of fast food outlets attributes under study based on mean score is very high but still consumer visit fast food outlets for fun, change or entertaining their friends but certainly not as a substitute of homemade food. Comparison of McDonald's and Nirula's indicates a clear cut difference in their mean score of their attributes and also dimensions identified with factor analysis.



**DATA ANALYSIS AND INTERPRETATION
SIMPLE PERCENTAGE ANALYSIS**

TABLE SHOWING FLAVORS PREFERRED BY THE RESPONDENTS

S.NO	FACTORS	NO OF RESPONDENTS	PERCENTAGE %
1	Spicy Flavor	61	48.4
2	Crispy	33	26.2
3	Grilled	22	17.5
4	Others	10	7.9
	TOTAL	126	100

(Source: Primary Data)

INTERPRETATION

The table 4.1.12 shows that out of 126 respondents, 48.4% of the respondents prefer spicy flavor, 26.2% of the respondents prefer crispy, 17.5% of the respondents prefer grilled and 7.9% of the respondents prefer other flavors.

INFERENCE

Majority 48.4% of the respondents prefer spicy flavor the most.

**TABLE SHOWING THE THINKING OF CONSUMER ABOUT THE KFC
FAST FOOD**

S.NO	FACTORS	NO OF RESPONDENTS	PERCENTAGE %
1	Strongly disagree	14	11.1
2	Disagree	13	10.3
3	Neutral	64	50.8
4	Strongly agree	7	5.6
5	Agree	28	22.2
	TOTAL	126	100

(Source: Primary Data)

INTERPRETATION

The table 4.1.16 shows that out of 126 respondents, 11.1% of the respondents strongly disagree with KFC fast food, 10.3% of the respondents disagree with KFC fast food, 50.8% of the respondents neutral with KFC fast food, 5.6% of

the respondents Strongly agree with KFC fast food, 22.2% of the respondents agree with KFC fast foods.

INFERENCE

Majority 50.8% of the respondents are Neutral about the KFC fast foods.

LIKERT SCALE ANALYSIS

**TABLE SHOWS THE SATISFACTION LEVEL OF CONSUMER
(TASTE)**

S.NO	FACTORS	NO OF RESPONDENTS (f)	LIKERT SCALE VALUE (x)	TOTAL SCALE (fx)
1	Satisfied	70	3	210
2	Neutral	46	2	92
3	Dissatisfied	10	1	10
	TOTAL	126	6	312

(Source: Primary Data)

$$\begin{aligned} \text{Likert scale} &= \sum fx / \text{Number of respondents} \\ &= 312/126 \\ &= 2.5 \end{aligned}$$

**INTERPRETATION**

From the above table 4.2.3, it shows the level of satisfaction of the respondents regarding fast food in KFC.

Likert scale value 2.5 which are greater than the mid value (2), so the consumer is satisfied with the taste.

RANK ANALYSIS

**TABLE SHOWS MOST INFLUENCE DECISION TO EAT KFC
(RANKING ANALYSIS)**

S.NO	FACTORS	RANK I	RANK II	RANK III	TOTAL SCORE	RANK
1	Brand	70(3)	50(2)	6(1)	316	1
2	Quality	40(3)	74(2)	12(1)	280	5
3	Taste	70(3)	46(2)	10(1)	312	2
4	More New Products	34(3)	75(2)	17(1)	269	6
5	Good Environment	50(3)	67(2)	9(1)	293	4
6	Good Service	50(3)	68(2)	8(1)	294	3
7	Reasonable Price	32(3)	64(2)	30(1)	254	7

(Source: Primary Data)

INTERPRETATION

The table 4.3.1 shows the factors influencing to take decision for KFC products. that the out of 126 respondents, brand is in the rank 1, quality is in the rank 5, taste is in the rank 2, more new products is in the rank 6, good environment is in the rank 4, good service is in the rank 3, reasonable price in the rank 7.

INFERENCE

It resulted that brand is in the rank 1 and it influences the respondents to take decision to eat at KFC.

FINDINGS FOR SIMPLE PERCENTAGE METHOD

- ✓ Majority 54% of the respondents are below 20.
- ✓ Majority 63.5% of the respondents are female.
- ✓ Majority 94.4% of the respondents are unmarried.
- ✓ Majority 75% of the respondents are students.
- ✓ Majority 39% of the respondent's family income are between 20000 - 40000.
- ✓ Majority 58% of the respondent's family size is 4.
- ✓ Majority 79% of the respondents family nature is nuclear.
- ✓ Majority 48% of the respondents area is urban.
- ✓ Majority 79% of the respondents preferred non-vegetarian in KFC.

- ✓ Majority 57% of the respondents are expecting to pay 200 for fast food in a week.
- ✓ Majority 48% of the respondents are preferred spicy flavour.
- ✓ Majority 48% of the respondents are preferred French fries in KFC.
- ✓ Majority 70% of the respondents are visiting KFC occasional.
- ✓ Majority 72% of the respondents are visiting KFC with friends.
- ✓ Majority 51% of the respondents are satisfied with KFC fast foods.
- ✓ Majority 40% of the respondents are well satisfied with KFC are environment.
- ✓ Majority 58% of the respondents are eating fast food in KFC to meet their friends.

FINDINGS FOR RANKING ANALYSIS

- ✓ It resulted that brand is in the rank 1 and it influences the respondents to take decision to eat at KFC.

FINDINGS FOR LIKERT SCALE ANALYSIS

- ✓ Likert scale value is 2.5 which is greater than the mid value of (2), so the customer is satisfied with the brand.
- ✓ Likert scale value is 2.2 which is greater than the mid value (2), so the customer is satisfied with the quality.
- ✓ Likert scale value 2.5 which are greater than the mid value (2), so the consumer is satisfied with the taste.



- ✓ Likert scale value 2.1 which are greater than the mid value (2), so the customer is satisfied with the more new products.
- ✓ Likert scale value 2.3, which are greater than the mid value (2), so the customer is satisfied with the good environment in KFC.
- ✓ Likert scale value 2.3, which are greater than the mid value (2), so the customer is satisfied with the good service.
- ✓ Likert scale value 2.01, which are greater than the mid value (2), so the customer is satisfied with the price.

SUGGESTIONS

From the study we can find out that the consumer preference towards fast food on society is quite high, fast food will be great difficulty to maintain the health, some of the suggestions based on the study are as follows,

The conclusion is that when compared to other outlets the customers are satisfied with the varieties, cleanliness and the employee behaviour of the outlet which lead to increase in the sales of the restaurant.

Any customer survey is a means of getting valuable inputs from the customer and interpreting then to provide valuable feedback to the users of the information. This study is done with that objective only. From the study it can be concluded that the overall level of satisfaction of the respondents with regard to the service rendered at the fast food outlets is satisfactory. The study has brought out the customer preference of fast food and fast food outlets and also the factors that need to be improved.

CONCLUSION

The study reveals that young people mentioned as being of major importance when choose a fast food KFC restaurants are the food and beverages taste, freshness and consistency, the physical environment- including the hygiene cleanliness, spatial layout and functionality, atmosphere and ambient conditions and qualities, taste, convenience and alternate to home food where found to be major reasons for consuming fast food by the young consumers. Young consumers are spending considerable amount of their income for eating outside due to convenient life style as it saves their time. Young consumers preferred major fast food restaurant as KFC types such as sandwiches, pizzas and burgers with spicy flavors.

A large amount of additional time is spend thinking about products and services, talking to friends about them, and seeing or hearing advertisements about them. In addition, the good people eat and the manner in which they use them significantly influence how they live their daily lives. These general concerns alone are enough to justify

our study of consumer preference. However, many seek to understand the behavior of consumers for what are thought to be more immediate and tangible reasons.

The average fast food consumers prefer KFC restaurant occasionally for evening time. Fast food consumers eat in for the change and not because of their nutritional superiority over homemade meals.

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PERCEPTIONS OF STAKEHOLDERS ON QUALITY OF HIGHER EDUCATION IN MIZORAM

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Article DOI: <https://doi.org/10.36713/epra5891>

ABSTRACT

The topic of “quality” has received much concern in the context of higher education all over the world. Developing countries like India are also striving forward to improve their higher education system by taking various initiatives. Experts in the respected field have been envisaged that assessment of quality must incorporated the perceptions of its stakeholders. However, with reference to India, the quality of higher education has been assessed through external bodies and the quality of higher education has been hardly studied through its internal bodies particularly the primary stakeholders views were not actually taken into account. The present study is about studying the perceptions of the primary stakeholders on the key components of the higher education. The study will aid the authorities in reflecting and planning the higher education system in order to improve and maintain the quality.

KEYWORDS: Higher education, Quality, Perceptions of stakeholders, Mizoram.

THEORETICAL BACKGROUND

Quality Higher Education has proved to be the major tool for socio-economic development particularly for developing nations. Quality higher education enables empowerment by overcoming the limitations of physical resources. Thus, quality has been a major concern in higher education all over the world. India has been taking several steps and initiatives to improve its higher education. There has been improvement and development in terms of enrollment, establishment of institutions and gross enrollment ratio. For the maintenance and promotion of quality in the Indian higher education, the National Accreditation and Assessment Council (NAAC) as an autonomous body was established in 1994. The main objectives of NAAC are to grade institutions of higher education and their programmes; stimulate the academic environment and quality of teaching and research in these institutions; help institutions realize their academic objectives; promote necessary changes, innovations and reforms in all aspects of the

institutions working for the above purpose; and encourage innovations, self-evaluation and accountability in higher education. (NAAC, 2006). It is envisaged by experts that every institution should have assessment and accreditation by NAAC, for better quality and is also evident from many studies that Assessment and Accreditation would enable institutions to upgrade and achieve higher standard.

Mizoram is one of the mountainous states of India with Aizawl as its capital. It has a total area of approximately 21,081 sq. km. It shares international boundary with Myanmar in the south and east, and Bangladesh in the west, it is also bounded in the west by Tripura and in the north by the states of Assam and Manipur. Thus, Mizoram occupies an area of great strategic importance in the north eastern corner of India. According to the Census 2011, the total population of Mizoram is 10,91,014 and is the second highest among the states in terms of literacy rate with 91.3% only after Kerala.



Mizoram had its first college in 1958 at its capital, Aizawl and the first and the only Central University called Mizoram University was opened in 2001. At present, the total number of all higher education institutions in the state is 50 out of which there are 3 Universities, 32 colleges and 15 stand alone institutions. There is only 1 constituent college of Mizoram University, i.e., Pachhunga University College. There are 27 Colleges under Section 2(f) and 12B of the UGC Act 1956 and 2 Colleges under Section 2(f). There are 24 colleges and 1 University which were accredited so far by NAAC as on March, 2020. Out of 21 government colleges offering general education, only 19 of them have been so far assessed and accredited. Out of the 19 colleges, 2nd Cycle assessment of 11 colleges and 3rd cycle assessment of 1 college has also been completed and accredited. In assessment of both the cycles, the overall grades of the colleges fell within the ranges of C, C+, C++ to B, B++. As of today, there are only 17 colleges whose accreditation period is valid. Gross Enrolment Ratio in Mizoram is 25.7 of which 26.5 male and 24.8 female in 2018-2019. Number of student enrolment in general degree colleges of undergraduate level is 19863 during the period 2018-19. The pupil teacher ratio in higher education in Mizoram is 18 and the Gender Parity Index (GPI) is 0.94.

SIGNIFICANCE OF THE STUDY

The term quality has received increasing attention in the last twenty years in higher education. Quality assessment as a mechanism of quality improvement in higher education has spread all over the world over a period of time. The quality is an industrial term commonly used to refer the degree of excellence and standard of products or goods and commodities set by the producers and manufacturers to satisfy the customer needs and thus, to stay in business. The traditional concept of quality is associated with the idea of providing a product or service that is distinctive and special, and which confers status on the owner or user. (Pfeiffer and Coote, 1991). The meaning of quality has been explained in relation to its dictionary meaning by various renowned authors, who are pioneers in establishing quality systems. According to Oxford Dictionary, Quality is degree, especially high degree of goodness or worth, while Webster's Dictionary defines it as Grade of Excellence. Bureau of Indian Standards, 1988 defines quality as "the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs."

The quality of higher education is a result of collective effort of all stakeholders in higher education, which includes the state, the society, the employer, parents, the management, teachers and students. Enhancing quality is a holistic process.

Isolated efforts in improving the quality of a few selected components of the education system such as the infrastructure, teacher training, research funding or industry participation would be of limited value (Anandakrishnan, 2007). Therefore, all the stakeholders in higher education need to pay attention in strengthening the academic and the non-academic tools, and use them in holistic manner to enhance the quality of higher education. Tang and Hussin (2011) opined that in higher education, stakeholders' views are crucial and should be taken into consideration by the education providers in transcending cognitive skills as well as improving quality processes. Rajasingh (2009) also suggested that quality of higher education cannot be achieved without knowing the perceptions of stakeholders and their perceptual divide. Students and teachers are the largest group within any HEI, and therefore are the main stakeholders who have a much stronger voice than any other stakeholders. As such, the perceptions of students and teachers are one of the most important to know the conditions and standard of Higher Education systems. The interest and participation of students and teachers at all levels in both internal quality assurance and external quality assurance have to play a central role. It makes the process of quality assurance and quality enhancement for the institution more reliable and credible. To date in Mizoram, quality of higher education has been assessed through NAAC only and the perceptions of its stakeholders have never been reflected incorporated into the assessment process. Therefore, students' and teachers' perceptions on quality in higher education can help in effective monitoring of quality in higher education in the state and it is hoped that this study will aid the development of the system by bringing in suggestions to the policy makers which will enhance the quality of higher education institutions in Mizoram.

Hence, the study of perceptions of all stakeholders on quality of higher education is the need of the hour for effective quality assessment of higher education in the state as it is often said that quality of higher education cannot be achieved practically without knowing the perceptions of stakeholders.

OBJECTIVES OF THE STUDY

The overall aim of the present study is to examine the perceptions of stakeholders (students, teachers) in general degree colleges of Mizoram. The specific objectives of the study is to examine the perception of stakeholders on the quality of infrastructure and instructional facilities available in the general degree colleges of Mizoram.

**METHODOLOGY OF THE STUDY**

A descriptive survey method was used for the present study. The study is also quantitative in nature as structured questions along with fixed responses were used in questionnaire to elicit the perceptions of stakeholders on quality of higher education. The study covers all the general degree colleges of Mizoram affiliating to Mizoram University. In Mizoram, there are 21 affiliated government general degree colleges. So the population for the study includes all the students and teachers in these 21 colleges. Selection of sample for the present study was simple random sampling in nature. 10 teachers and 20 students from each degree college of Mizoram i.e. 210 teachers and 420 students were selected

randomly. The investigator developed questionnaire for the present study as there was no readymade questionnaire which was relevant for the present study. The questionnaire was developed for the students and teachers of government general degree colleges in Mizoram to examine the perceptions on quality of higher education in Mizoram. The developed questionnaire was validated using content validity and the reliability of the tool developed was found using test retest method. Keeping in view the objectives of the study and nature of data, descriptive techniques such as percentages was employed for the analysis and interpretation of data. Tabulation of data for percentages was done manually.

FINDINGS OF THE STUDY

Findings on perceptions of stakeholders on the overall Quality of infrastructure and instructional facilities in the general degree colleges of Mizoram.

Quality of infrastructure and instructional facilities in the colleges.	Very Good	Good	Poor	Very Poor
Perceptions of students	20.98	47.88	14.44	16.7
Perceptions of Teachers	10	52.75	28.43	8.82
Perceptions of Students and Teachers	15.5	50.31	21.43	12.76

The findings reveal that majority of the students were satisfied with the quality of the infrastructure and instructional facilities. However, more number of students perceived that computer facilities and internet connections in the college were very poor. The findings also reveal that more students perceived that the transport facilities in the general degree college of Mizoram were very poor and more number of the teachers perceived that recreational centres available in the degree general college of Mizoram were poor.

From the above table, it was shown that out of 630 respondents, majority i.e. 50.31% of the respondents perceived that the quality of infrastructure and infrastructural facilities were good, 15.5% of the respondents perceived that the quality of infrastructure and infrastructural facilities were very good, 21.43% of the respondents perceived as poor and 12.76% perceived as very poor. Thus, majority of the respondents perceived that the overall quality of infrastructure and instructional facilities available in the government general colleges of Mizoram were good.

Findings on perceptions of stakeholders on the overall quality of curriculum transacted in the general degree colleges of Mizoram.

Quality of curriculum transacted in the colleges.	Very Good	Good	Poor	Very Poor
Perceptions of students	33.02	43.18	17.03	6.77
Perceptions of Teachers	29.12	50.27	19.05	1.56
Perceptions of Students and Teachers	31.07	46.73	18.04	4.16

From the above table, it is revealed that a large number of respondents, i.e., 46.73% opined that the quality of curriculum transacted in the college was good, 31.07% perceived that it was very good, 18.04% perceived that quality of curriculum

transacted in the college was poor and only 4.16% of the respondents opined it as very poor. Thus, it can be said that more number of the respondents perceived that the quality of curriculum transacted in the government general degree college were good and only a very low percentage of the respondents perceived as very poor.

***Findings on perceptions of stakeholders on the overall quality of student support services in the degree colleges of Mizoram.***

Quality regarding student support service in the colleges.	Very Good	Good	Poor	Very Poor
Perceptions of students	30.1	54.12	10.64	5.14
Perceptions of Teachers	18.89	71.91	8.10	1.10
Perceptions of Students and Teachers	24.5	63.01	9.37	3.12

The Perceptions of the total respondents on quality regarding student support service in the college is shown in the above table and it implies that

majority of them, i.e., 63.01% perceived it as good, 24.5% of them perceived that it was very good, only 9.37% and 3.12% respondents perceived it as poor and very poor.

Findings on the perceptions of stakeholders on the overall quality regarding research and innovation in the degree colleges of Mizoram.

Quality regarding research and innovation in the colleges.	Very Good	Good	Poor	Very Poor
Perceptions of students	18.09	64.52	8.09	9.3
Perceptions of Teachers	17.8	47.5	30.4	4.3
Perceptions of Students and Teachers	17.94	56.01	19.24	6.8

The above table shows the Perceptions of the 630 respondents on quality regarding research and innovation in the college and it was observed that 17.94% of them opined that it was very good, 56.01% of them perceived it as good, 19.24% of the respondents perceived that the quality regarding

research and innovation in the college was poor and 6.8% of them perceived it as very poor. Therefore, the table implies that majority of the respondents perceived that the overall quality regarding research and innovation in the government general degree colleges were good.

Findings on the perceptions of stakeholders on the overall quality regarding examination and evaluation practices of the degree colleges of Mizoram.

Quality regarding examination and evaluation practices in the colleges.	Very Good	Good	Poor	Very Poor
Perceptions of students	52.22	33.73	10.16	3.89
Perceptions of Teachers	41.6	49.04	7.62	1.74
Perceptions of Students and Teachers	46.91	41.39	8.9	2.80

The Perceptions of the total respondents on quality regarding examination and evaluation practices in the college is presented in the above table and it is observed that 46.91% of the respondents perceived that it was very good, 41.39% of them perceived that it was good, 8.9% respondents perceived it as poor and 2.80% of the respondents opined that it was very poor. Though the findings reveal that the total respondents' perceptions on the

quality regarding examination and evaluation practices in the government general degree colleges were positive, yet the findings also reveal that there exist a difference in the perception of students and teachers on the same. While majority of the students perceived it as very good, majority of the teachers perceived as good.

***Findings on the perceptions of stakeholders on the overall quality regarding governance and leadership practices in the general degree colleges.***

Quality regarding governance and leadership practices in the colleges.	Very Good	Good	Poor	Very Poor
Perceptions of students	48.32	34.05	12.63	5
Perceptions of Teachers	37.19	53.29	6	3.52
Perceptions of Students and Teachers	42.76	43.67	9.31	4.26

From the above table, it is observed that 42.76% of the respondents opined that the quality regarding governance and leadership practices in the college was very good, 43.67% of them perceived that it was good, while 9.31% of them opined it as poor and only 4.26% of the respondents perceived the quality regarding governance and leadership practices in the college as very poor. Therefore, a small majority of the respondents perceived that the overall quality regarding governance and leadership practices in the government general degree colleges was good though there is a slight difference in the perceptions between students and teachers while a small majority of the students perceived it as very good, majority of the teachers perceived it as good.

CONCLUSIONS

The quality of human resources in a country depends largely on the quality of higher education institutions and the quality of higher education largely depends on all the stake holders. Though there has been increase in enrolment, institutions, and human resources, the expansion and quality of higher education in Mizoram is still low in comparison to other states in the countries which clearly depicted that the higher education in Mizoram is very far from the international standard. The grade of the colleges in Mizoram accredited by NAAC reveals that the higher education in Mizoram has a long way to go to become a centre of excellence as well as to meet the international standard. On the contrary, the present study shows that the main stakeholders of higher education viz. students and teachers perceived that the quality of higher education is good. These contrasting results may be the very concept of good quality education is not widely understood by the stakeholders or may be the awareness level of stakeholders on quality education is low. Therefore, these contrasting results necessitated that awareness concerning quality of education must be organized frequently.

The state government should do an in-depth study of the performance of colleges on various criteria of assessment and accreditation of NAAC, and work its plan and strategies for the improvement of quality of its colleges. The present study reveals that the quality of higher education in Mizoram is not very deprived to become a centre of excellence. There are several strength areas as far as the quality

of higher education in Mizoram is concerned which need to be maintained and promoted. However, many student support services such as career guidance cell, internet facilities, women's cell, human rights cell, grievance redressal cell, students counselling centre etc. must be established in every college for uplifting the standard of the higher education. The functioning of various committees constituted for academic and administrative purposes may be made more effective and efficient. Transparent, participative and accountable administrative practices need to be adopted. Internal Quality Assurance Cell (IQAC) must be made more practical to chalk out plan for quality initiatives and also monitor all the quality enhancement programmes conducted by the institution. Since government colleges are totally controlled by state government and Central University, many things may be delegated. So some kind of autonomy is required for these colleges like full or more autonomy to introduce new courses may be given to the colleges on criteria or norm based so that job-oriented courses like forestry, fisheries, farming, poultry, architecture, music, IT-oriented and Agro based courses which are relevant to the society for economic development of the state may be introduced. The state government may also introduce and monitor teacher's self-appraisal and student's feedback in all colleges more adequately. Therefore, it can be said that expansion of higher education particularly at collegiate level needs to be carried out in a planned manner, keeping in view the requirement of human resources and also to meet the needs of the society.

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THE STUDY ON BRAND AWARENESS AND CONSUMER BUYING BEHAVIOUR TOWARDS REVLON COSMETIC PRODUCT SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Brand awareness is a key indicator of a brand's competitive market performance. Given the importance of brand awareness in consumer purchasing decisions, marketers have developed a number of metrics designed to measure brand awareness and other measures of brand health. These metrics are collectively known as Awareness, Attitudes and Usage (AAU) metrics. Consumer behaviour is the study of individuals, groups, or organizations and all the activities associated with the purchase, use and disposal of goods and services, including the consumer's emotional, mental and behavioural responses that precede or follow these activities. Consumer behaviour emerged in the 1940s and 50s as a distinct sub-discipline in the marketing area. This analysis consist of interpretation, findings and suggestion to find the brand awareness and consumer buying behaviour towards Revlon cosmetic product.

KEYWORDS-*Brand awareness, consumer buying behaviour.*

INTRODUCTION

The word “cosmetics” is derived from the Greek word **Kosmetikos** which means “skilled at decorating”. cosmetics colloquially known as makeup or make- up are care substance used to enhance the appearance or odour of the human body. The U.S., the food and drug administration (FDA), which regulates cosmetics, defines cosmetics as intended to be applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body structure or function. producer and marketers tend to motivate consumers intention to buy the product through various promotional method and marketing strategies. This fact hassled increase to about the factors which determines buying behaviour. In recent years, with the advancement of women’s economic status and self-conscience, buying has increasing.

OBJECTIVES OF THE STUDY

- ❖ To identify the buying the buying behaviour of customers with regards to Revlon cosmetic products.
- ❖ To study the customer awareness level and preference towards Revlon cosmetic products.
- ❖ To identify the various factors that influence purchase decision.

STATEMENT OF THE PROBLEM

Awareness is everywhere in our economy from single consumer to business who buy in bulk. In the modern business market there is a trend that many companies transformed from traditional marketing method to modern marketing method. In this process to different elements have different effects that have influence the consumer buying behaviour. Due to this increase of competition towards Revlon product it has become extremely,



important to study the brand awareness and consumer buying behaviour of Revlon product.

SCOPE OF THE STUDY

- ❖ This study helps to find how far peoples are aware and attracted towards the brand name.
- ❖ The satisfaction level of the customers in different ways towards the branded products, can be studied through this project.
- ❖ To find the behaviour of the consumers while buying the cosmetic products.

RESEARCH METHODOLOGY

- **Data collection**
Both primary and secondary data were used.
- **Primary data**

Primary data is information collected through original or first-hand research. Usually, collection of primary data is costly & more time-consuming than secondary data but it serves a specific need and control biases.

- **Secondary data**

Secondary data refers to data that is collected by someone other than the user. Common sources of secondary data for social science include censuses, information collected by government departments, organizational records and data that was originally collected for other research purposes.

RESEARCH DESIGN

A research design is the set of methods and procedures used in collecting and analysing measures of the variables specified in the problem research.

SAMPLING TECHNIQUES

Sampling helps a lot in research. It is one of the most important factors which determines the accuracy of your research/survey result. If anything goes wrong with your sample then it will be directly reflected in the final result. There are lot of techniques which help us to gather sample depending upon the need and situation. This blog post tries to explain some of those techniques.

SAMPLE SIZE

The sample of 100 respondents was chosen for the study.

AREA OF STUDY

The study is conducted within the Coimbatore city.

SPECIAL TOOLS APPLIED

- Simple percentage analysis
- Likert scale analysis

- rank analysis

LITERATURE REVIEW

P. Guru Raghavendra, G. Deva Kumar, Santhosh Upadhyay (2009)¹, In today's global market brand awareness among the consumers plays a decisive role in the sales turnover of the company. The objectives of the study are to find the factors influencing brand awareness of chick and chink satin shampoo product. They used quality function deployment (QFD) methodology. They found many consumers expect the quality of the product.

Usman Yousaf, Rida Zulfiqar, Madiha Aslam, Mohsin Altaf (2012)², The study is to find how brand awareness is important to build brand loyalty. The Cronbach's Alpha statistic tool was used in order to check the reliability of the scale. Correlation analysis was used to study the relationship. Finally, they found the positive relationship and brand awareness has the highest impact on brand loyalty.

Phuah kit Teng, Assoc Prof. Dr. Wan jamaliah wan jusoh (2013)³, The objective for this study is to investigate the awareness and usage of halal labelled cosmetic in Malaysia. Descriptive analysis and chi-square analysis were performed. They found there are most respondents were aware about the Hala cosmetic product and mostly used by Muslim in Malaysia.

Ms. Shallu, Ms. Sangeeta Gupta (2013)⁴, The objective of this study is to identify the various factors that influence consumer buying behaviour and purchase decision. They used sampling method. They have taken 200 samples. They finally found promotional activity have positive effects on consumer purchasing behaviour or brand choice in cosmetic.

¹ **P. Guru Ragavendran, G. Devakumar , Santhosh Upadhyay (2009)** in the study titled " A study on Brand Awareness of Shampoo Products for CavinKare Pvt. Ltd "SASTech journal, Volume 8 : PP no:33-40.

² **Usman Yousaf , Rida Zulfiqar , Mohsin Altaf (2012)** in the study titled " studying brand loyalty in the cosmetics industry" scientific journals of logistics, Log Forum 8 (4).PP no:327-337

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³ **Phuah kit Teng , Assoc Prof. Dr . Wan jamaliah wan jusoh (2013)**, in the study title "Brand awareness and usage intention towards HALAL LABELLED COSMETICS and personal care products in Malaysia" international journal of business, economics and management, ISBN:978-967-5705-10-PP no:367-376
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⁴ **Ms. Shallu , Ms. Sangeeta Gupta 2013** , in the study title "Impact of promotional activities on consumer buying behaviour: A study of cosmetic industry" international journal of commerce , business and management(IJCBM), ISSN: 2319-2828 Vol, 2, No.6, December 2013 PP no:379-385

**DATA ANALYSIS AND INTERPRETATION
SIMPLE PERCENTAGE METHOD****TABLE SHOWING THE SOURCE OF INFORMATION ABOUT REVLON PRODUCT**

S.NO	FACTORS	NUMBERS OF RESPONDENTS	PERCENTAGES
1	FRIENDS	34	34%
2	SOCIAL MEDIA	14	14%
3	ADS IN MOBILE APP	7	7%
4	ONLINE SEARCH	7	7%
5	OUR WEBSITE	6	6%
TOTAL		100	100%

*(source: primary data)***INTERPRETATION**

From the above table it is revealed that 34% of the respondents are heard from friends. 14% of them are heard from social media.

Majority 34% of them reared from friends.

TABLE SHOWING AMOUNT SPEND ON BUYING REVLON MAKEUP PRODUCTS

S.NO	FACTORS	NUMBERS OF RESPONDENTS	PERCENTAGES
1	500-1000	45	45%
2	1001-3000	33	33%
3	3001-4000	16	16%
4	4001-5000	4	4%
5	ABOVE 5000	2	2%
TOTAL		100	100%

*(source: primary data)***INTERPRETATION**

From the above table it is revealed that 45% of the respondents spends 500-1000. 33% of the respondents spends 1001-3000 .16% spends 3001-4000.

Majority 45% of the respondents spends 500-1000 to buy this brand products.

TABLE SHOWING HOW FAMILIAR WITH REVLON BRAND

S.NO	FACTORS	NUMBERS OF RESPONDENTS	PERCENTAGES
1	EXTREMELY FAMILIAR	17	17%
2	NOT SO FAMILIAR	57	57%
3	VERY FAMILIAR	15	15%
4	NOT AT ALL FAMILIAR	11	11%
TOTAL		100	100%

*(source: primary data)***INTERPRETATION**

From the above table it is revealed that 17% of the respondents are extremely familiar, 57% of the respondents are not so familiar, 15% of them are very familiar, and 11% of them are not so familiar of this Revlon brand.

Majority 57% of the respondents are not so familiar with this product.

**RANK ANALYSIS****TABLE SHOWING SOURCE OF KNOWLEDGE LEVEL**

S.NO	FACTORS	1	2	3	4	5	6	7	8	9	10	TOTAL	RANK
1	TV	37	31	14	7	2	3	1	-	4	1	320	IV
2	MAGAZINES	15	27	27	11	4	9	2	3	1	1	415	II
3	ONLINE ADVERTISEMENT	9	19	25	19	6		8	3	1	2	385	III
4	FRIENDS	10	13	18	22	13	8	8	5	1	2	416	I

*(source: primary data)***INTERPRETATION**

From the above table the respondents ranked the friends as the I, the respondents ranked the magazines as the II, the respondents ranked online advertisements as III and the respondents ranked the

tv as IV as the course of information of Revlon products.

It revealed that the respondents ranked the friends as the based on the course of information.

TABLE SHOWING THE FACTORS WHICH INDUCE THEM TO BUY

S.NO	FACTORS	1	2	3	4	5	6	7	8	9	10	TOTAL	RANK
1	Colour	21	26	11	8	8	7	13	11	54	20	447	V
2	Fragrance	14	12	12	9	7	7	20	9	6	4	493	IV
3	Quality	12	6	17	7	11	9	17	15	2	4	509	III
4	Price	10	6	9	18	9	11	20	10	4	3	512	II
5	Long lasting	11	8	6	12	13	9	18	9	10	4	540	I

INTERPRETATION

From the above table the respondents ranked long lasting as I, the respondents ranked the price as II, the respondents ranked the quality as III, the

respondents ranked the fragrance as IV and the respondents ranked the colour as V as the factors which induce them to buy.

LIKERT SCALE ANALYSIS**TABLE SHOWING SATISFACTION LEVEL OF PRICE**

S.NO	FACTORS	NUMBER OF RESPONDENTS	LIKERT SCALE VALUE	TOTAL
1	HIGHLY SATISFIED	14	5	70
2	SATISFIED	33	4	132
3	NEUTRAL	51	3	153
4	DIS-SATISFIED	1	2	2
5	HIGHLY DIS-SATISFIED	1	1	1
TOTAL		100	15	358

(source: primary data)

$$\text{LIKERT SCALE} = \frac{358}{100} = 3.58$$

Likert scale value 3.6 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.

TABLE SHOWING SATISFACTION LEVEL OF COLOUR AND SHADES

S.NO	FACTORS	NUMBER OF RESPONDENTS	LIKERT SCALE VALUE	TOTAL
1	HIGHLY SATISFIED	9	5	45
2	SATISFIED	53	4	212
3	NEUTRAL	36	3	108
4	DIS-SATISFIED	2	2	4
5	HIGHLY DIS-SATISFIED	0	1	0
TOTAL		100	15	369

(source: primary data)



LIKERT SCALE = 369/100
3.69

Likert scale value 3.7 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.

TABLE SHOWING SATISFACTION LEVEL OF QUALITY

S.NO	FACTORS	NUMBER OF RESPONDENTS	LIKERT SCALE VALUE	TOTAL
1	HIGHLY SATISFIED	6	5	30
2	SATISFIED	37	4	148
3	NEUTRAL	54	3	162
4	DIS-SATISFIED	2	2	4
5	HIGHLY DIS-SATISFIED	1	1	1
TOTAL		100	15	345

(source: primary data)

LIKERT SCALE = 345/100
3.45

Likert scale value 3.5 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS

SIMPLE PERCENTAGE ANALYSIS

- It revealed that majority 81% of the respondents are the age group of 18-30 years.
- It revealed that mostly females are using this product.
- It revealed that majority 48% of them are students so mostly students are aware of this brand.
- It revealed that majority 41% of them are earning below 5000.
- It revealed that majority 75% of respondents are unmarried.
- It revealed that majority 45% of the respondents spend 500-1000 to buy this brand products.
- It revealed that majority 34% of them are reared from friends.
- It revealed that majority 57% of the respondents are not so familiar with this product.
- It revealed that majority 45% of the respondents heard once or twice about this Revlon product.

RANK ANALYSIS

- It revealed that the respondents ranked the friends as the I based on the course of information.
- It revealed that the respondents ranked the fragrance as I as the product which they tend to buy in Revlon brand.

- It revealed that the respondents ranked the long lasting as I as the factor which induce them to buy.

LIKERT SCALE ANALYSIS

- Likert scale value 3.6 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.
- Likert scale value 3.7 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.
- Likert scale value 3.5 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.
- Likert scale value 3.4 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.
- Likert scale value 3.5 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.
- Likert scale value 3.4 is greater than the middle value of (3), so the customers are satisfied with the product experience of Revlon product.

SUGGESTION

- On the basis of findings of the present study, the following suggestions are made which may contribute to the brand awareness and consumer buying behaviour of Revlon cosmetic products.
- Beauty consciousness is the major reason which majority of the customers purchase the Revlon products. Hence, attempts are made to increase the sales of Revlon product among customers through various sales



promotional measures and suitable advertisements.

- In order to increase the awareness level of customers, it is suggested to the manufacture of Revlon product to increase the sales promotions
- Consumer education does affect decision quality, and decision quality does influence the consumer buying behaviour. Although consumer education does not show a direct impact on consumer awareness in cosmetic industry, a company should improve consumer awareness, and provide a positive image for companies.

CONCLUSION

The Revlon cosmetic products are booming and holds a distinct position compared to other products but this conditions only in western countries and in India metro cities. Among the customers, the grade of Revlon products has come a long way and the market is set to achieve tremendous growth in near future. The evolution of product functionality and demand for innovative products is on rise. The present study concludes that there is a limited awareness of Revlon product among the peoples in Coimbatore city.

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EXPERIMENTAL STUDY OF THE FLOW DYNAMICS OF COMPLEX VISCOELASTIC FLUID THROUGH HYPERBOLIC CONTRACTION/EXPANSION

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Article DOI: <https://doi.org/10.36713/epra5875>

ABSTRACT

The main objective of this work was to experimentally study the Flow dynamics of viscoelastic fluids (Boger fluid and Hase) when they flow through a contraction/expansion system defined by a hyperbolic tube, therefore through equations analogous to the Hagen-Poiseuille equation, the pressure drop associated with the viscous interaction was quantified, and subsequently the excess pressure drop (EPD), a parameter associated with the elasticity of viscoelastic fluids, conducting comparative studies with respect to a Newtonian reference for the same shear viscosity value, which allowed observing shear speed intervals where three predominant zones were observed. The first of them of shear type coinciding with the trajectories of the Newtonian fluid of identical viscosity value, the second zone was attributed to the elastic manifestation of the fluids due to the preferential development of the extensional flow that is in constant competition with the shear flow within of the same geometry. The third zone was attributed to a predominance of the shear flow over the extensional one, because of to the fact that the hyperbolic geometry favors the development of this type of flow at high values of shear rate

KEYWORDS: *Excess pressure drop; Extensional flow; Hyperbolic contractions*

BACKGROUND

The first studies of flows in contraction with viscoelastic fluids can be considered to have been carried out by Cable & Boger (1978) analyzing the flow through axisymmetric contractions at different contraction ratios with two fluids: the first based on glucose and polyacrylamide, and the second a polyisobutene / polybutene mixture. Their results showed that the flow conditions in the contraction were mainly due to the rheological characteristics of the fluid, with all the information obtained they carried out specific velocity studies along the radial axis in the vicinity of the contraction, with 2: 1 and 4: 1 ratios

using polyacrylamide solutions where they observed a deceleration in the central line of flow of which had no explanation until that moment

The presence of extensional flow which gave rise to a uniaxial extensional viscosity, was responsible for this unknown behavior causing different responses in viscoelastic fluids for the same contraction and shear rate, meant an advance in the understanding of the dynamics flow in a contracting system.

Cable and Boger defined two main zones: the vortex growth regime and the divergent regime; with the which the presence of a shear flow and an extensional flow was reflected early as well as the



participation of both phenomena in the flow dynamics. In a later analysis (Boger, 1987), he attributed the change in flow conditions to an uneven development of extensional viscosity, to the same contraction ratio. Nguyen and Boger (1979) indirectly showed the presence of a shear flow in the contraction.

Binding (1991) in his proposal of flow dynamics, considered two aspects: the dominant flow in the fluid when passing through the contraction, and the elastic effect of the solution, from the first difference of normal stress. For this he proposed two mechanisms: a quasi-radial flow present at low values of shear rate, it considers that the flow has a radial contribution, in addition to that carried in the axial direction, which has its origin in the elastic nature of the fluid developing a shear flow even above extensional flow. And a funnel type flow at high values of shear speed where the current lines are oriented towards the interior of the contraction, favoring the development of the uniaxial extensional flow. These zones correspond to the regimes exposed by Cable and Boger.

Meissner (1985), Coswell (1987), James (1990, 1991) are the first to expose the use of convergent hyperbolic geometries in contracting flows, since they comply with areas where the product of the square of the radius times the length of the geometry are constant. This condition would guarantee the formation of an extensional flow free of shear effects.

The main areas in which the investigations of flow in hyperbolic contraction are focused are given in the study of planar geometries where the three-dimensional effects are not considered significant. In recent years, expansion-contraction studies have focused in addition to sudden axisymmetric contraction towards other types of geometry such as hyperbolic in order to find the differences caused by the geometry on the flow dynamics. Works such as those presented by Oliveira (2006), Campo (2011), Ober (2013) and collaborators deal with planar hyperbolic contraction zones with different types of viscoelastic fluids modeled by different constitutive equations (PTT / Carreau); These are performed on a micrometric scale and their results are restricted to small flow ranges and shear rate.

Tabatabaei (2015) studied the flow of micellar fluids in an axisymmetric hyperbolic contraction/expansion in a numerical way, using the finite volume method; while Nyström (2016) makes a numerical / experimental comparison of a Newtonian fluid and a Boger fluid on a millimeter scale, finding great similarities between their results. The characteristic radial function with which the contraction zone is defined takes on special relevance since it is an indicator of the fluid-wall interaction generated, being

greater compared to a sudden contraction of similar dimensions.

Many of the previous studies lead to the conclusion that the viscous effects due to shear are the main contribution in the total pressure drop generated by these systems, therefore any additional effect is seen as a result of the elastic and extensional response by fluid. There have been many authors who, through numerous models and constitutive equations (James (1991), Rajagopalan (2000), Feigl (2003), Pandey (2007), Sousa (2010-2011)), who have proposed decoupling the effects viscosity of the extensionals, to determine the values associated only with the extension, such as the extensional viscosity of an inhomogeneous flow field, with acceptable results, but restricted to very low extension speed values, given that most of the devices The proposed experiments are carried out at the micro and nanometric scales. However, larger-scale flows represent the cases present in a large number of situations both within and outside the field of engineering, far from ideal situations. In this sense, Binding and Walters (1988) have spearheaded the idea that generating a purely extensional flow is practically impossible.

Despite this situation, there are still many proposals in order to decouple flows with a high extensional component from their shear part and thus be able to interpret the data in a way that can capture the extensional component adequately and accurately, defining the speed of deformation and extensional viscosity. These statements have been debated and controversial by the scientific community of the field, given their importance and the expectation of being able to make semi-quantitative predictions.

HYPERBOLIC CONTRACTION EXPANSION

The hyperbolic contraction/expansion geometry, despite its simplicity, shows a great variety of flow paths that depend from the rheology of the fluid used and the type of hyperbolic path studied or even if the geometry is rectangular or cylindrical. Like axisymmetric and square geometry during flow development, competition occurs spontaneously between the shear flow that manifests itself in the vicinity of the contraction walls and the uniaxial extensional flow that develops mainly on the central line.

When the fluid enters the geometry, it imposes flow conditions that cause very different fluid responses depending of the rheology of the fluid, for example if the experiment is carried out at constant flow, as the flow develops, the fluid experiences a differential acceleration through a length differential,



due to the reduction in area, this condition is maintained until reaching the smallest area of the geometry which is just in the middle part to start the phenomenon again in the direction inverse, that is a expansion process.

Since of the rheological point of view, the fluid exposed to a hyperbolic contraction-expansion, in its contraction stage experiences an increase in its shear rate also differentially, if the fluid is Newtonian in nature its response will be exclusively of viscous origin which will develop along the walls of the contraction, however since the area differentially decreases the viscous response of the fluid will decrease to become more and more in a inertial response which will have its greatest presence right in the center of the contraction, this effect has been visually registered by observing vortices of non-elastic origin in the vicinity of the median plane of contraction, as reported by Campo Deaño 2013

If it is a viscoelastic fluid of constant viscosity such as Boger fluid, the competition between the viscous response from the strong development of the shear flow in relation to the response of inertial origin is very uneven unless the inertial forces develop due to the provision of high flows which will generate high speeds. what is preferentially presented is the development of high extensional stresses in the vicinity of the central line of the contraction that favor the development of the extensional flow, which is now strongly favored because this geometry directs the streamlines towards the central line just up to half the geometry.

Undoubtedly, now the competition between the development of the uniaxial extensional flow and the shear flow is important to understand the flow dynamics, in particular for a Boger fluid since its viscosity associated with the shear flow will remain constant at any value of shear rate imposed on the system but not its viscosity associated with the development of extensional flow of an elastic nature which will inevitably increase as the flow in the system increases.

In addition to this competence and keeping in mind the study of flow dynamics, the presence of the first normal stresses from the development of the shear flow in this geometry is important, since as it has been studied in previous contractions, their presence is decisive in the dynamics flow especially at the beginning of experimentation at low shear rate values.

If it is a study of the flow dynamics of a viscoelastic but thinning fluid, its response to flow now involves one more effect in relation to the response of a Boger fluid, The thinning nature will cause a decrease in viscosity in a differential way as the shear rate is

increased along the geometry, this condition substantially reduces the presence of the shear flow, allowing a greater development of the extensional flow, However, the presence of N_1 in shear does not change due to the fact that the viscosity of the fluid decreases, hence in this study two types of competencies will be presented: at low values of shear rate, the development of extensional flow competes so much with the development of the shear flow even with a high viscosity value together with its elastic manifestation corresponding to the first difference of normal stresses

At relatively high values, the competition between opposite effects, the competition will be between a very intense extensional flow with a very decreased shear flow where the viscosity of the fluid will reach values as low as that of the solvent, however with an elastic response associated with the shear very intense whose shear stresses will be in magnitude very similar or even greater than the extensional stresses developed on the center line.

Once the fluid crosses the middle part of the geometry, the high competition between both flows relaxes in the case of a Boger fluid, the extensional flow relaxes and therefore its viscosity while its shear viscosity will still remain constant, for the case of the elastic and thinner fluid such as HASE the shear viscosity gradually recovers as the fluid completes its path through the geometry, while the viscosity associated with the extensional flow will decrease due to the relaxation of the fluid and the increase in shear viscosity.

Against this background, the experimental capture of the competition between both flows in both the convergent and divergent sections of the geometry is important in understanding the flow dynamics of complex fluids in hyperbolic contractions-expansions.

THEORETICAL FRAMEWORK

Pressure Drop Through a Hyperbolic Tube

One of the main challenges in the study of hyperbolic contractions is to find an analytical expression that describes the pressure drop through tubes with this type of geometry. Sochi (2010), proposed a method to calculate the pressure drop of a Newtonian fluid in tubes of non-constant radio in an analytical way, from the Hagen-Poiseuille Equation, and with it applying all the considerations associated with obtaining it. (Bird, 1960).

The pressure drop experienced by a Newtonian fluid flowing through a straight tube of radius r along a distance L is calculated using the Hagen-Poiseuille



$$\Delta P = \frac{8QL\mu}{\pi r^4} \quad (1)$$

For an infinitesimal length and defining a radial function $r(x)$, dependent on the length of the tube L

$$\Delta P = \frac{8Q\mu}{\pi} \int_{x=0}^{x=L} \frac{dx}{r(x)^4} \quad (2)$$

In this work the hyperbolic function with a radial function proposed by Tabatabaei (2015) will be used

$$r(x) = \frac{r_{\max}}{\sqrt{\left(\frac{x}{15r_{\min}}\right)\left(\frac{r_{\max}^2}{r_{\min}^2} - 1\right) + 1}} \quad 0 \leq x \leq 15r_{\min} \quad (3)$$

Substituting Eq. 3 in Eq. 2 and later integrating

$$\Delta P_C = \frac{80Q\mu}{\pi r_{\max}^4} \left[r_{\min} + \frac{r_{\max}^2}{r_{\min}} + \frac{r_{\max}^4}{r_{\min}^3} \right] \quad (4)$$

which corresponds to the pressure drop of a Newtonian fluid through a hyperbolic geometry.

Pressure drop measurements are not made directly at the inlet or outlet of the hyperbolic geometry, so the reading is not affected by inlet effects as well as nearby vortex formation.

To minimize these effects, straight tube sections are considered in the areas immediate to the entrance and exit of the hyperbolic geometry as shown in Fig.1 from which the measurement sensors are located (the radius of these straight sections must correspond to the maximum radius of the contraction /expansion hyperbolic).

Excess Pressure Drop (EPD)

The total pressure drop for a Newtonian fluid estimated experimentally as shown in Fig.no.1 does not correspond exactly to the sum of the individual pressure drops, for this it is necessary to incorporate the known excess pressure drop (EPD) that corresponds to the difficulty experienced by the fluid at the entrance of the contraction for the case of a Newtonian fluid has been addressed by Sampson for the case of axisymmetric geometries (), however for hyperbolic geometries for Newtonian and non-Newtonian fluids its expression is still unknown by which must be estimated experimentally.

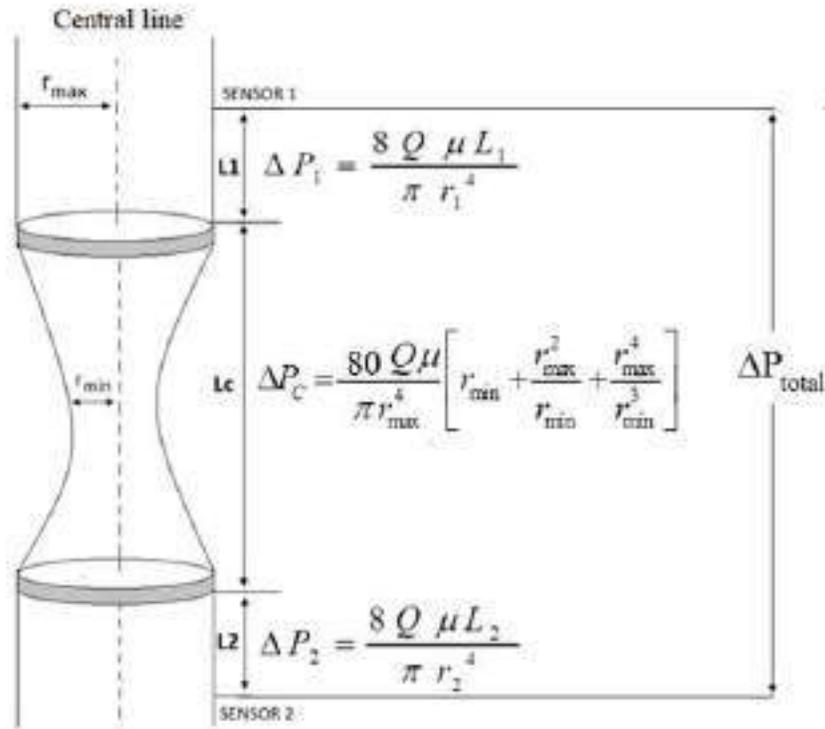


Fig. no.1 Partial and total pressure drops through a hyperbolic contraction /expansion system

For the estimate of the total experimental pressure drop to coincide with the sum of the partial

pressure drops illustrated in Fig. 1, it is necessary to consider the excess pressure drop

$$\Delta P_{Total} = \Delta P_1 + \Delta P_C + \Delta P_2 + \Delta P_e \tag{5}$$

The excess pressure drop has a different interpretation depending on the type of the fluid, for a Newtonian fluid, the EPD represents the resistance to flow of viscous origin that the fluid experiences at the entrance of the contraction, while for a viscoelastic fluid it is

considered as that flow condition that promotes the development of extensional flow within the contraction (Cogswell, 1978), This term is usually obtained indirectly, from experimental total pressure drop readings of the system

$$\Delta P_e = \Delta P_{Total} (exp) - (\Delta P_1 + \Delta P_C + \Delta P_2) \tag{6}$$

$$\Delta P_e = \Delta P_{Total} (exp) - \left[\frac{8Q\mu(L1+L2)}{\pi r_{max}^4} \right] - \left[\frac{80Q\mu}{\pi r_{max}^4} \left(r_{min} + \frac{r_{max}^2}{r_{min}} + \frac{r_{max}^4}{r_{min}^3} \right) \right] \tag{7}$$

**Experimental determination of extensional viscosity**

As stated above, much research is focused on finding new techniques and devices for the determination of extensional viscosity. The main difficulty lies in obtaining and generating conditions that promote the formation of a purely extensional flow with constant extensional rate (Trejo, 2013). Contraction and / or contraction / expansion flow systems have been proposed by many researchers as a way to accomplish this goal, given their relative simplicity and being able to calculate this quantity in terms of simpler variables such as pressure drop, volumetric flow, and other material and / or geometric parameters

One of the main examples to expose the difficulty of obtaining the extensional viscosity is the

so-called M1 project, where through various techniques and methodologies, they determined the value of the extensional viscosity of a standard polymeric solution, called M1. (Petrie, 2006). There are many discrepancies in the experimental values of extensional viscosity. This is a trend that continues even in more recent similar techniques. The determination of the quantity $\tau_{zz} - \tau_{rr}$ has been one of the main topics in studies on the subject. The proposals for the determination of extensional viscosity in contracting systems have been diverse, such as the experimental measurement of the total pressure between the inlet and outlet of a hyperbolic contraction, in addition to the extension rate $\dot{\epsilon}$ and the Hencky extension ϵ_h (Feigl Et Al, 2003)

$$\eta_e = \frac{\Delta P_e}{\left(\dot{\epsilon} \right) (\epsilon_h)} \quad (8)$$

Alternatively, the value of the first normal stress difference N1 is also proposed as a parameter to obtain it; an example of this is the work of Nystorm. (2016). The differences in the value of extensional viscosity between researchers are not few: Ober (2013) and Wang (2011) obtain extremely high extensional viscosity values when compared with the shear viscosities of the study fluids, giving rise to high Trouton ratios, while Anna (2000) and James (1991) show extensional viscosities in their work that meet the Trouton relationship at low flows.

One of the main reasons to explain this disparity between results and magnitudes of extensional viscosity in different experiments lies in the magnitude of the extension speed, which is usually very low with respect to the order of magnitude of the pressure, which causes the value of extensional viscosity increases exponentially. Alternatives have been proposed, such as associating the Hencky extension or the pressure coefficient (James & Chandler, 1991) to the calculation of the extensional viscosity to correct this effect and offer values closer to those of the predicted theoretical viscosity. Some of the interpretations presented by Ober (2013) to explain the non-fulfillment of the

Trouton relation in their results mentions that the measurements made do not represent an ideal homogeneous extensional flow, but rather a dominant transient flow in extension, being affected by the behaviors rheological fluid, so Quantities such as excess pressure drop and extensional viscosity are considered a measure of the viscoelastic resistance to expansion in mixed flow rather than a pure elastic manifestation.

EXPERIMENTAL METHODOLOGY**Construction of contractions**

The modeling of the hyperbolic contraction/expansion zones for different contraction ratios was carried out in the free access software Blender, respecting the dimensions given by the radial function (equation 3). Later they were built by a 3D printer (figure 2). The impression material was acrylonitrile-butadiene-styrene (ABS).

Table 1 shows the dimensions of each of the contractions studied.



Table 1. Dimensions for hyperbolic contractions

<i>Contraction ratio</i>	<i>Maximum radius [cm]</i>	<i>Minimum radius [cm]</i>	<i>L=30*Rmin [cm]</i>
2:1:2	1	0.5	15
3:1:3	1	0.33333	10
4:1:4	1	0.25	7.5
5:1:5	1	0.2	6



Figure 2. 3D-model and final impressions at different contraction ratios

(2:1:2, 3:1:3, 4:1:4, 5:1:5 6:1:6)

Rheology of solutions

Three fluids with different rheological properties were prepared, where the proportion of their components guarantees that all of them present the same value of shear viscosity 16 Pa s at the established operating temperature (26 ° C) and whose procedures are exposed in greater depth in previous works (Pérez, 2016; Quezada, 2017). Newtonian fluid used as a reference fluid, consists of a concentrated solution of 10 liters of glucose in water, which were equally separated to use in the preparation of Boger fluid.

To the remaining concentrated glucose solution, add a small amount of dilute polyacrylamide solution. The addition of this polymer generates a fluid whose viscous behavior is like that of a Newtonian fluid, while exhibiting elastic properties (Boger fluid). 50 ml

of a 0.1% by weight solution of polyacrylamide in water were prepared.

Finally, a HASE (hydrophobically modified alkali-swallowable emulsion) is made up of polymer chains that form micellar structures. This structure gives it its main rheological properties: at low shear rate values, the shear viscosity remains constant, at a higher shear rate it begins to show a shear-thinning behavior. For the preparation of this fluid, 500 ml of a 0.1 M solution of neutralizing agent and 2-amino-2-methyl-1-propanol was used, allowing it to stand at room temperature for 24 hours. 5 liters of 2.5% HASE solution were prepared, for this Acrisol TT-935 was used, slowly adding distilled water, which received mechanical stirring for 30 minutes and then left to rest for 72 hours.

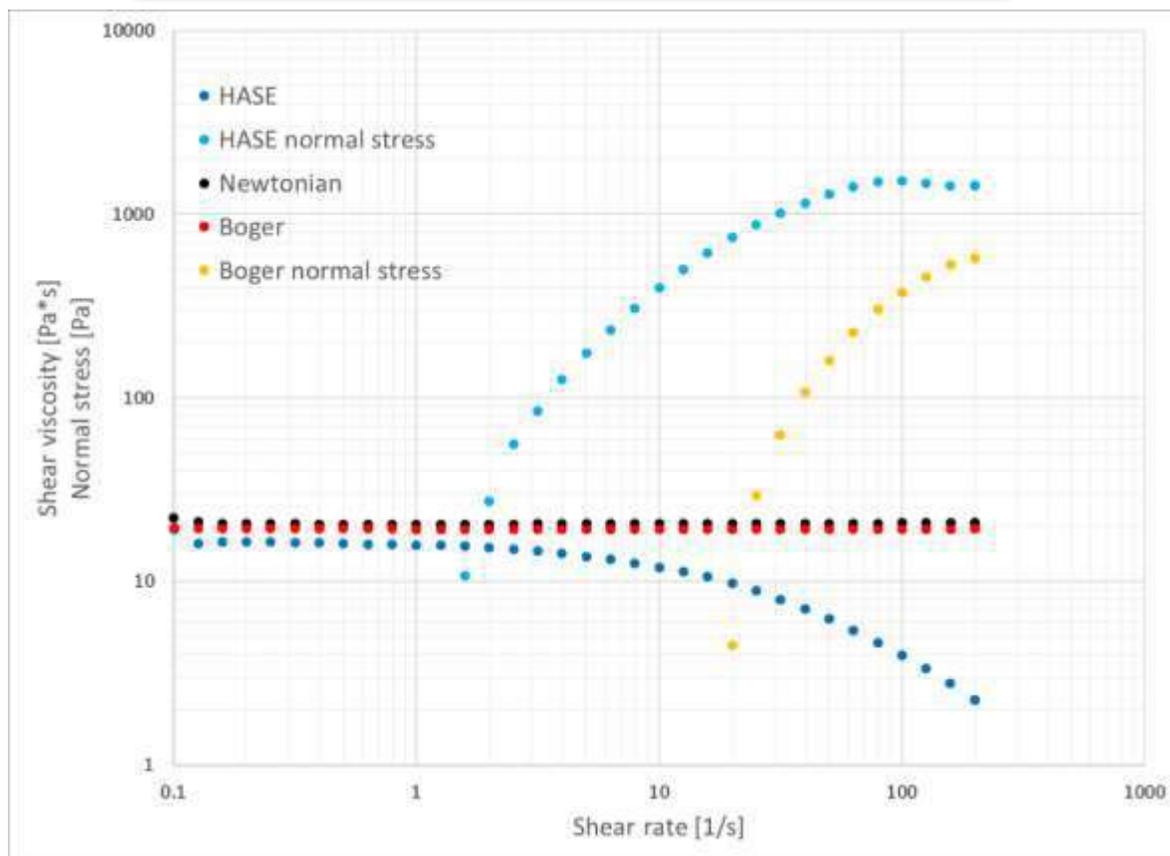


Figure 3. Rheogram for the different fluids for the experimental phase at operating temperature (26 °C)

The shear viscosity values, as well as the elastic response of the fluids, were measured an AR-G2 cone and plate rheometer from TA Instruments.

RESULTS AND DISCUSSION

Contraction 2: 1: 2

Total pressure drop vs shear rate

At low shear rate values, the three fluids present a similar upward trend, characteristic of a shear flow (figure 4-a); While the Newtonian fluid follows this behavior throughout the entire experimentation range, for the two viscoelastic fluids there is a critical shear rate (5-6 s⁻¹), where the pressure drop increases considerably with respect of the Newtonian fluid. increasing the shear rate, the HASE solution present a slight decrease, indicating changes in the value of its shear viscosity, predicted by its rheological behavior (figure 3).

-Excess pressure drop vs shear rate

The excess pressure drop (EPD) allows to visualize the elastic contribution present in the fluids to be analyzed, as they are separated from their shear

counterpart. The graph in figure 4-b shows how both the Boger fluid and the HASE solution do not present values close to the Newtonian shear behavior at low flows, concluding that even in this range of values elasticity develops to a greater or lesser degree, (phenomenon not observable in the graph of total pressure drop) and it is until the critical shear rate is reached that the elastic effect increases dramatically. At high shear speed values, the growth of the elastic effect is no longer increasing, with trends like those observed at low flows: shear flow begins to hinder the development of extensional flow.

In the case of the Boger fluid, the value of the EPD presents values below the Newtonian line, contradicting what was previously stated regarding the development of elasticity at low flows, especially when compared with the HASE solution, whose values are always above the Newtonian line. The study of dimensionless quantities will make it possible to visualize the effects associated more clearly.

***Dimensionless excess pressure drop vs shear rate***

As stated previously, dimensionless EPD provides a comparison between the extensional flow developed by viscoelastic fluids and the resistance of the fluid to flow through the contraction zone. So, any value greater than unity is associated with an extensional response of elastic origin

The corresponding graph (figure 4-c) shows interesting behaviors that occur in viscoelastic fluids at low shear rates. The fluids start with values greater than the reference (an indication that there is indeed an elastic effect), presenting a decrease to a minimum value, and subsequently grow as they approach the critical shear rate; This behavior is caused by the manifestation of the first difference in normal stresses, that is, the effect of the elasticity of the fluid in the direction perpendicular to the flow, which hinders the total development of the extensional flow in the axial direction, and increasing the shear flow effect.

As flow increases, the elastic effect in the axial direction begins to dominate over the elastic effect in the radial direction and thus the dominance of extensional flow. However, upon reaching a maximum point, the extensional domain is not maintained, decreasing again with increasing shear rate, indicating greater resistance to flow.

There are some particular differences between the fluids studied: The values of dimensionless EPD at low shear rates are higher in HASE (the elasticity of this fluid is usually higher) as well as the maximum value generated in the vicinity of the critical shear rate (area where there is the maximum extent of the fluid). The decrease observed in the zone after the critical shear rate in HASE is more noticeable than Boger.

An explanation for these differences is found in the very nature of the HASE solution, since it consists of long polar molecular chains, which favor the orientation of its molecules with the flow, from a certain point, the oriented chains begin to interact strongly with each other, increasing the shear flow effect. In the case of the Boger fluid, the decrease from the maximum point is smaller, since its molecules do not tend to interact with each other in the same way as HASE, so its decrease is related to a predominance of shear flows.

Analogous to the previous graph, the quotient between the excess pressure drop and the pressure drop of the hyperbolic geometry (Figure 4-d) directly

compares the extensional and shear flows present in the fluid. The line for Newtonian fluid shows that flow experiences a shear flow domain. The variations presented by the viscoelastic fluids with respect to the Newtonian line will be related to the development of the extensional flow.

The viscoelastic fluids present a behavior like that analyzed in the first dimensionless EPD graph, observing the effect of the first difference in normal stresses of the two fluids. However, the previous graphs provide additional information: the shear flow has different origins depending on the area being studied: at low shear rate the shear effect has an elastic origin, carried out in a direction perpendicular to the flow, while at higher shear rate, the shear effect is due to the viscous interaction of the fluid (both with the tube walls and between the fluid elements) increasing its resistance to flow.

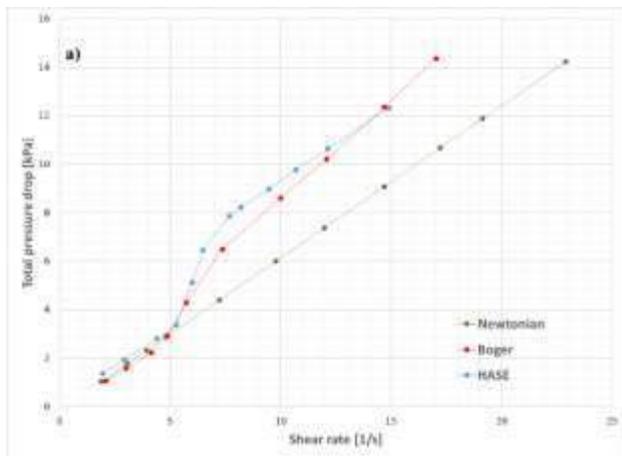
In the middle of these two zones, there is a relatively small shear rate range (the only one observed) where the extensional effect exceeds the shear flow. A study focused on the extensional flow should focus on analyzing an ranges of shear rate close to the critical value.

Extensional viscosity vs extension rate

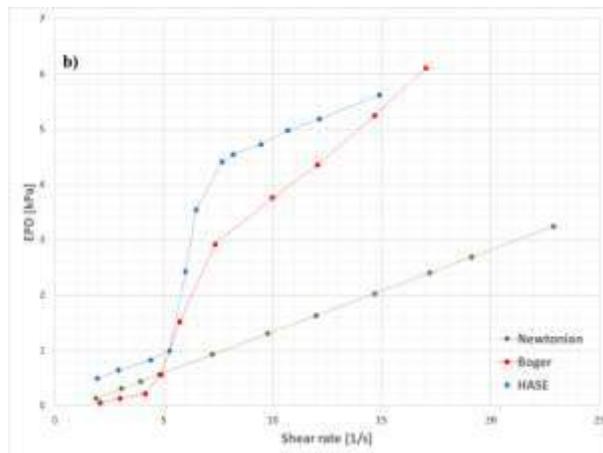
The calculated extensional viscosity values (figure 10-e) for the two fluids show very high values when compared with their respective shear viscosities (figure 10-f); although they are consistent in order of magnitude to that of studies with similar methodologies (Aguayo, 2008; Wang, 2011; Ober, 2013). As occurs in the graphs referring to the shear rate, there is a critical extension rate (0.06-0.08 1 / s), where the property growth grows drastically, which coincides with the area of predominance of the extensional flow in the system. At extension speeds after the critical zone, a decrease in extensional viscosity is observed, consistent with a greater influence of the shear flow, being more noticeable in HASE, while the Boger fluid exists an interval where it remains practically constant. These differences are caused by the change in viscosity of HASE as the shear effect in the flow increases, therefore, as its shear viscosity decreases, the same trend is observed for its extensional counterpart



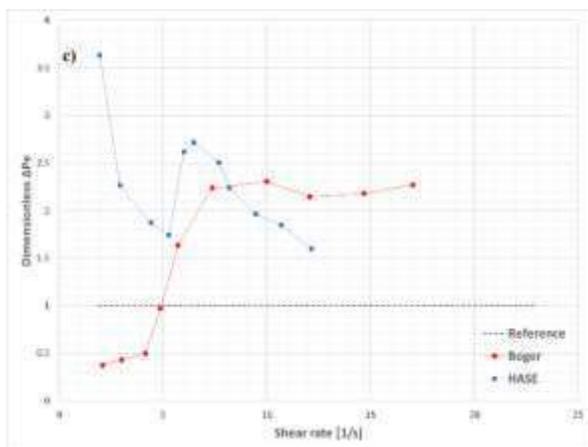
FIGURE 4. EXPERIMENTAL RESULTS - CONTRACTION/EXPANSION 2:1:2



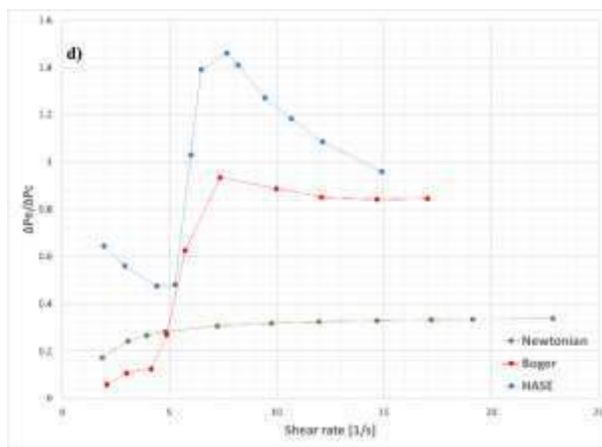
a) TOTAL PRESURE DROP VS SHEAR RATE



b) EPD VS SHEAR RATE

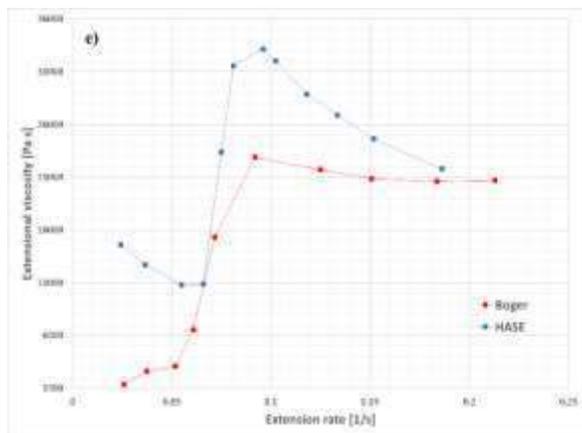


c) dimensionless EPD vs shear rate

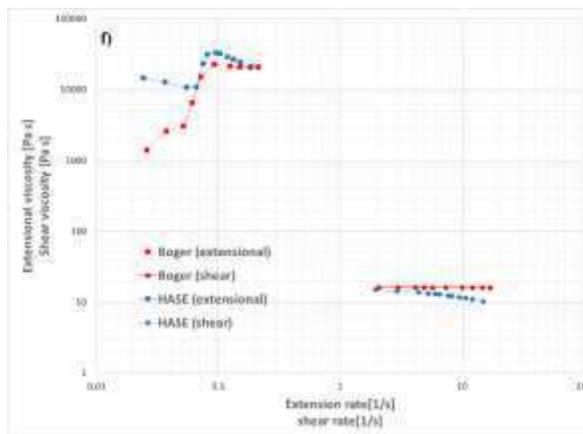


d) $\Delta Pe / \Delta P_c$ vs shear rate

e) Extensional viscosity vs extension rate



f) Extensional/shear viscosity vs extensional/shear rate





As a summary, it is observed that the flow dynamics in contraction consists of a coexistence between shear and extensional flows, presenting three main zones where the presence of one or another type of flow is predominant: The first zone has low flows, where there is a strong shear domain due to the effect of normal flow stresses of elastic origin, hindering extensional flow development and increasing the shear effect; at a certain critical interval of shear (4-6 s⁻¹) or extension rate (0.06-0.08 s⁻¹) the extensional flow is the one that dominates the flow dynamics, and where extensional viscosity develops dramatically. The last zone, the increasing resistance to flow through a reduced cross-sectional area (viscous effect), generates a highly influential shear flow, gradually diminishing the extensional effect developed in the previous zone.

Contraction 3:1:3

Total pressure drop vs shear rate

The graph of the total pressure drop (figure 5-a) shows a more differentiated behavior between the analyzed fluids: The critical shear rate appears at a lower value in the HASE solution (12-13 1 / s) than the Boger fluid (20-21 1 / s). Additionally, the pressure drop of the HASE solution descend again towards the Newtonian line at high shear rate, opposite case to Boger, whose upward trend remains similar to that presented in the previous contraction. These differences are caused by an increasing distance of the rheological properties between both fluids: while Boger maintains the same value of shear viscosity, the range of shear

rate evaluated for the current contraction ratio causes the HASE solution to exhibit a decreasing viscosity, according to the rheogram presented in figure 3. Although the shear viscosity of the HASE solution decreases, the extensional effect is still present in the flow dynamics.

-Excess pressure drop vs shear rate

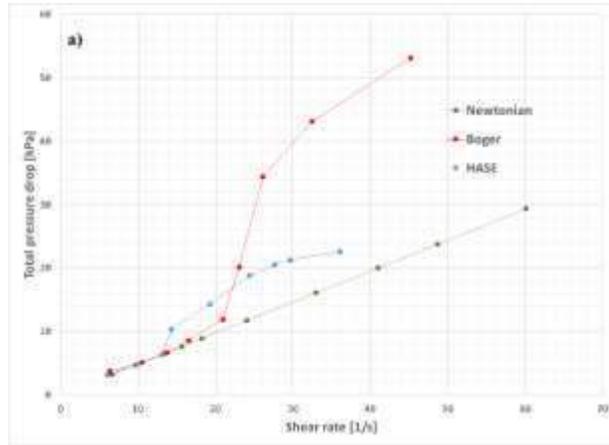
For the current case (figure 5-b), an approaching of the EPD values of the HASE solution to the Newtonian reference line is observed; while in the case of the Boger fluid, the curve under the reference line is much clearer, showing an effect of the first difference of normal stresses more intense than in the previous contraction ratio; both situations indicate the development of shear flow effects greater than those generated by the contraction ratio 2:1:2; by presenting a larger fluid/wall contact surface, such as a smaller cross-sectional area (Table 1), developing pressure drops greater than that of the previous case observed.

-Dimensionless excess pressure drop vs shear rate

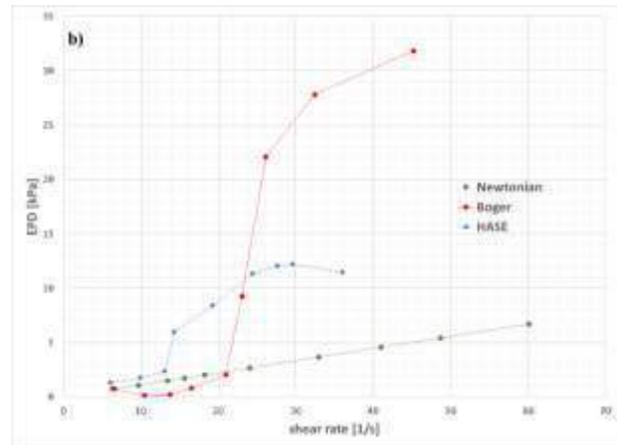
The dimensionless EPD makes the development of the first normal stress difference more evident at low shear rate values (Figure 5-c); where the elastic effect in radial direction (greater than that generated by 2: 1: 2 contraction) gradually increases to the point where the extensional effect exceeds it. This behavior shows that, as the elasticity develops in the radial direction with intensity, the elastic effect in the axial direction must develop by an equivalent amount (and even greater) in response to the changes in the contraction ratio.



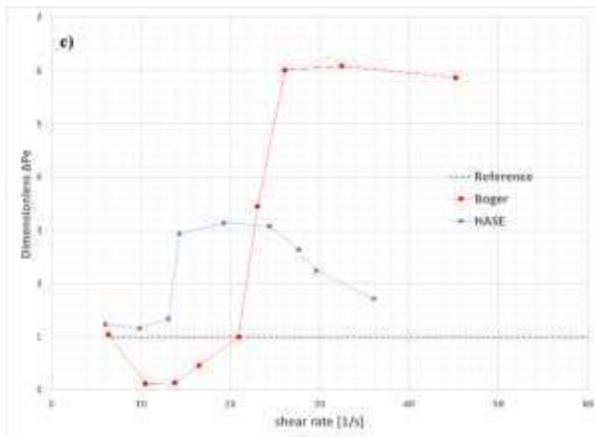
FIGURE 5. EXPERIMENTAL RESULTS - CONTRACTION/EXPANSION 3:1:3



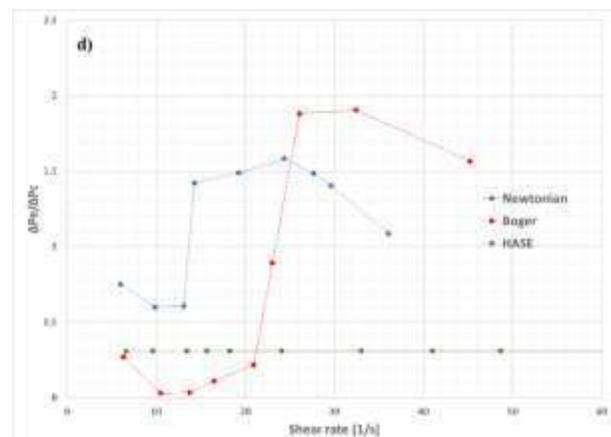
a) Total pressure drop vs shear rate



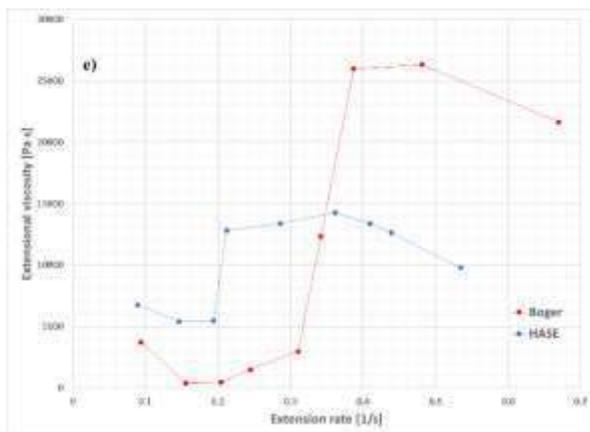
b) EPD vs shear rate



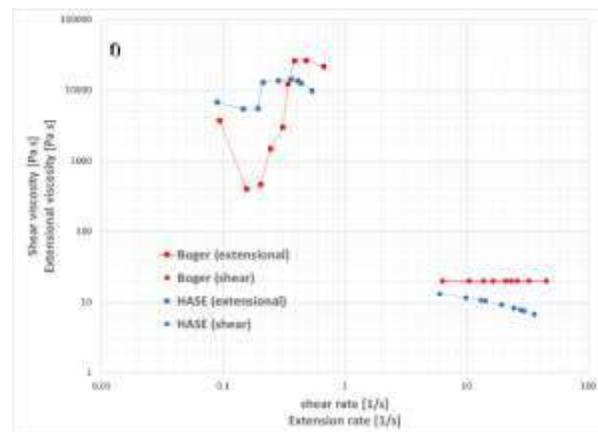
c) dimensionless EPD vs shear rate



d) $\Delta P_e / \Delta P_c$ vs shear rate



e) Extensional viscosity vs extensión rate



f) Extensional/shear viscosity vs extensional/shear rate



Figure 5-d confirms the increase in extensional and shear effects. In the particular case of the HASE solution, the dimensionless pressure drop values (figure 5-c and 5-d) are lower than those generated by the previous contraction. The growth of the effects of shear flow by increasing the contraction ratio, result in changes in the value of shear viscosity in this type of fluid, so the values represented are no longer comparable with respect to the shear viscosity of both the Boger fluid as the reference Newtonian (16 Pa s) since it flows at a lower shear viscosity. The observed extensional effects must be considered as an elastic manifestation at these low viscosity conditions, which are still of considerable value. This predominance is also evident in the Boger fluid, even when the viscosity does not decrease in this fluid, with a more abrupt decrease being observed after the critical zone.

Extensional viscosity vs extension rate

The behavior of the extensional viscosity (figure 5-e) agrees with the three main zones of flow dynamics observed both in this contraction relationship and in the previous one, the main difference being the drastic decrease in the extensional viscosity of the Boger fluid a low shear rate, an indication of the increase in shear effects, to the point of inhibiting the development of extensional flow. From the critical shear rate, a notable growth of extensional viscosity is observed at values higher than those reached by the 2:1:2 contraction, to finally descend to high shear rate. In the case of the HASE solution, the maximum value of extensional viscosity is lower than that generated in the previous contraction and the growth of extensional viscosity is not as noticeable, as it refers to a lower shear viscosity.

In general, the flow interval where there is extensional predominance is decreasing; the effect of shear flow begins to have a greater influence on the elastic extensional flow in the flow dynamics.

To recapitulate, the decrease in the minimum radius of the hyperbolic contraction zone generates changes such as to cause an increase in both the extensional and shear effects in the flow dynamics. However, the zones of shear or extensional dominance, defined in the contraction ratio 2:1:2, are valid for the current contraction ratio, increasing the degree of competition between the different types of flow.

Contraction 4:1:4

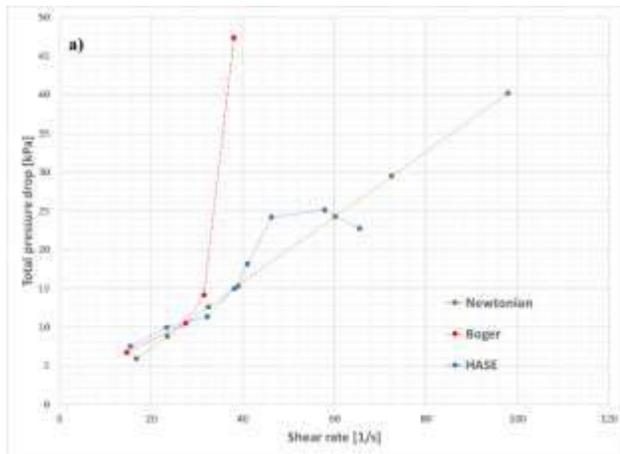
Total pressure drop vs shear rate

For the current contraction ratio there is a considerable increase in the pressure drops generated by the Boger fluid geometry, exceeding the measurement range of the sensors, generating anomalous pressure drops at high flows, so from this contraction ratio the number of points evaluated is lower than in the cases previously analyzed (figure 6-a). The initial points of the Boger fluid lie above the Newtonian line, so that for this contraction ratio there is from the beginning an important elastic contribution to the flow generated; on the other hand, the shear effect has experienced an important increase, so much so that for the HASE solution, there are points below the Newtonian line, indicating very low values of shear viscosity. The critical shear rate is manifested first in the Boger fluid (28-30 s-1), followed by HASE (36-38 s-1), reverse case of the 3:1:3 contraction.

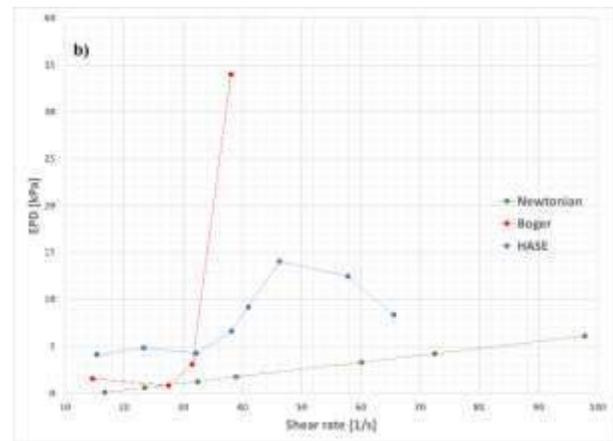


FIGURE 6. EXPERIMENTAL RESULTS - CONTRACTION/EXPANSION 4:1:4

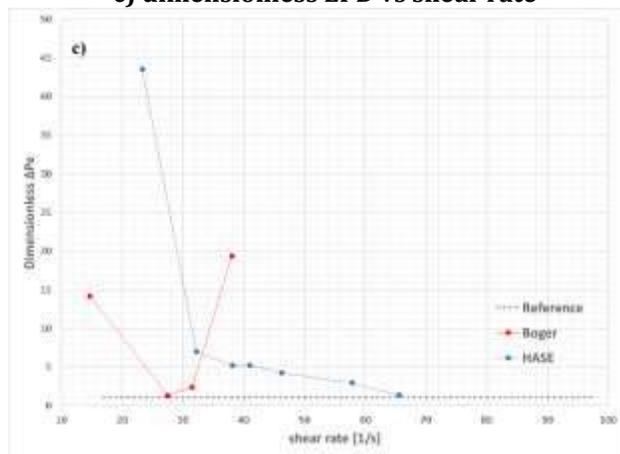
a) Total pressure drop vs shear rate



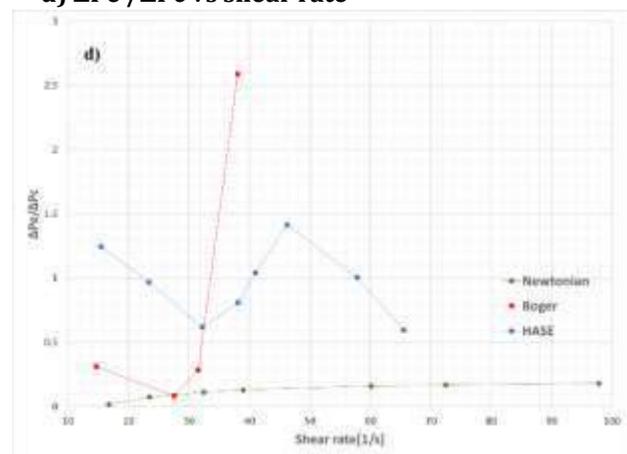
b) EPD vs shear rate



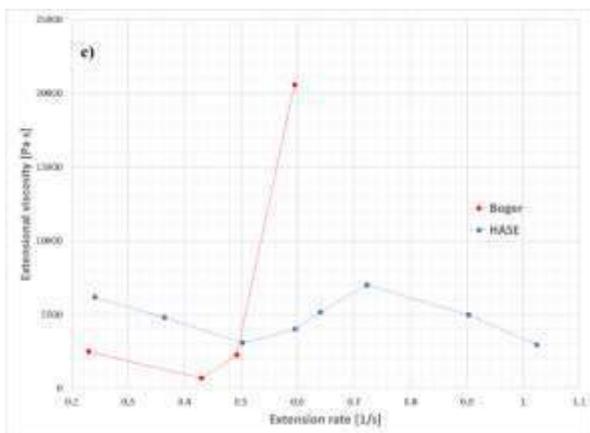
c) dimensionless EPD vs shear rate



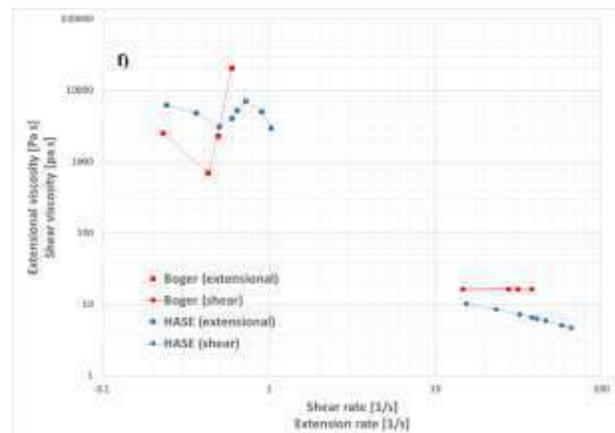
d) $\Delta Pe / \Delta Pc$ vs shear rate



e) Extensional viscosity vs extension rate



f) Extensional/shear viscosity vs extensional/shear rate



***Excess pressure drop vs shear rate***

In figure 6-b, the HASE solution is above the Newtonian line throughout the experimental range, exhibiting very high values, considering that, at the evaluated shear speed values, the shear viscosity of this fluid is approximately half from its original value (figure 3). the extensional dominance zone does not manifest itself with the intensity observed in the previous contraction ratios, its interval of influence wider than the present one. The effect of shear flow even begins to hinder the development of extensional flow.

In Boger fluid, the development of elasticity is such that the effect of the first normal stress difference no longer appears below the Newtonian line, presenting a slight decrease before the critical shear rate: The elastic effect in axial and radial direction are strong enough so that their effects are above the Newtonian shear reference. Unfortunately, the operating limit of the equipment makes it difficult to determine the behavior of the flow beyond this point and whether the latest evaluation corresponds to the maximum extensional manifestation developed by the flow.

Dimensionless excess pressure drop vs shear rate

The dimensionless graphs corresponding to this contraction ratio show a considerable development of elasticity in the flow range studied, and an increasing shear effect. For the dimensionless excess pressure drop (figure 12-c), all the values obtained for both fluids exceed the reference line. It is interesting to note the behavior of the line corresponding to the HASE solution the initial point shows a maximum development of elasticity (even higher than that generated by the Boger fluid in all the experimental runs analyzed), descending to values near the Newtonian reference. The Boger fluid the effect of the first normal stress difference in shear occurs in a relatively small range of shear rate values; the elastic effect in the radial direction is quickly exceeded by that extension in the flow direction, although higher than the reference values.

The EPD ratio versus the pressure drop generated by the hyperbolic geometry (figure 6-d) provides a more explicit way to quantify the degree of competition between shear and extensional flow, since it considers the variation of the shear viscosity of the fluids with the shear rate, and shows the areas of shear and extensional predominance not entirely clear in the previous graphs. The HASE solution experiences obvious competition between extensional and shear flows and the areas where one or the other type of flow is dominant are clearly recognizable. However, the

recorded values are lower than those developed by the 2:1:2 and 3:1:3 contraction ratios.

Extensional viscosity vs extension rate

The extensional viscosity values again show a downward trend as the contraction ratio increases; the extensional flow is increasingly hampered by the development of shear flow. Further experimentation is necessary to determine whether the maximum point present in the case of Boger fluid represents the maximum extension developed by the fluid in this contraction relationship (Figure 6-e).

Contraction 5:1:5***Total pressure drop vs shear rate***

For the last contraction ratio to be analyzed in this work, which presents the smallest dimensions in both length and cross-sectional area, in the case of the total pressure drop (figure 13-a), the absence of behaviors close to the Newtonian fluid line and, therefore, there is no critical shear rate to apply in this case. The absence of a critical shear rate is caused by a bias in the flow interval caused by the operating limitations of the experimental device, which does not allow knowing with certainty the flow dynamics zone where the exposed values are found.

The shear effect generated by the geometry is of such intensity that it takes the line of the HASE solution below the Newtonian line, since under these conditions its shear viscosity is much lower. The Boger fluid experiences a proportional rise throughout the experimentation interval, with behavior like that analyzed in the previous contraction ratios at high flows (outside the critical zone)

Excess pressure drop vs shear rate

For the EPD and dimensionless EPD graphs (figures 6-b and 6-c), the development of the extensional flow by the two fluids is observed, where the curve generated by HASE is smaller than due to the shear viscosity changes developed, and where the Boger fluid shows an upward trend as the flow increases. The location of these values with respect to the previously exposed zones of flow dynamics is unknown.

Dimensionless excess pressure drop vs shear rate

When analyzing the dimensionless parameter $\Delta P_e/\Delta P_c$ (figure 6-d) it shows that, although the hyperbolic contraction zone generates extensional flows of considerable magnitude, the shear effects generated in response are also increased, decreasing the extensional effect when increasing the flow. This behavior is reflected in the change in trend of the lines in figure 5-d with respect to those generated in figures 6-b and 6-c. The $\Delta P_e/\Delta P_c$ ratio represents a more

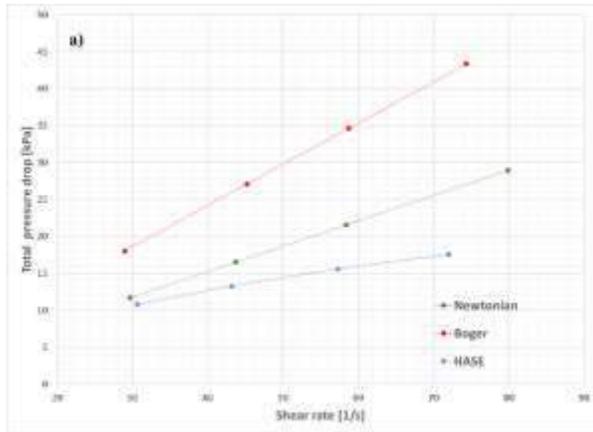


adequate way to represent the competition between shear and extensional flows with respect to dimensionless quantities used in previous studies.

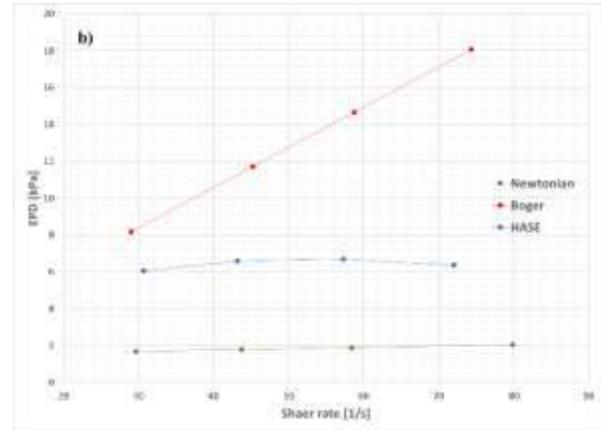
Viscosidad extensional vs rapidez de extensión

The extensional viscosity (Figure 6-e) decreases slowly with increasing flow. It is interesting to observe the behavior of the shear and extensional viscosities for the fluids Boger and HASE (figure 6-f) have a similar trend.

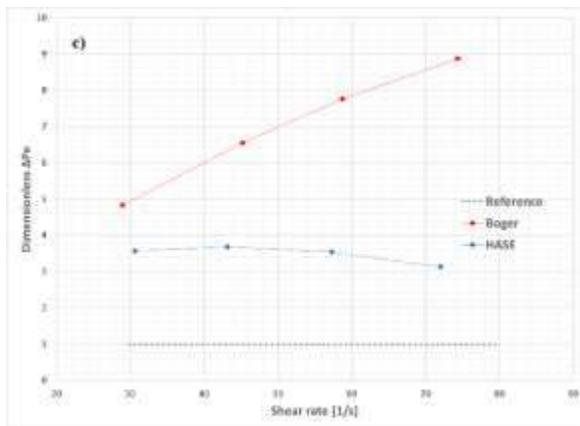
FIGURE 6. EXPERIMENTAL RESULTS - CONTRACTION/EXPANSION 5:1:5



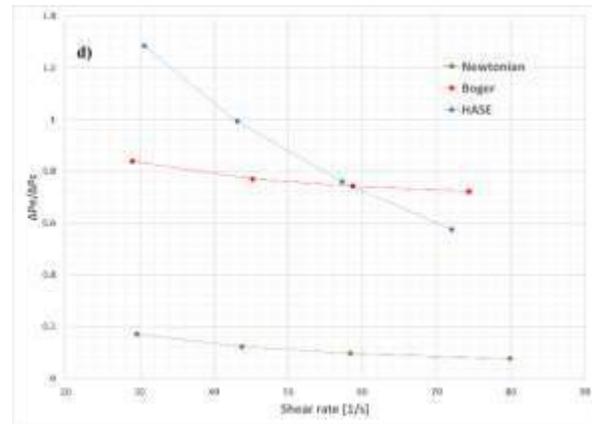
a) Total pressure drop vs shear rate



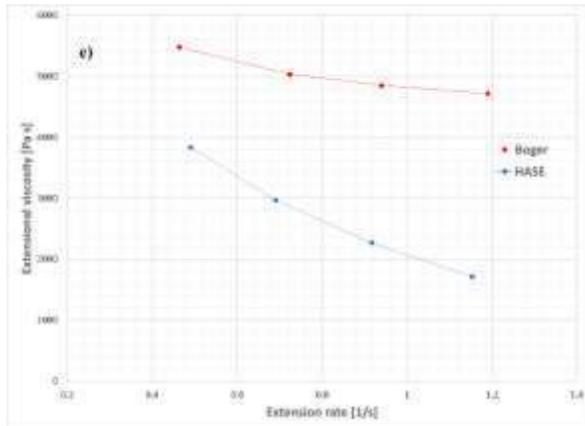
b) EPD vs shear rate



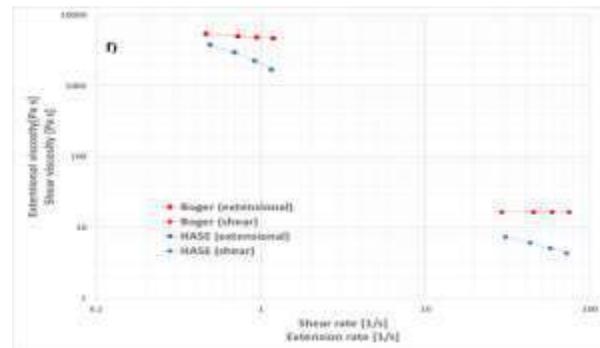
c) dimensionless EPD vs shear rate



d) ΔPe/ΔPc vs shear rate



e) Extensional viscosity vs extension rate



f) Extensional/shear viscosity vs extensional/shear rate

CONCLUSIONS

The Hagen-Poiseuille type theoretical expression in a system in hyperbolic contraction/expansion predicted with great precision the value of the pressure drop (especially at low flows, where no additional effects are present), in the same way, the value of the Excess pressure drop (EPD), represented the elastic component of the analyzed fluids, which allowed us to recognize the competition between the extensional and shear flow.

For low contraction ratios (such as 2:1:2 and 3:1:3) there was a flow dynamics defined by three main zones:

at low flows, there is a predominance of shear flow, due to the development of an elastic response in radial direction by the fluids. The effect of the first difference of normal stresses in shear becomes evident, appearing more clearly than in the case of sudden axisymmetric geometries.

The second zone extends from the critical shear rate, where the extensional flow occurs with greater intensity (which is also expressed in the pressure drop), up to a maximum point, related to the maximum extension of the fluid element. this zone tends to decrease as the contraction ratio increases.

The last zone once again presents characteristics mainly of shear flow, related to the interactions of the fluid with the walls of the contraction. The shear effect on the flow causes changes in the viscosity in the specific case of the HASE solution, where this behavior, beyond being caused by the competition initially posed between the extensional and shear flows, is considered a direct consequence of the shear flow.

For the large contraction ratios (4:1:4 and 5:1:5), the operating limitations of the equipment prevented the previously exposed areas from being fully

observed, restricting themselves to limited sections of them. A proportional trend is observed when increasing the contraction ratio of the extensional and shear effects, where the latter are those that impose their characteristics on the flow.

The extensional viscosity values obtained were of an order like those reported in the literature, and their behavior faithfully represents the ranges of flow dynamics previously exposed, increasing the value of this property drastically in the extensional zone.

Some of the main future achievements of this work lie in the extension of the equipment's operating interval, which will allow the flow dynamics to be analyzed with greater accuracy in high contraction ratios, as well as to analyze experimental cases outside the steady state (as can be the pulsatile flow), and to be able to approach real flow situations.

Acknowledgments

This research work had the support of the Support Program for Research and Technological Innovation Projects (PAPIIT) UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO Mexico <<IA106818>>

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SYMBOLOLOGY

$\underline{\underline{D}}$	Strain rate tensor (vector notation)
D_1	Diameter before contraction
D_2	Diameter after contraction
L	Tube length
N_1	First difference of normal stresses
Q	Volumetric flow
r_1, r_{max}	Radius maximum before contraction
r_2, r_{min}	Radio minimum after contraction
$\underline{\underline{T}}$	Stress tensor (vector notation)
V_1, V_2	Sensor voltages
$\underline{\underline{W}}$	Vorticity (vector notation)
$\dot{\gamma}$	Shear rate
ΔP	Pressure drop
ΔP_T	Total pressure drop
ΔP_c	Pressure drop in contraction zone
ΔP_e	Excess pressure drop (EPD)
Δv	Velocity gradient
$\dot{\epsilon}$	extension rate
ϵ_h	Hencky's extension
η	Shear viscosity
η_e	Extensional viscosity
μ	Newtonian shear viscosity
τ_{zz}, τ_{xx}	Normal components of the stress tensor



CONDITIONS AND PROBLEMS ORGANIZATION OF ECONOMIC ACTIVITY IN SANATORIUMS AND RESORTS OF UZBEKISTAN IN THE YEARS (1921-1952)

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ABSTRACT

This article describes the conditions in the sanatoriums and resorts of Uzbekistan, as well as the organization of economic activities and the existing problems in this process. In particular, the conditions of a number of sanatoriums and resorts "Shakhimardan", "Pedov", "Chimyan", Hazel("Orekhovaya Roshcha"), "Yalangach", "Vodil" and others in 1921-1952 were analyzed.

KEYWORDS: *Sanatorium-resort, Shakhimardan, Pedov, Chimyan, Hazel (Orekhovaya Roshcha), Yalangach, Vodil, Aktash, Balandchaqir, Khoja Silk.*

DISCUSSION

On December 15, 1921 the Council of People's Commissars of the RSFSR and the Central Executive Committee of the People's Commissariat of Health of the RSFSR gave the right to do[1]. The resolution also provides for the allocation of a reserve land fund when allocating land for resorts.

It is expedient to periodically analyze the sanitary situation in the resort "Shakhimardon". In the first years of its existence, Shakhimardon, the first resort in Uzbekistan, did not have a district to protect it. The water supply of the resort is provided by springs. These springs were located outside the resort area. Therefore, no one was responsible for protecting these springs from pollution. The need for sanitary protection of the resort "Shakhimardon" was also due to the fact that it is located between two villages - Shakhimardon and Jordan. In particular, the village of Shakhimardon is a large village, where many people, including patients, come from Fergana in the summer. The distance between the village of Shakhimardon and the resort was 1.5 km. In addition, there was a breeding ground for mosquitoes along the White River, which flows through the resort area, which increased the risk of developing malaria. Therefore, there was a need to take measures to improve the sanitary condition of the resort area and surrounding areas. These areas are protected by the

county without the consent of the Ministry of Health, including deforestation and orchards, digging ditches, pits and wells, as well as mining natural resources, blocking water sources, establishing waters and lakes, planting rice, establishing factories and plants, It is forbidden to carry out various constructions[2].

Shohimardon resort was built in the early 1930s, where fruit trees were cut down and there were no shady places due to the lack of trees in the area. Since 1934, trees have been planted and a flower garden has been established in front of the main building of the sanatorium [3].

In 1935, as a result of water supply and bacteriological study of the Shohimardon resort, the water flowing from the Dugoba River at the head of the canal, behind the village of Yordan (140 farms, a village of 625 people), was clean and polluted before it reached the resort. This pollution was caused by the dumping of waste in densely populated villages [4].

That is why low quality water flowed to the resort. These data indicate that the supply of drinking water to the resort is unsatisfactory. On top of that, if we also take into account the bathing of the healers and vacationers in this water, we can see that it is in a much worse sanitary condition.

The accommodation of the resort consists of 8 houses, in the main building there are places for 180 people, in the 1st building there are 250 places, in the



2nd building there are 20 places for patients with open tuberculosis. Along with the laboratory and pharmacy, an administrative building, apartments for staff, 2 buildings for utility services in the kitchen were built. On the ground floor of the main building there is an X-ray machine, an X-ray laboratory and a physiotherapy room. The wards were designed for 2-6 people and each had 8 square meters of space. They needed enough light and fresh air. The living room, kitchen, hallways, decorated with flowers were clean, beautiful and comfortable. There was a flower garden in front of the main building and a fountain was installed in the middle of it. The resort is also supplied with electricity, ie connected to a hydroelectric power station. Only patients with pulmonary tuberculosis were treated at the resort[5].

The resort also had cultural facilities, including a sound cinema. In addition, artists, musicians, singers from Fergana and Tashkent were invited, performances were staged, various evenings were organized and lectures were given. Sports games are also organized. In addition, the resort had a library with about 1,000 books in Russian and Uzbek. The library subscribes to magazines published in Moscow and Tashkent. The resort was open from May 1 to November 1. On the other hand, its climatic conditions allowed it to work all year round, but the lack of a stone road from Fergana prevented it from working all year round[6].

In 1928, some buildings of the Chimgan sanatorium in the Tashkent region fell into disrepair. The wall of the building was made of raw brick, which was cracked and in danger of collapsing. The commission that inspected this sanatorium proposed closing it in 1928 and relocating its patients to another building[7].

In Pedov, none of the buildings built by Bunin in 1936 have survived, and only a few of the 12,000 trees he planted have survived, and the rest have been used for firewood. The results of metrological observations made by experts of that period show that the hottest month here was July, when the average temperature was 27 degrees. Also, in January, which was considered the coldest month, it was 3 degrees. In addition, there was no strong wind like in other places in the Fergana Valley. There was dry air in Pedov, especially during the summer, and the annual rainfall was 200 mm. These cases indicate that there is a need for trees in the sanatorium. Malaria is common along the Sokh River. In this area, bull disease was prevalent among the population. The proximity of Rishtan to Pedov helped the resort to provide dairy, meat, vegetables, fruits and the necessary manpower [8].

The building of the sanatorium "Orekhovaya Roshcha" was built to the required level and equipped with the necessary equipment. The sanatorium had an X-ray room, a clinical laboratory and a surgery room. One of the disadvantages of this

sanatorium was its proximity to the road and pollution from passing vehicles. Therefore, in the mid-1930s, the issue of closing this road was raised [9].

Children's TB Sanatorium No. 1, located at 16 Krupskaya Street, Andijan, was established in 1934. The sanatorium is located on the outskirts of the city and has a land area of 1.5 hectares. Its territory was well landscaped, with many flowers, playgrounds and sheds for recreation. The sanatorium building has 580 square meters, of which 173 square meters are divided into wards and the wards are exposed to sunlight. There were a total of 6 wards, one of which was reserved for patients with meningitis. There was also a spinal function operating room. There was also a separate kitchen, room for play and a 4-bed isolator, but no quarantine department [10].

In 1935, a water supply system was laid from Surkhandarya to Hava Mountain. There was a laboratory, a shop, barracks for workers, and repair shops. In 1936, fresh water had to be brought 18 kilometers from the Kogitang River to provide drinking water to patients at the Khoja Ipak resort. Water for household needs is supplied from local water sources. In order to get to this water source from Dehkanabad, it was necessary to widen, clear, level and build a bridge with a distance of 51 km. The food supply of the resort was provided by the villages of Kogitang and Dehkanabad, as well as by the resort's own farm. From an epidemiological point of view, the proximity of water sources is recognized as good. However, the lack of fresh water led to the conclusion that the area could not be used for the construction of a balneological resort [11].

Among the sanatoriums close to the city is the Naked Tuberculosis Sanatorium. It is located 6 km north of Tashkent and had a very large orchard. The sanatorium consists of a two-storey terraced building, which allows patients to spend their time in the fresh air during the day during the summer. Next to the corpses where the patients lived, there were carpentry, metalwork, cover, and basket-making workshops. These workshops gave patients the opportunity to change their profession as needed. According to experts of that time, this labor process gave effective results in the treatment process. This sanatorium served patients all year round and had 50 beds[12].

The Aktash resort has treated 200 people in one course. Patients were housed in three two-story wooden buildings and seven two-bedroom cottages. Each building had 34 rooms for 2-4 people. It is also connected to the mains to provide electricity. At the spa, water, air and sun served as healing factors. The health center had an air hospital, an electric and light hospital, a hydrotherapy room and a swimming pool. For hydrotherapy, the water is heated using a solar device. There was also a clinical laboratory at the Aktash resort. In Aktobe, the treatment season lasted



from May 15 to September 15 -5 months, and the course of treatment was one month [13].

In the 1950s, the Vodil sanatorium had four dormitories for 260 people. There is also a winter building built in the local type, where the staff lived. As there was no winter building in the sanatorium, the children were placed in the building where these employees live. This did not meet the sanitary requirements at all, and the regional sanitary station was against placing children in this building. All the buildings in the sanatorium were in need of capital and current repairs. Beds are placed in the gardens during the summer. The sanatorium was forced to rent out private apartments due to lack of accommodation for medical staff. So the sanatorium staff wrote a letter to the Ministry of Health in 1952 asking for a house. But their requests are denied. The kitchen in the sanatorium consisted of four rooms, which also needed major repairs. The sanatorium had a confectionery shop where bakery products were made. Because the sanatorium did not have a place to eat in the winter and summer, the children were forced to eat under the vines in the summer and in the beds in the winter. The land area of this sanatorium is 3.45 hectares and is located 0.5-1 and a half km from the district center and the collective farm. The air here was fresh mountain air and the sanatorium area was far from transit roads. It was extremely difficult to get here in the spring and winter months. The sanatorium used running water as drinking water, had no sewer pipes, and was electrically lit. The sanatorium's 35-acre subsidiary farm allowed it to provide enough fruit. There was also a livestock farm on this subsidiary farm, but the children were not adequately provided with milk due to the lack of dairy cows. This sanatorium is supplied with food by the city food trade. The children in the sanatorium lacked outerwear and underwear, shoes, and bedding. There was also a lack of chairs, beds, wardrobes, bedside tables, kitchen furniture and dishes. Despite repeated appeals to the Procurement Department of the Ministry of Health and the regional health department, these items were not provided. There have been interruptions in the supply of medicines, especially penicillin, fish oil, and alcohol[21].

By the 1950s, the need for spa treatment had increased significantly due to the development of industry and agriculture in the world and the relatively high standard of living of the population. In addition, the accommodation in the resorts, their equipment, sanitation, roads, vehicles required radical improvement[22].

In the 1950s, the provision of children's sanatoriums with equipment, especially bedding and bedding, increased. However, all sanatoriums lacked warm clothes and shoes, kitchen utensils and furniture during this period. The sanatoriums did not have equipment such as carpets, curtains, mirrors. Most importantly, most of these sanatoriums do not

have X-ray machines and physiotherapy rooms, such as Balandchakir sanatorium in Tashkent region, children's sanatorium No. 1 in Andijan, Gova sanatorium in Namangan, sanatoriums in Khorezm and the USSR[23].

In 1953, in the children's tuberculosis sanatorium "Orekhovaya Roshcha" was allocated 8 rubles 24 kopecks per child per day, the daily food norm was set as follows: 75 g of cereals, 400 g of potatoes, 350 g of vegetables, 60 g of sugar, 180 g of meat and fish, 500 g milk, 20 g butter, 40 g melted butter[24]. The food in this sanatorium is of high quality and delicious. There are no cases of food poisoning in this sanatorium. The dietitian and nurse were responsible for arranging the meals. In addition to the common table, separate tables have been set up for children with kidney disease and gastrointestinal disease, as well as for children who need a strong diet. In 1954, in general, the sanatorium was satisfactorily supplied with food. However, 17,470 kg of potatoes and 78,558 eggs were harvested less than needed. During the winter, patients were provided with fish oil, juice and vitamins 2 times a day[25].

Food supply of sanatoriums in Uzbekistan was entrusted to the regional Food Trade. This work was not carried out by a private commercial establishment, which had a negative impact on food supply. In particular, there were interruptions in the supply of meat, butter and fish. Condensed milk, salmon and poultry were not brought in at all. In 1952, no sanatorium received a single kilogram of potatoes from the state supply. Despite repeated appeals to the Ministry of Trade of the Uzbek SSR about the poor state of food supply to sanatoriums, they were unsuccessful. 16 rubles 78 coins allocated for the treatment of patients with tuberculosis was not enough[26].

The children's sanatorium in Andijan, which specializes in the treatment of tuberculosis, was designed to accommodate children between the ages of 3 and 16. In 1953, children were treated at this sanatorium using movement, water therapy and aerotherapy. The sanatorium had a physiotherapy room and a pneumothorax room. However, due to the lack of an X-ray machine, the regional TB dispensary apparatus was used. It was located next to the dispensary. Although the food supply was satisfactory, the type of food was the same. In 1953, potatoes were not delivered to the sanatorium at all, and 10 and a half thousand eggs and 1,400 kg of meat were received less than the specified amount. Butter is sometimes replaced with melted butter or lard. Sour cream and cottage cheese are rarely obtained. Several appeals were made to the provincial executive committee and the party committee regarding the inadequacy of food supplies, but this appeal went unanswered. The sanatorium was not adequately equipped with beds and bedside tables, as



well as tables, chairs, and bookshelves. The children also lacked outerwear and shirts. The medical base provided the sanatorium with satin underwear, but knitted underwear was not brought in at all outerwear, not given at all, from shoes are sometimes given rubber slippers for teenagers[27].

Children's bone tuberculosis sanatorium of Namangan region is located in Uychi village of Uychi region, 18 km from Namangan city. Although this sanatorium is a children's sanatorium, in fact, 52% of the patients were under 18 years of age, while 48% of the patients were between 18 and 45 years of age, i.e., adults. The sanatorium was designed for 50 beds, and in May-October 1953 the sanatorium treated 74 patients. The sanatorium was located in the Uychi district hospital and had 10 wards. It had no plumbing, sewer, and electric lighting systems. Built in 1936, the sanatorium used 12 furnaces to heat the building. This sanatorium also did not have an X-ray room, so the Namangan Tuberculosis Dispensary and the Namangan Regional Hospital used X-ray rooms. During the summer, the sanatorium also had a dental office [28].

In the city of Andijan, the land of the 3rd children's sanatorium was 0.5 hectares, which had an orchard and a sports field. The main building consisted of 5 rooms, 2 kitchens, an insulator and a chief doctor's office. In 1957, a 60-square-meter hall, a 12-square-meter laboratory and an 8-square-meter toilet were built. There was also an 80-seat shed for relaxing in the fresh air, a summer kitchen and tables for playing board games. The sanatorium was electrically lit and heated by a coal stove, which had no running water or sewage. In addition, the sanatorium is not adequately equipped. Due to the lack of an X-ray machine, it used the apparatus of the regional primary dispensary, which is located three kilometers away. Here, too, the children were fed 5 times. Products are often brought in fresh condition and in sufficient quantities. The sanatorium organizes physical education, drama, choir, chess, billiards, volleyball sports and handicraft clubs. Films were also shown at the expense of parents. The sanatorium also had a library. The sanatorium was hampered by the lack of an X-ray machine, insufficient usable space, and the lack of plumbing and gas. In addition, a car was needed to transport food and transport patients [32].

The sanatorium in Namangan, Namangan region, consisted of seven rooms. On average, one child had 1.5 square meters of space. The sanatorium is heated using Dutch stoves and lit by kerosene lamps. In the summer, insufficient ventilation was used as well as drinking water. The sanatorium also did not have a laboratory, X-ray, dental treatment, physiotherapy rooms, a room for carrying out bonding work, a porch and a disinfection chamber. The kitchen of the sanatorium consists of one room and is adequately equipped [33].

In 1950-1952, the Namangan Regional Tuberculosis Dispensary was repaired and the Children's Tuberculosis Sanatorium was relocated there. Prior to that, it was located in the same building as the kindergarten. In the 1950s, a sanatorium for adults with tuberculosis was not established in the Namangan region[34].

In the early 1950s, there were 4 children's tuberculosis sanatoriums in Fergana region, and the TB sanatorium in Fergana had a well-planted area, many fruit and ornamental trees, and flower gardens. This sanatorium was fully equipped with the necessary equipment. The children's food supply was satisfactory, they weighed an average of 1.3 kilograms. In 1952, a bathhouse, shower and laundry room were built in the sanatorium funds allocated. In the summer, children are outdoors with a day off, with playgrounds, kitchens and even sleeping areas set up for them. However, this sanatorium was not well equipped and they were in a state of disrepair. Also, the children in the sanatorium were not well provided with outerwear and underwear, hats, and shoes. Sanatorium No. 2 in Kokand also lacked outerwear and footwear for children[35].

In short, the development of the activities of sanatoriums and resorts depended on the organization of economic activities in health facilities and the issue of personnel.

Sources indicate that the conditions in the sanatoriums and resorts established in the early years of the Soviet era were insufficient. In particular, one of the biggest problems was the issue of providing sanatoriums and resorts with clean drinking water. In the 1920s and 1950s, most sanatoriums used mainly spring and canal water as drinking water. These water sources were used not only by these institutions, but also by the population of the region. In some cases, this has led to pollution of springs and streams. Although attempts were made to bring tap water to sanatoriums and resorts during the study period, most of them failed. According to experts of the time, the main reason for this was the fact that sanatoriums and resorts were located far from mountainous and tap settlements. After the 1950s, positive progress began to be made on this issue[36].

Sanatorium and resort buildings were in poor condition in the early years of the Soviet era. Because these buildings were first the dormitories of the employees of some organization and later used them as a sanatorium building. In addition, most of the buildings were built of straw and raw bricks, and the construction quality was not good. However, due to the small size and number of buildings of this type, the number of visitors during the winter has decreased. During the summer, special beds are arranged in the courtyards of health resorts.

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TECHNOLOGIES OF END-TO-END PEDAGOGICAL TESTING IN THE UNIVERSITY

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ABSTRACT

This article considers the technologies of pedagogical testing in the university from the scientific and methodological positions. Attempts have been made to reveal the innovative potential of pedagogical testing in the process of its technologization; It also shows the methods of implementing the functions of test control at each of its stages, offers recommendations for organizing the forms of test control.

KEYWORDS: *pedagogical testing, classification of pedagogical tests, innovative potential, forms and functions of test control, requirements for pedagogical tests.*

DISCUSSION

In modern conditions of the globalization of education, the orientation of educational institutions to world standards, the problems of developing scientifically grounded methods and technologies for monitoring and assessing students' knowledge are actualized. The most optimal and reliable tool for controlling the knowledge of students of higher educational institutions is testing. The problem of the development of pedagogical testing requires the creative mastery of the richest achievements of world testology, an active search for innovative approaches, the development of high-quality, standardized pedagogical tests, the improvement and diversity of their functions, forms and composition. Uzbekistan summarized the advanced experience of foreign countries in the testing system, taking into account its national traditions and regional characteristics, and was the first among the CIS countries to apply the testing system at the state level [1,138].

Meanwhile, in the pedagogical practice of universities, there are monotonous, stereotyped forms of test control, the dominance of test tasks with the choice of the only correct answer, which inhibit the cognitive activity and educational motivation of students. Insufficient attention is paid to the issues of forms, types and kinds of test items, which are often used as equivalent, there is a mixture of forms and types of test items, their scientific classification is poorly developed, there is no clarity in the formulations of the conceptual apparatus, which, in general, undeservedly discredits the test method.

In the practice of monitoring and diagnosing learning, pedagogical tests are presented in the following varieties: tests of educational achievements, tests of success, didactic tests, teacher tests, non-standard programmed (adaptive), integrative, predictive tests.

The most common form of control is norm-oriented achievement tests (comparison with indicators of the results of tasks of other respondents). Norm-oriented achievement tests are widespread in the USA and Germany and are effective at the entrance and final control of students' knowledge. It is advisable to combine achievement tests into test batteries and track the dynamics of learning "knowledge, skill, qualification", which in the future will make it possible to obtain a student's performance profile in various subjects.

Criteria-oriented tests correlate with the qualitative characteristics of the content of the task (test). Criteria-oriented tests allow you to successfully combine testing, interpretation of results and correction of the course of training. When compiling this type of test, it is necessary to clearly identify the area of knowledge and skills it measures.

The very name "adaptive test" speaks of an adaptive model of providing a favorable, comfortable educational environment for the individual, the implementation of the principle of humanization in the context of student-centered learning. The development of adaptive tests is based on the idea of rationalizing the actions of the subject and differentiating his or her abilities, implemented through an automated system that regulates the



dosage of test tasks depending on the degree of assimilation of knowledge by students. The difficulty level of the adaptive test is evaluated empirically with the subsequent formation of a bank of tasks with control algorithms in training. (2). In the context of the above, the principle of individualization of training is actualized, taking into account the degree of development of abilities, temporal characteristics of a person. The application of adaptive tests determines the natural choice of an individual trajectory of self-control in learning with a gradual approach to the standard level of knowledge. This test is an element of programmed learning and is performed on a computer. Let's give an example of an adaptive test. Carefully read the material in Box 1 and choose the answers you think are correct. Follow the instructions.

1. General didactics by its research covers:

A) All subjects and levels of study.

B) All subjects and only one specific level of instruction, for example, junior elementary school.

C) One subject, the content of which is revealed at all levels of education (including university).

If you chose answer A, go to Box 3; B - go to box 2; C - Go to Box 4.

2. You probably equate general didactics with elementary teaching methodology or with higher education didactics. Go back to Box 1 and look for the correct answer.

3. Very good. Go to the study of § 3.

4. The answer is wrong. The study of the process of teaching one subject, but at all levels of its study, is the subject of private, not general didactics. Go back to box 1 and choose the correct answer.

The undoubted advantages of the adaptive test are the flexibility and accuracy of the methods of diagnostics of learning, the economy of time (a strong student receives fewer questions, which means less time spent), tracking gaps in knowledge and self-correction. Unfortunately, the stage of preparation for the adaptive control of knowledge is rather laborious and involves technical difficulties.

In pedagogical theory and practice, the most productive are closed, open forms of test

assignments, as well as assignments for setting correspondence and ordering the sequence.

The closed form of the test assignments involves choosing the correct answer from among the proposed ones.

The reliability of closed tests is achieved primarily by their clarity, consistency, laconic formulation, the interaction of content and form, as well as the presence of plausible answers - distractors. There must be at least four of them. In our opinion, a closed test with several correct answers has a high diagnostic, cognitive, and motivational value. For instance:

From the listed names, select those that determine the formation of the content of the educational process.

These are: 1) goals; 2) consumption; 3) social and scientific achievements; 4) parents' wishes; 5) social needs; 6) personal needs; 7) opportunities; 8) teaching methods; 9) teaching principles; 10) pedagogical intentions.

Answers: 1, 3, 5, 6, 7.

Open tests stimulate the search activity of students and contain great potential in the development of cognitive and creative abilities of the individual, as well as mental processes of memory, thinking, imagination. There are two types of open tests: filling a gap with one word or a detailed answer. Specialists have defined a number of rules for developing and conducting open test assignments:

- In each task it is desirable to have one addition;
- It is required to supplement the most important word (key term);
- The question should be formulated clearly and not allow ambiguous interpretation;
- The dash must be as long as the word to be added.

Due to the high cognitive, motivational value of open tests, they should be more widely used at the stage of current control when working out new topics, terminological concepts, categories, forming individual skills, determining the quality of lectures and seminars.

Insert the missing word:

1. The process and result of quantitative and qualitative changes in the human body is _____ (answer: development).

2. The education of blind children is dealt with by such a branch of pedagogy as _____ (answer: typhlopedagogy).

3. Scientifically formulated experience of transforming the pedagogical process in precisely considered conditions is _____ (answer: experiment).

4. _____ test assumes the availability of answer options (answer: closed).

5. The experiment is carried out to confirm _____ (answer: hypotheses).

Tests for matching elements of one set to elements of another. The number of test items on the left and right side of the table should not be the same [4,131] for example:



What type of governance do the educational systems of the world belong to?

1.	Centralized systems	A.	France
2.	Decentralized systems	B.	China
		C.	The UK
		D.	The USA
		E.	Russian
Answer:	1 -	2 -	

Answer:	1 - ABE	2 - CD
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The test for establishing the correct sequence is mainly used to assess the level of professional readiness, the sequence of stages of the

subject's actions. For example: Determine the correct sequence for the location of needs in Maslow's hierarchical pyramid.

	Types of needs	Numeration
	<ul style="list-style-type: none"> security needs; 	
	<ul style="list-style-type: none"> need for respect; 	
	<ul style="list-style-type: none"> physiological needs; 	
	<ul style="list-style-type: none"> the need for self-actualization; 	
	<ul style="list-style-type: none"> need for communication 	

Control stages

The researchers determined the functions of test control: diagnostic, upbringing, training, developmental, prognostic, ascertaining, orienting, educational, function of providing feedback, training function, repetition function, etc. Unfortunately, these features are descriptive and conclude with general guidelines. It seems to us that each stage of the test control should perform specific functions. So,

in a higher educational institution the sequence of presenting test items is presented as follows: entrance: at the beginning of training; current: during the training period; midterm: at the end of the study of the section, topic; final: upon completion of the discipline;

The table offered by us shows the strategic directions and functions of the test control at different stages:

	Control stages	Forms of control	Control functions
1.	Entrance control	Pretests that match the content of the final tests	Revealing basic knowledge, skills and qualities; tracking entry level knowledge
2.	Current control	All types of tests, including thematic, training, adaptive, programmed criterion-oriented tests in the process of an independent classroom, including homework	Developing, formative, training function, providing feedback with subsequent analysis and correction of gaps in students' knowledge
3.	Mid-term control	When controlling the assimilation of topics, sections of the program, an open form of test tasks is preferable.	Revealing the degree of assimilation of sections of the program, interpretation of results
4.	Final control	It is advisable to use normative-oriented tests. Obtaining a profile of trainee indicators	Statement. Assessment of student and teacher results; comparative analysis with pretest results



Thus, the effective data of all stages of pedagogical testing can be the basis for building a profile of the student and testify to the dynamics of knowledge acquisition in each subject. End-to-end continuous pedagogical testing during training is the most important feature of pedagogical technology. According to V.S. Avanesov, test tasks can be attributed to the technology of active (3) learning. It has a high innovative potential, which is realized in the process of its technologization: the development of a scientifically grounded concept, adherence to the principles of consistency (integrity, structuredness of pedagogical tests of their homogeneity), controllability (certain stages, procedurality of pedagogical actions, operations in accordance with goals and predicted results), individualization and differentiation of training, providing feedback (continuous monitoring of the dynamics of knowledge), reproducibility (the possibility of repeating the algorithm of technological operations). Knowledge of the stages, forms and functions of test control, compliance with their sequence by the teacher can contribute to the high-quality, deep assimilation of knowledge by students and the development of their skills.

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PSYCHOLOGICAL PECULIARITIES OF INTERCONNECTION OF INCLINES AND INTELLECTUAL ABILITIES AND ITS DEVELOPMENT IN ADOLESCENCE

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ABSTRACT

The relevance of research on the psychological activity of inclinations is determined primarily by the great practical significance of this problem. In general, a not clearly differentiated desire to engage in any specific activity is a characteristic feature of the personality of adolescents. The complex process of professional self-determination, in all likelihood, includes the development of the intellectual capabilities of adolescents, in particular, self-knowledge. Our data, in a sense, allow us to approach this issue as well.

The value of the work lies in the fact that the research results contribute to the development of the scientific foundations of professional self-determination. We believe that the results of the study are significant for the development of early manifestation and development of inclinations in adolescence, as well as career guidance in school and other educational institutions, in order to effectively determine the students' activities.

KEY WORDS: *human abilities and inclinations, psychological prerequisites, human factor, “external through internal”, “internal conditions”, natural prerequisites, motivation. A person's natural tendency or urge to act or feel in a certain way.*

DISCUSSION

Psychological research of inclinations involves consideration of the relationship between inclinations and intellectual capabilities, as well as the expression of needs, the selective activity of the subject. The professional orientation and preparedness of the individual for professionally active activity, in all likelihood, interdependent each other. The professional orientation of a person is manifested in her interests, inclinations, beliefs, ideals, as well as in intellectual capabilities.

It is known that the majority of schoolchildren in adolescence are not able to independently and adequately choose a profession. At the same time, among adolescents, you can see children who are already serious, selectively regarding their future occupations, they seem to listen to themselves, to their needs. However, even by the ninth grade, most students cannot say for sure who they would like to become, although very many of them already have preferred types of activities, favorite subjects. But their hobby desires are not very clear, they often lack awareness of the world of

professions. This is understandable, since life itself has not yet confronted them with the need to choose occupations, and the position of teachers and parents is rather little self-determined, which means for adolescents, because they still do not know enough what certain professions require from a person and what needs to be done in order to master them. For their professional self-orientation, most students are in dire need of help from psychologists, teachers, popularizers of professions; a variety of information is needed, revealing, in particular, the psychological content of professions.

In the process of personality formation, an essential place is occupied by professional self-determination. Professional inclinations, vocationally oriented towards the desired field of activity, of course, are inextricably linked with the content aspects of the personality, its motives and social attitudes. All students face a difficult task - who to be, where to go. The professional future of a person largely depends on its decision.

According to recent studies, the majority of students are not guided in their



capabilities, they are rather carried away by the external side of professional activity. Psychological counseling for the majority of students "opens their eyes" to themselves, to their capabilities. And at the same time, there are students who more or less correctly realize themselves, and accordingly choose certain types of professional activity with their psychological and psychophysiological data. [1]

It should be emphasized that the success of work largely depends on its compliance with inclinations. Labor activity sets certain requirements for a person, and usually those people who have favorable psychological and psychophysiological prerequisites for these occupations work more productively, it is easier for them to learn a job, they are more likely to advance in the basis of high levels of skill. It was established by K.M. Gurevich, there is a profession with severe requirements for a person, for his endurance, reactivity or other psychological qualities - such professions are not available to everyone, in these cases people are selected according to their psychophysiological capabilities. Therefore, knowing oneself allows one to navigate more correctly in a variety of types of occupation, makes possible a more optimal set of profession. Of course, the choice made by a teenager does not mean the end of professional self-determination. Even within a firmly chosen profession, a person is looking for "his own methods of work, develops his own individual style" for a long time [2].

N.S.Leites writes about children "With the early dawn, abilities provide very significant material for the problem of "Inclination and Ability". The inclination is this disposition to reality, the desire to deal with it. The severity of the need for activity characterizes the dynamic side of

inclinations, an increase in the propensity for mental activity"[3].

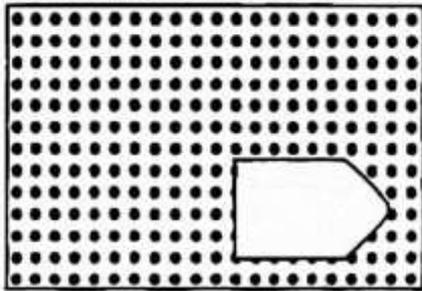
B.R.Kadyrov experimentally shows the idea of V.N.Myasishev, the tendency seems to be ahead of the abilities and is one of the important factors in the development of inclinations and gives a positive emotional coloring to mental activities, increases efficiency and awakens dormant forces [4].

In general, not clearly differentiated desire to engage in any specific activity is a characteristic feature of the personality of adolescents. The complex process of professional self-determination, in all likelihood, includes the development of the intellectual capabilities of adolescents, in particular, self-knowledge.

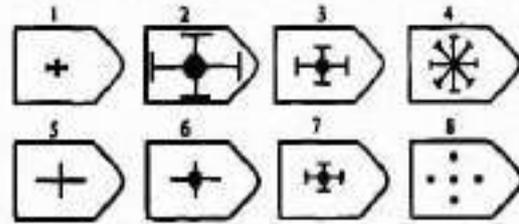
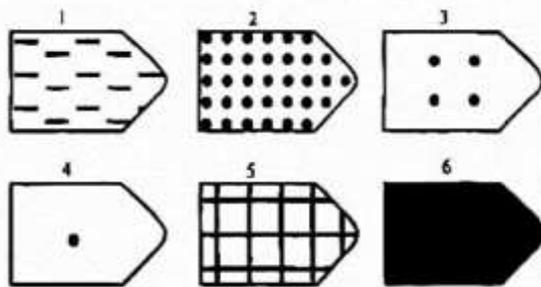
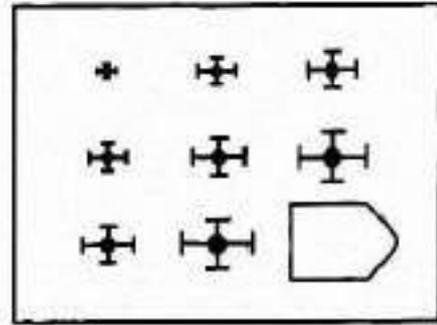
Our data, in a sense, allow us to approach this issue as well. To this end, all of our subjects passed the Raven's Progressive Matrix IQ test was developed in 1936 and was originally intended to study perception and its properties. This test is based on Spearman's theory of regeneration, as well as Gestalt psychology's theory of form perception. In the course of working with this test, it was discovered that there are 3 main thought processes that can be used to solve the problems that make up it. They consist of attention, contemplation, perception. When solving problems in the Raven tables, an important role is played by the activity of attention, its adequate volume, and distribution. At the same time, attention is a factor of cognition, according to which cognition creates a certain institution (program) of production activity.

Using the Raven test, researchers measure not only intelligence, but also the ability to relate to intellectual activity.

Light 1 pic.



Complex 2 fig.



The test consists of non-verbal questions. The test consists of 60 tables, divided into 5 series. In each episode, the problems become more complex.

The relationship of inclinations and intellectual abilities according to the method of J.K. Raven and E.A. Klimova

Tab. 1.

Level intellect	PERCENTAGE RATIO				
	Higher	Above the average	Middle	Below the average	Mene
I	95%				
II		75-95. %			
III			74%		
IV				5-24%	
V					5%

We have compared Raven's methods as indicators of the general level of intellectual development with integral indicators of inclinations. I - level -95% and higher - high intelligence

Finally, the total score of each subject according to the Raven's method was ranked in descending order. After the examination, three

groups of subjects were identified according to the severity of intellectual abilities. High, medium, below average intellectual levels per 105 subjects. For comparison, we chose two extreme intellectual levels "high" and "below average" intelligence, then in parallel we set indicators for inclinations, each subject in 5 areas of activity according to the method.



Tab. 2.

Results of comparing propensity and intelligence according to Student's t test.				
DDO Klimova	Intelligence (according to the method of D.J. Raven)			
Nature	2,126			
Technics		2,586		
Person			1,765	
Sign system				3,825
Artistic image				3,114

The results of comparing the data of the Raven methodology and the averaged indicators of the three psychological aptitude methods indicate that the group that received high scores according to Raven has higher values on the "Sign system" scale and the "Artistic images" indicator. The other three scales by E.A. Klimov's t-test gives statistically insignificant results. [five].

The connection between the propensity indicators of the "Sign system" with a high level of intelligence, which is determined by Raven's method, indicates the role of judicious symbolic thinking in solving logical problems presented visually. And the connection with the indicators "Artistic images" testifies to the age specificity of adolescents to be open to any kind of external information, which in turn contributes to the enrichment of the integral capabilities of adolescence.

It is assumed that Raven's progressive matrices can be used for career guidance, for professions that require good intellectual abilities, perception and attentiveness.

CONCLUSIONS

In this part of the study, conducted on the material of adolescence, when such psychological factors as introspection, self-esteem, conscious attitudes, life plans have already come into play. These psychological systems arise as a result of the assimilation and transformation of socially developed structures of people's interaction with the surrounding activity, with each other and with themselves.

Establishment at this stage of psychological maturity of the actual role of individual natural inclinations has along with theoretical significance, and the most obvious practical value for diagnosing the psychological prerequisites of inclinations.

In general, it seems that in the choice of certain types of activity, adolescents consciously or not, but somehow take into account their internal and intellectual capabilities, their inherent search for such types of activities that are "consonant" with their internal psychological makeup and which can to a large extent to meet their specific needs.

- inclinations can be associated with the dominant motivation, which determines, other things

being equal, the selectivity of a person's interaction with the environment, creates a special sensitivity to certain aspects of life.

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ORGAN-IZE: A PROXY RE-ENCRYPTION BASED ORGAN DONATION SYSTEM

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ABSTRACT

Building an organ donation system that satisfies the privacy, confidentiality, and security requirements of healthcare records and private data of donors have always been a challenge in the digital world. Cryptographic technology is an exciting technological advancement in information technology. NuCypher's Proxy Re-Encryption (PRE) Scheme is a distributed and decentralized cryptologic network providing intuitive, accessible, and extensible interfaces as well as runtime for private data management as well as access control dynamically. This paper outlines the Umbral Proxy Re-Encryption scheme, as used by NuCypher KMS. Umbral is a threshold proxy re-encryption scheme following a Key Encapsulation Mechanism (KEM) approach. This paper aims to evaluate the application of NuCypher's Proxy Re-Encryption Scheme to implement the privacy, security, and confidentiality aspects of organ donation systems. The paper elucidates the requirement of securing the healthcare records and private data security and confidentiality in organ donation and identifies the legal and technological limitations of existing healthcare systems and how proposed solutions help to overcome such limitations. The paper also focuses on evaluating the current healthcare system working and its limitations regarding the security and confidentiality of healthcare records with some facts and understanding. The paper briefly emphasis on securing the organ donor's medical records using data encryption until his/her demise and then delegate access to concerned authorities using NuCypher's PRE (Proxy Re-Encryption) network.

KEYWORDS: Digitization, Privacy, Security, Confidentiality, Proxy Re-Encryption, Cryptography, Data Encryption, Public-key Cryptography, etc.

I. INTRODUCTION

Healthcare organizations are designing future ways towards accepting complete digitization within the enterprise. Digitization throughout the care trade has helped suppliers of healthcare services to make a sturdy

as well as important foundation by specializing in the patient's or customer's desires. The future of digitalization in health-care appears encouraging because the patients tend to be softer in victimization services that are digital for advanced and delicate



problems equivalent to health-care as well as drugs. It's a transparent manifestation for payers as well as suppliers to accept the future of digitization in health-care by accepting yet another digital wave.

The non-medical organizations are going to have with success adopted entirely digitalization by providing products that are digital and are also processed through and up to date channels as well as gaining their effectiveness and potency by investment in advanced analytics. Digitization within tending business has reworked means of the patients and suppliers perform as well as commune to each other; as a result of that, creating treatment services available to everybody through guaranteeing broad accessibility.

A. Digitalization in Health-care Industry

Digitization which is authorized by Health Information Technology (HIT) has completely changed the perception of individuals towards health-care, modified the approach of end users, as well as the subject of medical and health services. Adopting digitalization, within the aid trade has remodeled the link between doctors and patients, authorizing folks to participate in the activity of family as well as personal health management. From the aid service supplier's attitude, to form price, it's important to understand what the patient wants and therefore the encompassing myths about them, as well as apprehending the market landscape. Aid or Medical organizations will support intelligent market solutions like client analytics as well as massive information analytics to spot patient's wants. What is more, aid organizations should determine their client division as well as position the services accordingly in order to fulfill the calculable patient wants as well as commands. In order to adopt success in health-care, the only way is to achieve unjust insights and as a result of that, other services are added in order to keep attention of patients as well as drive price

II. CURRENT SCENARIO OF ORGAN DONATION IN HEALTHCARE INDUSTRY

In the current scenario of organ donation in the healthcare industry, especially in countries like-India, they are moving towards digitalization and the donor's health records collected electronically but the current system is not very efficient and well secured. The electronic patient records are depending on any centralized third party including the government and there is no way to track how data is used and by whom and for what purpose. The data is also not encrypted and due to that anyone can hack the system and get

access to health records. There is also no proper space for consent for the usage of any particular data for any particular purpose in our current organ donation system. Security and confidentiality are mainly those points that are missing in the current system and which can affect the donor and also health organization in a very serious way. Hackers can do data breaches that can affect the donor private data confidentiality and loss of a huge amount of money.

Privacy, security, and confidentiality all are basic rights of every patient and these things give security to patients and help them to trust the healthcare system. One can easily lose trust if its privacy regarding their private data is sacrificed. On the other hand, health organizations are also affected by the loss of billions of data due to security issues of their system. By improving the security and taking care of personal data of every patient which is the right of every patient and at the same time consent of every patient regarding the sharing of their medical data is also an important part. It basically helps to take care of the rights of patients regarding their data. There are national frameworks made regarding the privacy and security of patient health records.

On the other hand, organ trafficking is one of the lesser discussed forms of human trafficking. Be that as it may, organ trafficking holds a basic spot with sorted out wrongdoing bunches because of popularity and moderately low paces of law authorization. Global Financial Integrity (GFI) accepts that almost 10 percent of the total organ transplants counting liver, heart, and lungs, is done by means of the assistance of organ trafficking. In any case, the most prominent organs which are exchanged illegally are kidneys, with the well known World Health Organization (WHO) assessing that about 10,000 kidneys are exchanged on the bootleg market overall yearly, or nearly more than 1 kidney consistently.

Looking into the background of the healthcare industry regarding the security and privacy issue, the main flaw in today's digital era is the security of data. The data is a new form of generating money and the hackers are always ready for that. There are many breaches done in the past which show losses of billions of dollars. Especially In a country like India where the digitalization is started and rapidly growing the security of personal data becoming a major problem and the patients even not aware about their rights on their healthcare data and companies also taking advantage of this kind of illiteracy and sell their personal data without their consent and hackers easily can give a big jolt to the Indian healthcare industry due to privacy and security issues. That's why it is important to make the



healthcare system more secure and take care of the privacy of patient records.

The main aspects of an organ donation system should be to ensure:

- The *integrity of donor medical records* so data is exact, right, and reliable - the uprightness of data is basic to quality patient consideration, evaluation of administrations, research, and general wellbeing.
- The *accessibility of medical records to authorized people* who need the data for real medical purposes has prepared an approach to the information - if the medical data isn't promptly accessible to social insurance suppliers, the eventual benefits of patients might be essentially undermined.
- The *privacy of medical records* so donors and patients can be guaranteed that individual private data is only disclosed to authorized persons for authorized purposes at authorized times - recognizable information can be discharged distinctly with the educated assent regarding the patient or consumer.

III. ORGAN-ize's PROPOSED SOLUTION

A. Elevator Pitch

"To secure the organ donor's medical records using data encryption until his/her demise and then delegate access to concerned authorities using NuCypher's PRE (Proxy Re-Encryption) network."

B. General Overview

As discussed, the existing system of organ donation and its security and privacy issues have major flaws and are not a donor friendly system. It means it is not trustworthy to any donor because of the issue of privacy and confidentiality of their private data. The protection of patients and furthermore the security and privacy of their data is the most basic boundary to enter, once taking into consideration the selection of EHR(Electronic Health Records) inside the medical industry. The requirement of privacy of medical records of the patient can affect and play a crucial role in systems like organ donation. The delicate nature of the medical data contained inside the EHR while organ donation has incited the requirement for an increasingly secure framework which can help patients not to stress over their clinical records.

After understanding deeply the faults in the system, I build a prototype to secure organ donor's medical records using data encryption until his/her demise and then delegate access to concerned authorities using NuCypher's PRE (Proxy Re-Encryption) network and

Shamir's Secret Sharing Scheme. Our proposed system is highly secured and clears the fault of privacy, consent, confidentiality issues of the current system. This system helps to keep medical records of patients secured with the help of proxy re-encryption.

This application helps organ donors to safely and anonymously store their medical records using data encryption technique, on a decentralized platform like IPFS until their demise and then delegate access of their private medical data, to their trustee/s as well as to the concerned authorities like Hospitals, which may perform organ transplant after certain verifications and with the use of public-key cryptography we are ensuring our donor's identity to completely safe. The project aims to build an organ donation system based on blockchain which helps to stop organ trafficking and also helps to keep medical records of patients secured with the help of proxy re-encryption.

C. Basic Scenario

Let's say, Alice wants to donate her organs after her demise. She collects all the necessary documents like Identity Proofs, Medical check-ups, Official Organ Donation documents, etc and encrypts the data using her private key $P(A)$, and then encrypted data will be uploaded on IPFS storage. Using NuCypher's Policy Protocol, Alice will be able to write a policy statement granting access to all the medical data related to organ donation to a Medical Institution. Alice's Identity will always remain anonymous in the network.

Using Shamir's Secret Sharing Scheme, Alice will divide her private key $P(A)$ into 2 sub-keys $P(A1)$ and $P(A2)$ and hand it over to her trustees, Bob and Carol. So that after Alice's death, Bob and Carol together can take charge of the medical documents and grant access for Alice's data to a Medical Institution so that all the procedures of organ transplant can be executed on time (before the body starts decomposing). And also Bob and Carol cannot individually access/tamper Alice's data using sub-keys. So Secret Sharing solves the problem of data tampering after Alice's death. Using Shamir's Secret Sharing Scheme, Alice will divide her private key $P(A)$ into 2 sub-keys $P(A1)$ and $P(A2)$ and hand it over to her trustees, Bob and Carol. So that after Alice's death, Bob and Carol together can take charge of the medical documents and grant access for Alice's data to a Medical Institution so that all the procedures of organ transplant can be executed on time (before the body starts decomposing). And also Bob and Carol cannot individually access/tamper Alice's data using sub-keys. So Secret Sharing solves the problem of data tampering after Alice's death. The application focuses mainly on 4 major qualities:

- The anonymity of the organ donor should be maintained in the network.

- Privacy and Security of an organ donor's medical records.
- Confidentiality of an organ donor's private medical data.
- Keeping a track of unethical practices(organ trafficking) in the network.

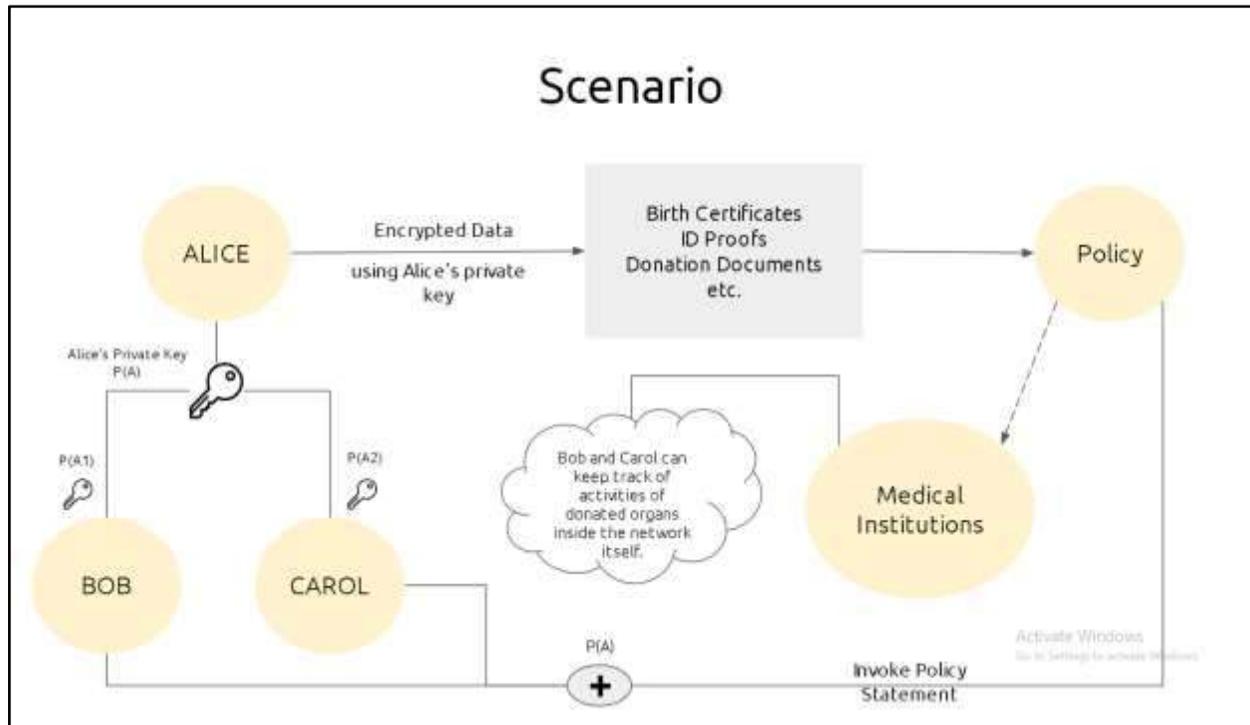


Figure 1: Basic structure explaining the complete scenario of the application

IV. NuCypher - A PROXY RE-ENCRYPTION NETWORK

“A decentralized cryptologic network offering accessible, intuitive, and extensible runtimes and interfaces for secrets management and dynamic access control.”

A. Overview of PRE

NuCypher's Proxy re-encryption (PRE) Scheme is an alternate sort of public-key encryption (PKE) that permits an intermediary to change over ciphertexts

starting with one public key then onto the next public key, without the intermediary(proxy) can learn or know any data about the first secret message; to do as such, the intermediary(proxy) ought to be in control of a re-encryption key that permits the underlying procedure. In this manner, it holds a spot for appointing unscrambling rights, opening up a lot increasingly potential applications that need to delegate permission to existing cypher text(encrypted data). [See Figure 2].

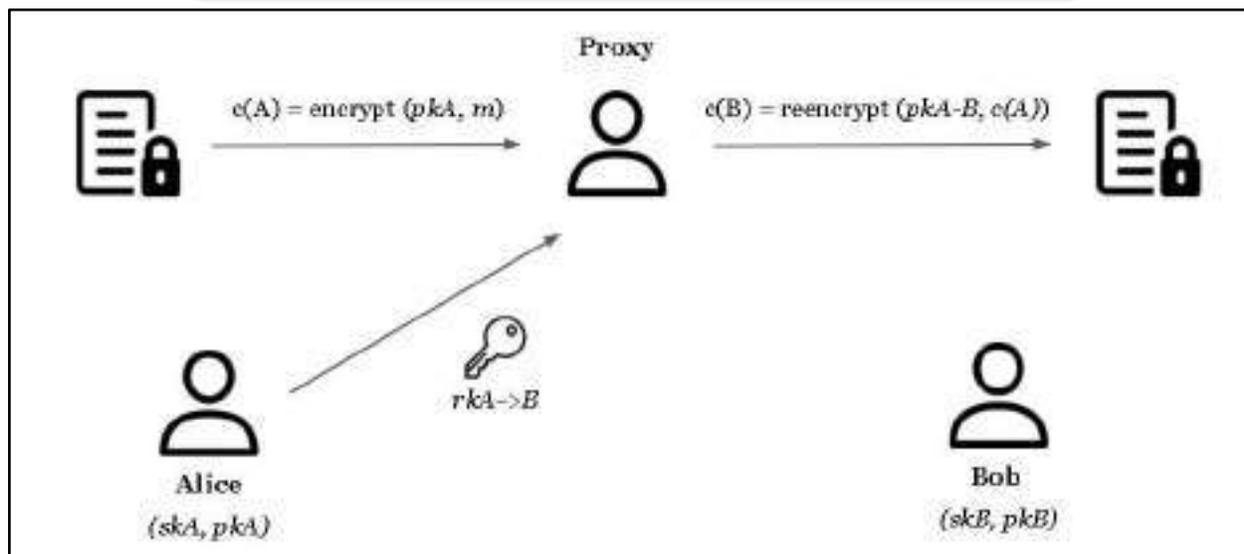


Figure 2: NuCypher Overview

B. Working of NuCypher Network

Umbral is nothing but NuCypher's threshold proxy re-encryption (PRE) scheme. Alice (the private data owner) can envoy decryption rights to Bob (the recipient/ the receiver) for any ciphertext intended for her, through a particular re-encryption process done by

a set of semi trusted-minimized proxies. When a threshold of these semi-trusted proxies engage by performing re-encryption, Bob(the recipient/the receiver) could combine these independent re-encryptions and decrypt the original secret message sent by Alice, using his private key. [See Figure 3.]

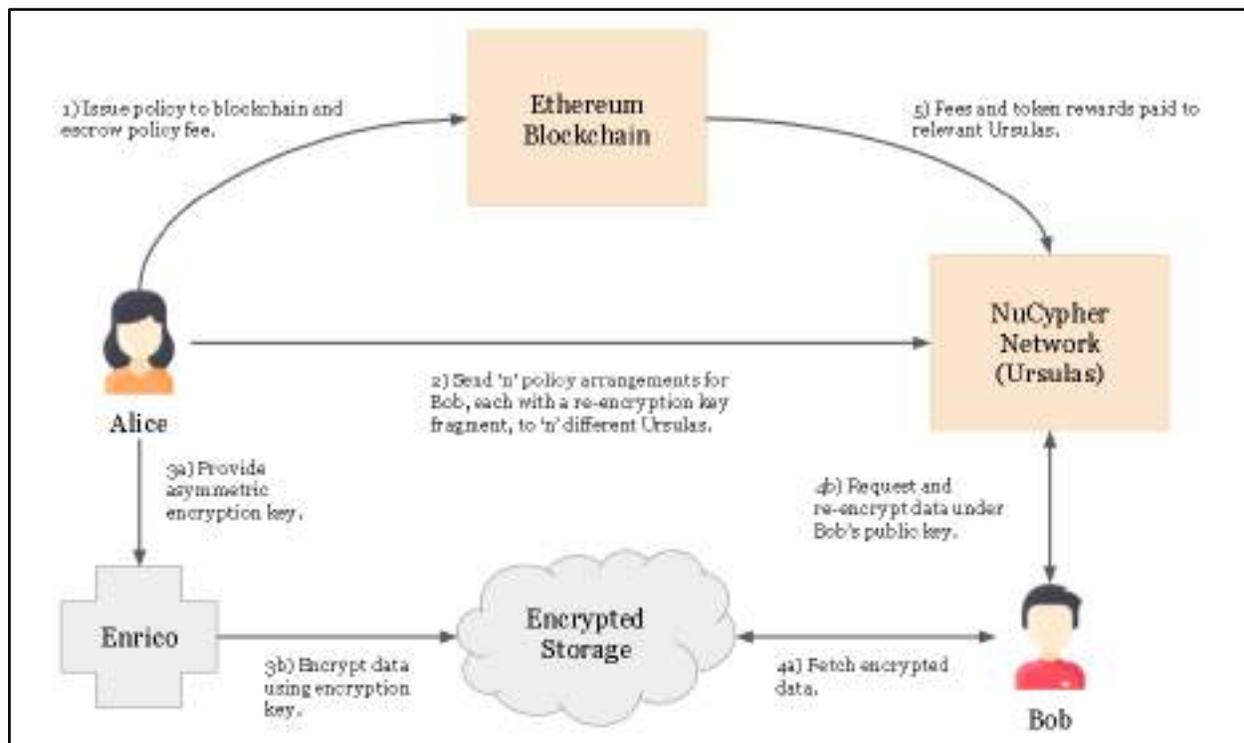


Figure 3: Flow diagram of NuCypher Network



C. Features of NuCypher Network

NuCypher's Proxy Re-Encryption (PRE) Scheme is a distributed and decentralized cryptologic network providing intuitive, accessible, and extensible interfaces as well as runtime for private data management as well as access control dynamically.

- *Accessible* - The NuCypher Scheme works with no authorization and is restriction safe. There are no screens and completely nobody can utilize it.
- *Intuitive* - The NuCypher Scheme supports the classical cryptological account of Alice (the private data owner) and Bob (the recipient/ the receiver). This pervades the code-base and assists code engineers compose securely, abuse-safe code.
- *Extensible* - Presently, the system permits intermediary (proxy) re-encryption (PRE) however could be reached out to help support for some other well known cryptographic natives.

Access authorizations are transformed into the basic encryption, and access can exclusively be explicitly conceded by the secret owner itself by means of sharing policy. Subsequently, the secret owner has complete authority over their information. At no intention is the information decrypted nor will the secret keys be dictated by the NuCypher Scheme itself.

V. FUTURE SCOPE

The upcoming stage of our guide is to make a consortium of on-screen characters inspired by the arrangement portrayed here and to have pilot focuses to send the system and implement it at national or global scale. The main limitation of existing organ donation systems is privacy, lack of security, and confidentiality, and in the future to overcome such limitations cryptographic technologies like NuCypher's Proxy Re-Encryption Scheme, and also some other blockchain technologies, etc. will be an effective tool to deal with it. Our proposed solution is an example of how to overcome issues of security and privacy and how to bring transparency in the system. Currently, I am working on a prototype of the Organ-ize application, which will include Hyperledger Fabric Blockchain - A private and Permissioned Blockchain, along with NuCypher Network.

VI. CONCLUSION

The stakeholders of the health-care industry are operational within the technological period. Insurance suppliers place confidence in superannuated medical knowledge, clinics communicate inefficiently, and successively, patients receive inadequate service. As

different industries adopt technologies to form practices a lot of economical care has been forgotten and effectively left within the mud. Medical records are one of the most important data of any person because it includes every private detail about that person and no one wants to share their private data with others without their consent and every patient wants a surety and reliability of healthcare organizations to keep their data secure. Security and Privacy are moral requirements of every patient. Organ-ize provides a straightforward, however effective cryptographic (Proxy Re-Encryption Scheme) based solution to mitigate the drawbacks of this broken system and build a care setting that supports patient-centered knowledge integrity and security. By utilizing the technology bestowed by Organ-ize, we will give higher record management for patients, quicker emergency response times, and improved security of sensitive medical data.

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A STUDY ON CONSUMERS' SATISFACTION TOWARDS HOME APPLIANCES WITH SPECIAL REFERENCE TO LED TELEVISION IN COIMBATORE CITY

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ABSTRACT

A study on consumer satisfaction towards home appliance with special reference to LED television with in Coimbatore city is about LED television . The primary objective of the study is to find out the analysis the factors influencing the consumer in the purchase of LED Television. The primary data were collected using structure questionnaire in google form.

The secondary data was collected from related websites, books. The survey was conducted with 120 respondents by using questionnaire method this Study insist the fact that Delivering customer satisfaction is the heart of modern marketing theory.

KEYWORDS: *consumer preference and satisfaction, influencing factor and buying particular LED TV.*

INTRODUCTION

Good service and customer satisfaction are very important for companies for both small and big companies, but especially so for small companies. Today competition between companies is growing all the time is why good service is becoming more and more important. When a company manager serve its customer well enough and market them happy company can create long term customer relationship and possibly get free marketing at the same time when satisfied. Customer tell about the good service they got satisfied customer have a positive impact on the company's results and that is why it is important and interesting to investigate this impact. When measuring customer satisfaction it's possible to get useful information of the company customer and the results can be used to improve the company and its service.

OBJECTIVES OF THE STUDY

- To analysis the factors influencing the consumer in the purchase of LED Television.
- To measure the level of satisfaction of the consumer on various attributes of LED Television.
- To bring out the key findings and offer suitable suggestions to strengthen the marketing of LED Television.

SCOPE OF THE STUDY

The present study target of Coimbatore city consumers, understanding their behavior helps to identify the preference influence of their purchase decision etc.. on the purchase of particular electronic product. The insight will help the manufactures to adopt new strategies which would help not only to attract new consumer but also the maintain the loyalty of the existing consumer, as in the present competitive



scenario the consumer are prepared to choose their right product not only based on their needs but also on the basic of personal interest shown by the manufactures on them.

LIMITATIONS OF THE STUDY

- The coverage of the study is limited to coimbatore city only.
- The study being a primary one, the accuracy and reliability of data on the Information provided by the respondents.
- The taste and preference of the consumers are constantly changing.

STATEMENT OF THE PROBLEM

- A study of consumer satisfaction towards the LED Technology with reference to LED TV.
- The satisfaction level of the consumer should be analysis.
- Solutions for improving the LED TV should be analysis.

REVIEW OF LITERATURE

N.Bharathi and V.Bharathi (2019) "A Study On Consumer Behaviour Towards TV Brands Special Reference To Lg Television" This paper is an attempt to study the consumer behavior towards various television brands. The level of satisfaction of consumers varies with each brand of the products. Everyone is unique in his/her tastes and preferences. They all cannot be extraordinarily satisfied every second and all the time but they can be managed with best quality. Type of buying behavior are classified namely quality conscious, economic conscious and bargain conscious.

FORMULA

$$\text{PERCENTAGE} = \frac{\text{Number of Respondents}}{\text{Total number of respondents}} \times 100$$

TABLE NO: 1

TABLE SHOWING GENDER OF THE RESPONDENTS

S.NO	PARTICULARS	NO.OF RESPONDENTS	PERCENTAGE
1.	MALE	64	53
2	FEMALE	56	47
	TOTAL	120	100

(source : primary Data)

INTERPERTATION

It is revealed that 53 % of the respondents are male and the 47% of the respondents are female.

Tamilselvi And Gomathipriya (2019) "A Study On Customer Statisfaction Towards Lg Televisions With Special Reference To Salem City". The standard of livingalso boost.TV manufacturing these days is also facing challenges in technological development and every day invention with new features is coming in the market and making the old tools and feature unqualified. When the led television industrialists are given a quality product at realistic price, the mass sales will be upraised significantly. The manufactures should be fulfilled the updated knowledge as well as the eco-friendly concept.

DATA ANALYSIS AND INTRPRETATION

The data collected from the samples have systematically applied and applied and presented in tables under various headings in the following pages. They were also arranged in such a way that, a detailed analysis can be made so as to present suitable interpretations for the same. The data have been analyzed using the following statistical tools.

- Percentage analysis
- Rank analysis
- Likert scale analysis

SIMPLE PERCENTAGE ANALYSIS

The percentage analysis is mainly employed to find the distribution of different categories of respondents. As the value are expressed in percentage it facilities comparison and standardization. This analysis describes the classification of the respondents failing under each category.

INFERENCE

Majority 53 % of the respondents are male in gender.

**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 sequence from strongly negative to strongly positive. Used mainly in behavioural science, in likert method a person's attitude is measured by combining (adding pre averaging) their responses all items.

FORMULA

LIKERT SCALE = $\Sigma(FX)/\text{NUMBER OF RESPONDENTS}$

F = NO. OF RESPONDENTS

X = LIKERT SCALE VALUE

(FX) = TOTAL SCORE

MID VALUE:

Mid- Value indicates the middle most value of the likert scale.

TABLE NO: 2
TABLE SHOWING SATISFACTION TOWARDS FEATURES OF LED TELEVISION OF PICTURE QUALITY OF THE RESPONDENTS

S.NO	PARTICULARS	NO.OF RESPONDENTS	LINKERT SCALE	TOTAL
1.	Highly satisfied	68	5	340
2.	Satisfied	44	4	176
3.	Neutral	8	3	24
4.	Dis satisfied	0	2	0
5.	Highly dissatisfied	0	1	0
	TOTAL	120		540

(source: Primary Data)

Likert scale = $\Sigma(FX)/\text{total number of respondents}$
 = 540/120
 = 4.5

INTERPRETATION

Likert scale value is 4.5 greater than the middle value (3), so the consumers are highly satisfied in picture quality.

between ranking of different ordinal variables or different ranking of the same variable, where a "ranking" is the assignment of the label "first", "second", "third", etc. to different observation of a particular variable. A rank analysis measures the degree of similarity between two rankings, and can be used to assess the significance of the relation between them.

RANKING ANALYSIS

A Rank analysis is any of several satisfies that measure an ordinal association. The relationship

TABLE NO: 3
TABLE SHOWING PROBLEM IN RANKING ACCORDING TO YOUR CONVENIENCE OF THE RESPONDENTS

S.NO	FACTORS	RANK I	RANK II	RANK III	RANK IV	RANK V	TOTAL SCORE	RANK
1.	LED TV screen will go blank	59(5)	33(4)	11(3)	15(2)	2(1)	492	1
2.	Horizontal lines in LED TV-when you switch on the appliance	37(5)	50(4)	15(3)	11(2)	7(1)	459	2
3.	Your LED TV gives no sound	38(5)	30(4)	31(3)	18(2)	3(1)	442	3
4.	Audio problem	25(5)	47(4)	25(3)	19(2)	4(1)	430	5
5.	LED TV does not get connected to Wi-Fi	32(5)	40(4)	25(3)	16(2)	7(1)	434	4

(source: Primary Data)



INTERPERTATION

The Table 4.3.1 shows that the out of 120 respondents, led tv will go blank is in the rank 1, horizontal lines in led tv when you switch on the appliance is in the rank 2, your led tv gives no sound is in the rank 3, audio problem is in the rank 5, led tv does not get connected to Wi-Fi is in the rank 4.

INFERNCE

If resulted that led TV will go blank is in the rank 1 and it is problem in ranking according to your convenience.

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDING

SIMPLE PERCENTAGE ANALYSIS

- ◇ Majority 53% of the respondents are male in gender.
- ◇ Majority 76% of the respondents are below 30 years in age.
- ◇ Majority 32% of the respondents are professional in occupation .
- ◇ Majority 53% of the respondents are UG&PG in education level .
- ◇ Majority the 63% of the respondents are nuclear family in family type.
- ◇ Majority 48% of the respondents are below 200000 in annual income .
- ◇ Majority 45% of the respondents are urban in area of resident.
- ◇ Majority 49% of the respondents are television in purchase decision.
- ◇ Majority 80% of the respondents are in family entertainment
- ◇ Majority 43% of the respondents are 31-40 inches in size of the screen.
- ◇ Majority 28% of the respondents are xiaomi in brand.
- ◇ Majority 53% of the respondents are Rs.30001-Rs.50000 in price range.
- ◇ Majority 55% of the respondents are cash in payment method.
- ◇ Majority 43% of the respondents are it increase my knowledge in importance.
- ◇ Majority 79% of the respondents are no in problem faced.
- ◇ Majority 23% of the respondents are free appliances in offer.

LIKERT SCALE ANALYSIS

- Likert scale value is 4.5 greater than the middle value (3), so the consumers are highly satisfied in picture quality.
- Likert scale value is 4.14 greater than the middle value (3), so the consumers are agree in sound quality.
- Likert scale value 4.01 greater than the middle value (3), so the consumer are agree in the slimness of screen
- Likert scale value is 4.08 greater than the middle value (3), so the consumers are satisfied in the size (inches).
- Likert scale value is 3.92 greater than the middle value (3), so the consumers are satisfied in the television.
- Likert scale value is 4.15 greater than the middle value (3), so the consumers are satisfied in the brand.
- Likert scale value is 3.92 greater than the middle value (3), so the consumers are satisfied in the price.
- Likert scale value is 3.74 greater than the middle value (3), so the consumers are satisfied in the after sales service.
- Likert scale value is 3.92 greater than the middle value (3), so the consumers are satisfied in the payment mode.

RANK ANALYSIS

- If resulted that led TV will go blank is in the rank 1 and it is problem in ranking according to your convenience.

SUGGESTION

- The manufacturer can give more offers to attract more number of customers.
- The customers feel that Price of LED TV is costly therefore company may reduce by eliminating waste and unnecessary expenses.
- The company should take steps to improve after service.
- Consumers are ready to pay reasonable cost to the products which has good qualities and features, so companies should make themselves ready to give the best product and satisfy the end users.
- By the study it is revealed that only very less number of customers are using LED TV. So TV company should think about it, how to increase the sales of LED TV. They should why customers are not preferred to buy LED TV. Price of the LED TV is the major factor



for stagnation in sales of LED TV among the average income class of people.

CONCLUSION

Today there are number of brands of led televisions are available in the market and they differ in price, quality, clarity etc. In the present technological era it can be said that most of the people are prefer to switch over to new models. When the led television manufacturers are given a quality product at reasonable price, the mass sales will be raised significantly. The manufactures should be implemented the updated technology as well as the ecofriendly concept.

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EVALUATION OF GROUNDWATER QUALITY AND ITS SUITABILITY FOR DRINKING AND AGRICULTURAL USE IN ARYAD PANCHAYATH OF ALAPPUZHA

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ABSTRACT

Groundwater is a very important and needful component for our population. Every single aspect of the developing process needs groundwater availability. A study was conducted to check the quality of groundwater in Aryad panchayath located in the coastal belt of Alappuzha district which lies in the coastal lowland division of Kerala. The sample collected was tested at Water Care Laboratories Thrissur and found that iron content is significantly high which imparts a rust color to the sample collected and makes it unfit for drinking. Also, the test confirmed the presence of pathogens. These two factors make the groundwater of Aryad panchayath unconsumable. The water must be treated sufficiently to eradicate pathogens and also to bring down iron content to an optimum amount which makes water consumable

1.0 INTRODUCTION

For the existence of life, water is essential. Other than being a basic human entity water is used for several purposes like agriculture, industrial, household, and environmental activities. The majority of the liquid freshwater which is consumable for human use is from groundwater (Foster 1998). There is now a higher demand for freshwater due to overexploitation and overpopulation. Approximately one-third of the world's total population use groundwater for drinking (Nickson et al .2005). Since there is a tremendous hike in the population, it is very important to uplift the quality of groundwater available. According to Babiker et al.(2007), the chemistry of groundwater is not only related to lithology but also reflects inputs from the atmosphere, from the soil, and as well as from pollutant sources such as saline intrusion and industrial and domestic wastes. Considering the situation of Kerala, per capita, water availability has decreased fivefold. Groundwater used for domestic and irrigation purposes can vary greatly in quality depending upon the type and quantity of dissolved salts in it. Dissolved salts should be present in

irrigation water in relatively small but significant amounts. They originate from the dissolution of lime, gypsum, and other slowly dissolved soil minerals

Study Area

The study area lies in the Alappuzha district, which is in the southern part of Kerala. Covering 1,414 km². The present study area lies in Aryad panchayat of Alappuzha with a total area of 6.87 km² and with a population density of 9000/sq mi. Mainly two seasons are experienced by the study area, one is southwest monsoon season that is from June to September and the other one is northeast monsoon season from October to December. The average annual rainfall of the study area ranges between 2,180 to 3,484 mm.

Ground Water Scenario

Net annual groundwater availability for the total Alappuzha district is approximately about 453 MCM. The stage of groundwater development of the whole district is about 28.5%, when considering the situation of Aryad panchayat it is 60%.



Assessment Unit	Annual Extractable Groundwater Recharge (Ha.m)	Current Annual Ground Water Extraction (Ha.m)	Annual Groundwater Allocation for Domestic use as of 2025 (Ha.m)	Net Ground Water Availability for future use (Ha.m)	Stage of Ground Water Extraction (%)
Aryad Panchayat	2528.30	1676.972	1380.76	838.88	66.33

Table 1.1 Ground Water Scenario in Aryad Panchayat (Central Ground Water Board (CGWB) (2007))

2.0 METHODOLOGIES

Groundwater samples were collected from a shallow open well during November which represents the post-monsoon season of Aryad panchayat in Alappuzha. The samples were filled up to the brim in a high-density polyethylene bottle and to avoid exposure to air it was labeled and sealed systematically. The standards recommended by the American Public Health Association (ADHA 1995) were strictly followed to ensure data quality while collecting the water sample. The water sample was sent to Water Care Laboratories Thrissur for assessing the quality of the collected sample. Various physicochemical parameters like Ph, turbidity, TDS, conductivity, alkalinity, acidity, Cl, CaCO₃, Ca, Mg, Fe, SO₄. Were tested. The methods used to determine the presence of the ions mentioned above were volumetric and chlorimetric methods. The evaluation of suitability of the collected sample of groundwater was done by comparing the values of different water quality parameters with those of the World Health Organisation (WHO 2004) and Indian Standard specification (ISI 1993) defined values for drinkable water. (S.V Sarath Prasanth et al. 2012)

2.1 Measuring Methods According to Indian Standards

Ph (IS 3025 : 1983)

To measure the ph value of the sample water electrometric method is used. It is done by the measurement of the electromotive force of a cell which has an indicator electrode which is immersed in the test solution and a reference electrode. A liquid junction which the part of the reference electrode enables the contact between the test solution and reference electrode. The most commonly used electrodes are a combination of hydrogen gas electrodes along with a calomel electrode and the reference potential is a saturated calomel electrode. The working of the system is such that the glass electrode experiences a change of 1 ph unit which produces an electric charge of 59.1 mV at 298 K.

Turbidity (IS 3025 : 1984)

Turbidity is measured using an instrument called nephelometry. The principle for measuring turbidity is based on the comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by the reference suspension under the same condition. Generally, formazin polymer is the turbidity standard.

Total Dissolved Solids (IS 3025 : 1984)

Total dissolved solids either referred to as filterable residue is sorted out using the gravimetric method and this method applies to all types of water and wastewater. The sample water is filtered and is evaporated in a tared dish on a steam bath. The residue after evaporation is dried to constant mass at 103-105 °C.

Chloride (Cl) (IS 3025 : 1998)

Since the sample is colored, potentiometry is the method used to detect chlorine. This is done by titration with silver nitrate solution with a glass and silver-silver chloride electrode system. The endpoint of the titration is that the instrument reading greatest change in voltage has occurred for a small and constant increment of silver nitrate.

Total Hardness (CaCO₃) (IS 3025 : 2009)

The most common method for determining the total hardness of water sample is by Ethylenediamine tetraacetate acid (EDTA), it is based on the reaction between calcium and magnesium salts with ethylenediaminetetraacetic acid or its disodium salt and applies to all type of water except wastewater.

Calcium and Magnesium (Ca, Mg) (IS 3025 : 2009)

The method used to detect both the presence of calcium and magnesium in water is the volumetric method using EDTA. When the sample is treated with EDTA at ph 10 using Erichrome black-T as an indicator the presence of calcium is detected. To detect the presence of magnesium a separate titration



against EDTA at pH 12 is done using murexide as an indicator

Iron and Sulphate (Fe, SO₄) (IS 3025 : 2003), (IS 3025 : 1986)

The standard method for determining the presence of iron in a water sample is by phenanthroline method. In this method iron in the sample is reduced to the ferrous state by boiling it with hydrochloric acid and hydroxylamine and treated with 1,10 phenanthroline at a pH of 3.3. Three molecules of phenanthroline chelate each atom of ferrous iron to form an orange-red complex which can be later separated. In the case of sulphate thionin method is done to ensure their presence, the sulphate ion is titrated under controlled acid conditions in an alcoholic condition using thionin as an indicator. The standard used in this case is barium chloride.

***E.coli* (IS 1622 : 1981)**

E.coli is one of the members of fecal coliforms whose presence confirms the existence of other dangerous pathogens. When using brilliant green bile lactose these coliforms ferment the lactose at 44.5 °C within 24 hours as well as produce indole from tryptophane at 44-50° within 24 hours. At the end of the incubation period of 26 hours, test for indole production by adding a few drops of Kovac's reagent. The positive test will give a pink color while the negative test will give a yellow color.

3.0 RESULTS AND DISCUSSIONS

The quality standards of drinking water have been specified by the World Health Organisation (WHO) in 2004. The influence of major ions and physicochemical parameters such as pH, electrical conductivity, total hardness, and the suitability of groundwater in the study area are discussed below. Bacteriological analysis of the sample is also done.

Sl.No	Parameters	Unit	Acceptable Limit	Permissible Limit	Result
1	Ph	-	6.5-8.5	No relaxation	6.7
2	Turbidity	NTU	1	5	0.1
3	Total Dissolved Salts	mg/l	500	2000	170
4	Conductivity	µS/cm	400	-	304.6
5	Alkalinity	mg/l	200	600	68.4
6	Acidity	mg/l	-	-	7.3
7	Chloride (cl)	mg/l	250	1000	43.7
8	Total Hardness (CaCO ₃)	mg/l	200	600	40.5
9	Calcium (Ca)	mg/l	75	200	12.3
10	Magnesium (Mg)	mg/l	30	100	6.5
11	Iron (Fe)	mg/l	0.3	1.0	3.4
12	Sulphate (SO ₄)	mg/l	200	400	2.4
13	Coliforms	No.of coliforms in 100 ml	-	-	542
14	<i>E.coli</i>	No.of <i>E.coli</i> in 100 ml	-	-	present

Table 3.1 Test Results

Chlorine (Cl)

The presence of chlorine in the groundwater in this area is mainly due to the leaching of sedimentary rocks and the intrusion of saltwater. In the study area concentration of chlorine is 43.7 mg/l. The desirable limit of the chloride in drinking water is specified as 250 mg/l. So we can conclude that the water has only the desired level of chlorine in it.

Total Hardness (CaCO₃)

The hardness of the groundwater is due to the dissolved alkaline earth metals. The hardness of the water makes it unfit for drinking purposes. The limit of the hardness of water as per the guidelines of the World Health Organization and Indian Standards is 200 mg/l. The water sample taken from the study area contains 40.5 mg/l which falls under the acceptable limit.



Calcium (Ca) and Magnesium (Mg)

These are the most abundant element in groundwater. As per the Indian Standards, (ISI 1993) desirable limit of calcium concentration is 75 mg/l. the calcium content in the sample taken is 12.3 mg/l which indicates a safe level of calcium in the sample. Considering the case of magnesium, the maximum permissible limit as per the guidelines of WHO and ISI are 30 mg/l. The sample contains 6.5 mg/l traces of magnesium which indicates a safe mark.

Iron (Fe)

Iron is an essential element in human nutrition. An estimate of the minimum daily requirement of iron ranges from 10 to 50 mg/day. In drinking water supplies iron salts are unstable which settles out as rust. In ordinary cases, there will be less discoloration or turbidity in water. When directly pumped from a well. Iron content also promotes bacterial growth. The permissible amount of iron in the water as per the guidelines of the World Health Organisation is 0.3 mg/l but the water sample contains 3.4 mg/l making it unfit and harmful for drinking purposes. (WHO 2004).

Sulphate (SO₄)

Sulphate is a general combination of solar and oxygen which is occurred in some soil or rock formation that contain groundwater. They can cause scale buildup in a water pipe and may assign a bitter taste in water which makes them unfit for drinking, they can even have a laxative effect on humans and young livestock. The permissible limit of the sulphate content in drinking water is 200 mg/l, whereas the content in the sample tested is only 2.4 mg/l which indicates the safe level.

Ph

The ph of the solution is the negative common logarithm of Hydrogen ion activity.

$$\text{Ph} = -(\log \text{H}^+)$$

Or in other words, it can be stated as the measure of acid-base equilibrium. Considering most natural waters ph is controlled by carbon dioxide-bicarbonate- carbonate equilibrium system. Temperature also has a significant role in ph of water. In the case of pure water, a decrease in ph about 0.45 occurs as the temperature is raised by 298 Kelvin. The ph of drinking water relies on between 6.5-8.5. The most common method to measure the ph of an aqueous sample is electrochemical with a glass electrode. The ph of the groundwater sample collected is 6.7 which falls under the permissible limit as per the guidelines of the World Health Organization.

Turbidity

Turbidity refers to the cloudiness of aqueous solutions. Some of the major reasons for turbidity are Phytoplankton, sediments from erosions, water discharges, algae growths, and urban runoff. Turbidity is generally measured by an instrument called a nephelometer in NTU. Turbidity has direct control in reducing the oxygen content of water, suspended particles, absorb heat from sunlight making the water warmer and thus reducing the concentration of oxygen. The WHO establishes that the turbidity of drinking water shouldn't be more than 1 NTU. The turbidity of the sample water collected is 0.1 NTU which marks the safe level.

Total Dissolved Salts

Total dissolved solids account for the inorganic salts and small amounts of organic matter in solution in water. The individual constituents are mainly calcium, magnesium, sodium, potassium cations, and carbonate, hydrogen carbonate, chloride, and nitrate anions. In a study conducted in Australia, an increased level of TDS shows a significant rise in heart diseases. According to WHO water containing TDS concentrations below 1000 mg/l is usually an extremely low concentration of TDS unacceptable for consumption due to its flat and insipid taste. The water sample contains 170 mg/l of TDS which indicates the water is fit for consumption.

Electrical Conductivity

Conductivity is the ability to pass an electric current. In water, conductivity is affected by the presence of inorganic solids such as chloride nitrate sulphate and phosphate anions (-ve charge) or sodium, magnesium, calcium, iron, and aluminum cations. Conductivity is directly proportional to temperature. According to WHO standards conductivity value in consumable water should not exceed 400 $\mu\text{S}/\text{cm}$, the sample has a conductivity of 304.6.

Coliforms and *E.coli* Bacteria

Coliforms are a common form of bacteria present in the environment and feces of all warm-blooded animals and humans. Even though they are unlikely to cause illness, their presence in drinking water indicates that pathogens could be in the water system. It is a tough task to test all possible pathogens in drinking water, since it is very easy and inexpensive to test for coliform bacteria their detection can conform to other pathogens in the water. Mainly there are three groups of coliform bacteria indicating different levels of risks. Total coliform bacteria are very common in the environment. If the presence of Total coliform bacteria is confirmed it is probably due to environmental and fecal contaminations. Fecal



coliform bacteria exist in the intestines and feces of people and animals. *E.coli* is a subgroup of the fecal coliform group. The presence of *E.coli* in the drinking water sample usually highlights fecal contamination, indicating the greater risks that pathogens are present.

4.0 CONCLUSION

Groundwater is an important source of drinking water, about one-third of the total population depends on groundwater. Contamination of groundwater results in the degradation of water quality and creates potential health problems. The area subjected to the study has groundwater that is unfit for consumption. The sample was taken from an open well and was tested for 14 physiochemical parameters and bacteriological analysis was also conducted. The results illustrated that the physical parameters like pH, turbidity, total dissolved solids, and conductivity falls under the acceptable limit. All the chemical parameters except iron were under the acceptable limit. The high traces of iron in the sample imparts a rust color to the sample. The bacteriological analysis was tested positive for *E.coli* which depicted the presence of dangerous pathogens in it. According to the guidelines of the World Health Organization (WHO) and Indian Standards (IS), the groundwater sample taken from Aryad panchayath is unfit for drinking and irrigation purposes.

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A STUDY ON CONSUMERS SATISFACTION LEVEL TOWARDS YAMAHA MOTORS WITH SPECIAL REFERENCE TO YAMAHA R15

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ABSTRACT

Yamaha Motor Company Limited, Yamaha Hatsudōki Kabushiki-geisha) is a Japanese manufacturer of motorcycles, marine products such as boats and outboard motors, and other motorized products. This study helps to know the positioning of the Yamaha R15 and also to pinpoint their brand elements. The satisfaction level of consumers is analyzed as under. The availability of features and development of technology brings a slight change in the customer satisfaction. The sample of 120 respondents was chosen for the study. The Yamaha motor groups products quality and are based on maintaining ongoing, close relationships with our customers. Majority 61% of the respondents may buy R15 bike even the price increases. The Likert Scale Value is 2.16 is more than the Mid-value (2) so the respondents are satisfied with the safety of the bike. It seems like only high class and upper middle class can R15 bike so the price should also be affordable to lower middle class people below poverty line. This study suggested that the R15 bike sales will not fall even the price increases. The main aim of the study is to analyze the customer satisfaction level towards Yamaha R15 with special reference to Perundurai district. The study analyzes various factors which includes the features, body design, engine design, comfort and safety of the bike.

KEYWORDS: *Customer satisfaction, two wheelers, Yamaha R 15 bike.*

INTRODUCTION

Yamaha Motor Company Limited, Yamaha Hatsudōki Kabushiki-geisha) is a Japanese manufacturer of motorcycles, marine products such as boats and outboard motors, and other motorized products. The company was established in 1955 upon separation from Yamaha Corporation (however Yamaha Corporation is still the largest private company shareholder with 9.92%, as of 2019), [1] and is headquartered in Iwata, Shizuoka, Japan. The company conducts development, production and marketing operations through 109 consolidated subsidiaries as of 2012. Led by Genichi Kawakami, the company's founder and first president, Yamaha Motor began production of its first product, the YA-1, in 1955. The 125cc motorcycle won the 3rd Mount Fuji Ascent Race in its class. The company's products includes motorcycles, scooters, motorized bicycles, boats, sail boats, personal water craft, swimming pools, utility

boats, fishing boats, outboard motors, 4-wheel ATVs, recreational off-road vehicles, go-kart engines, golf carts, multi-purpose engines, electrical generators, water pumps, snowmobiles, small snow throwers, automobile engines, surface mounters, intelligent machinery, industrial-use unmanned helicopters, electrical power units for wheelchairs and helmets.

STATEMENT OF THE PROBLEM

- The statement of the problem is to analysis the customer satisfaction towards Yamaha R15. Nowadays, every youngster wants a rich lifestyle by owning a new bike. Different consumers have opinion in buying huge varieties of bikes
- The satisfaction level of consumers is analyzed as under. The availability of features and



development of technology brings a slight change in the customer satisfaction.

SCOPE OF STUDY

- Brand positioning plays a major role in making a purchase decision by the consumers. Understanding the consumer minds is a tough task for the company. A company wants to make more sales then the company must improve their brand positioning in the market.
- ▲ This study helps to know the positioning of the Yamaha R15 and also to pinpoint their brand elements.
- ▲ These studies provide the relationship between brand image and brand equity.
- ▲ The scope of the study is limited to Yamaha R15 sports bikes.
- ▲ The study is conducted in one dealer showroom at scarlet Yamaha Mysuru.

OBJECTIVES OF THE STUDY

- ▲ To study the existing brand positioning strategies of Yamaha R15 at Scarlet Yamaha.
- ▲ To evaluate the effect of brand positioning strategies on the purchase decision of customers.
- ▲ To identify the features of Yamaha R15 which influence the customers in making a purchase decision
- ▲ To study the brand elements of Yamaha R15 at Scarlet Yamaha with respect to brand positioning.

RESEARCH METHODOLOGY SAMPLE SIZE

The sample of 120 respondents was chosen for the study.

SPECIAL TOOLS APPLIED

- Simple percentage analysis
- Likert scale analysis

REVIEW OF LITERATURE

Ravishankar S Ullé, Kotresh Patil, Dr. Aparna J Varma (2018) Brand positioning is a process of creating an image in the minds of customers on the product by the company. The main objective of the study was existing brand positioning strategies of Yamaha R15 at Scarlet Yamaha. To evaluate the effect of brand positioning strategies on the purchase decision of customers. To

identify the features of Yamaha R15 which influence the customers in making a purchase decision and to study the brand elements of Yamaha R15 at Scarlet Yamaha with respect to brand positioning. Here a study was conducted on brand positioning at Scarlet Yamaha Pvt. Ltd. various influencing factors like brand value, customer insights, customer income status, brand character, brand elements were considered for the study.

G. Mahalakshmi(2014) This research analyses the satisfaction of the customer towards two wheelers. The study was restricted only to Theni city. A total of 240 consumers of departmental stores were personally surveyed with a structured questionnaire. Statistical analysis such as percentage analysis, Chi square was carried out. India is the second largest manufacturer and producer of two-wheelers in the world. The preferences of the consumers clearly indicate their importance of advertisement in influencing their purchase, the additional facilities expected, improvement expected in handling defective goods and many. At the beginning of the century the automobile entered the transportation market as a toy for the rich. However, it became increasingly popular among the general population because it gave travelers the freedom to travel when they wanted to and where they wanted.

D. Vijayalakshmi, M. Shantha Kumari, S, Deepika(2015)¹: In the present era, Customers are the center point for all marketing activities and all the players in the trying to hold their place in the minds of the consumers. Their satisfaction plays an effective role in the success of any business. Branding is around for centuries as a mean to identify and differentiate the goods and services of one producer from those of another. It is considered to be the valuable asset. The brand such as Hero, Suzuki, TVs, Bajaj, Honda, Mahindra, Royal Enfield, and Yamaha are the popular brands in two wheelers automobile industry.

ANALYSIS AND INTERPRETATION

In this chapter, the analyses and interpretation of “A study on customers satisfaction towards Samsung LED television with special reference to Coimbatore city”. Based on a sample of 120 respondents selected from Coimbatore city through a questionnaire comprising of 19 questions is presented. The data collected are classified and tabulated and further the following statistical measures are also employed in fulfilling the objectives of the study.

- Simple percentage analysis
- Likert scale analysis

**PERCENTAGE ANALYSIS****TABLE SHOWING SOURCE OF AWARENESS**

SOURCES	NO. OF RESPONDENTS	PERCENTAGE(%)
NEWSPAPER	15	10
MAGAZINES	47	31
TELEVISION ADVERTISEMENT	50	33
FRIEND	38	25
TOTAL	150	100

*(source: Primary data)***INTERPRETATION**

From the above table, 10% respondents aware from newspaper, 31% respondents aware from magazines, 33% respondents aware from television advertisement and 25% respondents aware from friend.

INFERENCE

Hence, majority 33% of the respondents aware from television advertisement.

TABLE SHOWING RESPONDENTS WILL BUY OR NOT IF THE PRICE INCREASES

RESPONSE	NO. OF RESPONDENTS	PERCENTAGE
Surely buy	32	21
May buy	93	61
May not buy	26	18
Total	150	100

*(Source: Primary data)***INTERPRETATION**

From the above table, 21% of the respondents surely buy even the price increases, 61% of the respondents may buy even the price increases and 18% of the respondents may not buy if the price increases.

INFERENCE

Hence, 61% of the respondents may buy R15 bike even the price increases.

LIKERT SCALE ANALYSIS**TABLE SHOWING RESPONDENTS RATINGS TO THE BRAKING SYSTEM OF THE BIKE**

FACTORS	NO. OF RESPONDENTS	LIKERT SCALE VALUE(x)	TOTAL SCORE (fx)
Satisfied	54	3	162
Neutral	70	2	140
Dissatisfied	26	1	26
Total	150		328

(Source: Primary Data)

Likert Scale = $\sum (fx) / \text{Number of respondents}$
 $= 328/150$
 $= 2.19$

The Likert Scale Value is 2.19 is more than the Mid-value (2) so the respondents are satisfied with the braking system of the bike.

TABLE SHOWING APPEARANCE OF THE R15 BIKE

S.no	PARTICULARS	NO. OF RESPONDENTS	LIKERT METHOD	TOTAL SCORE
1	Excellent	51	4	204
2	Good	65	3	195
3	Average	30	2	60
4	Poor	4	1	4
	Total	150	10	453

*(Source: Primary data)***FORMULA**

Likerts scale = $\sum (fx) / \text{total number of respondents}$
 $= 453 / 150$

 $= 3.02$



INTERPRETATION

From the above table, respondents like the appearance of R15 bike shows in likerts scale value is 3.02 which are greater than the mid value (2.5).

INFERENCE

Hence, the respondent's opinion is good with the appearance of the R15.

FINDINGS

FINDINGS FROM PERCENTAGE ANALYSIS

- Majority 74% of the respondents are male.
- Majority 49% of the respondents are under the age group of 21-23 years.
- Majority 34% of the respondents are students.

FINDINGS FROM LIKERT SCALE ANALYSIS

- The Likert Scale Value is 2.67 is more than the Mid- value(2) so the respondents are satisfied with the body design of the bike.
- The Likert Scale Value is 2.38 is more than the Mid- value (2) so the respondents are satisfied with the comfort of the bike.
- The Likert Scale Value is 2.26 is more than the Mid- value (2) so the respondents are satisfied with the engine quality of the bike.

SUGGESTION

- ▲ Most of the respondents came to know about the R15 bike via Television Advertisement.
- ▲ It seems like only high class and upper middle class can R15 bike so the price should also be affordable to lower middle class people below poverty line.
- ▲ This study suggested that the R15 bike sales will not fall even the price increases.

CONCLUSION

The main aim of the study is to analyze the customer satisfaction level towards Yamaha R15 with special reference to Perundurai district. The study analyses various factors which includes the features, body design, engine design, comfort and safety of the bike. There are a large number of factors which influences the youngsters to buy Yamaha R15. Nowadays there are many persons especially youngsters who are willing to buy Yamaha R15. The price of the bike affects the majority. Because, the high class and upper middle class persons are supposed to buy the bike while the lower middle class and the people below poverty line are not affordable to pay.

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THE SOUND-SWITCHING METHOD OF RHYTHM CREATION

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Article DOI: <https://doi.org/10.36713/epra5685>

ANNOTATION

The article discusses the role of sound exchange in creating rhythm. Two types of sound switching are shown: the sounds in the same word are replaced, the sound in one word is replaced by a completely different sound. These substitutions serve for rhythm in both cases, and there is no change in the meanings of the words. These substitutions serve for rhythm in both cases, and there is no change in the meanings of the words.

KEY WORDS AND EXPRESSIONS: *poem, rhythm, different phonetic, different phonetic, classical poetry.*

DISCUSSION

The means of creating rhythm are, in a broad sense, the structural elements of the language system, i.e., models of phoneme, lexeme, and sentence structure. They become units of speech as they are used in speech. By using these units and applying them in different ways, colorful varieties of rhythm are created. These are ways to create rhythm.

It is especially important to systematize rhythm-creating methods based on speech units, which are rhythm-creating factors. Such a system makes it possible to name rhythm factors, group material bases, and draw generalized conclusions about rhythm. Sound falls into the realm of phonetic means as a material factor in the creation of rhythm, i.e. as a segment, as a supersegment event with a function of emphasis and pause separation.

The sound has a different position in the phonetic integrity to which it belongs, i.e., in word and grammatical forms. The position occupied is of two types: strong and weak positions. The strong or weak position of the sound is realized in the vortex of sounds, depending on the effect of side sounds. Based on this position, different phonetic variants of word forms are created.

Sound replacement is one of the ways to create a rhythm, which is replaced based on the position held by the sound, i.e. replaced by the

required sound. There are two types of such sound substitution: one replaces the sound in the same word, and the other replaces the sound in a particular word with a completely different sound. In both cases, there is no change in the semantic structure of the word. In poetry, the phonetic form of the word "black" is also used, which further aggravates the weight of the word. This rhythmic aspect reflects the author's psychology as well as the meaning. The "black" form used in the following byte represents the same situation.

Chunvafosizdurqorako'zlsangaham, eyko'ngul,
Mumkinermasturki, ulko'ziqoro qilg'ayvafo.
[4, 33]

(Since these unfaithful black eyes to you,
Oh, my soul, it is impossible that they have
ever been so faithful!)

The phonetic form of this word in modern Uzbek literary language is "black". However, in the Uzbek poetry of the next and new period, the traditional form is used with the requirement of rhythm

Guloyinning qaroko'zi haqqiy – chun,
Bizniboshla, elimizni zodqil. [18,35]
(For the sake of Guloyin's black eyes,
Lead us, set our people free)

The current psychological state of the poet also plays an important role in the birth of poetic



verses. This aspect is certainly reflected in the attitude towards the chosen word and its form. As the creator selects the most appropriate word from the synonymous line, he pays attention to its sound content (especially in poetry). The same thing can be seen in Alisher Navoi's ghazal.

It can be seen phonetic forms of this word, which were replaced by sound, served to create a suitable rhythm as short-long joints in the formation of in one place and long-short in the second one. But it is absolutely impossible to understand that the substitution of vowels in the words "black" and "black" is possible in any case. The semantic structure of both phonetic forms contains such semantic differences that they cannot be replaced in such cases.

Qalin o'rtogHadicha

Qizlar "qoramag'izi". [11, 14]

(My close friend Khadicha is a black-skinned beauty among all girls)

The "black kernel" used in this duality is not a free phrase, but an inseparable compound - a stable compound equal to one word. Therefore, the concept of "black kernel" does not allow to replace the sound in the form of "black kernel". Even when the word "black" is used immovably, it is not possible to change the position of the sound.

Qondan – terdansuvlangan

Dalalar – oldibong,

Paxtatergan qora qiz

O'zi qoldiyalang'och,

Misr qulikabioch...[15,52]

(Having been watered with blood and sweat,

Uneasiness came to the fields.

A dusky girl, picking up cotton,

Abandoned naked in the field,

And hungry as an Egyptian slave)

The fact that the vowels in the word "black" used in the above verse as a word attributed to a person is black or white does not mean that they are interchangeable. The method of replacing a sound in a particular word with another sound also serves for rhythm. It also serves to organize poetic verses in terms of sound in the process of performing a rhythmic task without changing the meaning of the word.

Aqlujonuko'nglumuloyfurqatizoridin,

Baribir-birdinmalulo'lmishlarumenboridin. [2,391]

(Sufferings of my mind, my soul, and my heart are from estrangement with the Moon (with a beauty). The word "oy" as "a beauty" has a Sufi meaning – the Creator, they all became disappointed, but I remained sad from all of them)

The quoted byte could also be a component of the rhythmic syllable in the form of the word "bori" at the beginning of the second verse. Even as a component of rhythm, it was more modest than the "bari" form. It corresponds to the proximity of the -bo length to the first closed joint of the first stanza, i.e., to the -aq joint. But at this point the sound harmony would not come out to the first syllable of the first stanza. The fact that the vowel "a" in the syllable "ba" is pronounced both short and long according to the weight requirement served this purpose - to ensure that the first syllable is in harmony with the first stanza, along with the rhythmic task. This situation can also be observed in the following bytes:

Dilraboliqfanidamohirsen,

Dahrdasenkebiyo'qbufanaro,

[4,21]

Jondinoyirmoqemasmumkinaningzulfistikim,
Chirmashibturrishtajonimg'ahartor

o'zgacha. [2,500]

O'rtarerdihajrinavmiderkanimda, voykim,
Shavqo'tikum

qilg'udekturbo'lg'alipaydoudim. [2, 104]

(You are skillful in the fascinating kingdom,
There is no one like you in this kingdom.

[4,21]

Her wavy hair cannot be separated from my soul,
Every piece of her hair is woven with every piece of my soul [2,500]

When I lose hope in separation, passion revives (hope) [2,104]

Compounds such as "Sen kebi", "jondin oyirmoq", "hajri navmid" have e-e (e-e), o-o, a-a sound combinations. When these compounds were used in the verses as "like you", "to separate the soul", "hajri novmid", rhythmic sound harmonies did not appear. The sound exchange serves both to ensure equality between the columns along the vertical direction and to serve the rhyme at the same time. Navoi's works are on the fourth tome:

Qorang'udururolamohimtunidin,

Quyoshiyonglig'ochoraziolamoro.[4,9]

(Because of the populace of my grief, the universe became black,

And you, like the Sun, open your face in the Universe) [4,9]

The second tome is presented as follows

Qarong'udururolamohimsaylidin,

Quyoshiyonglig'ochoraziolamoro.[2,10]

(Because of the populace of my grief, the universe became black,



And you, like the Sun, open your face in the Universe) [2,10]

The last syllable of the second stanza of the byte in this way leads to a violation of the inter-line rhythm of the byte and a rhyming disconnection from the other bytes of the ghazal. In the fourth part, first, of all it is adapted to the system of rhyming in the form of "oshkoro - mudaro - yoro - soro - khoro - guluzaro" in the form of "olamaro"; secondly, the word "oraz" is given in the form of "orazi" in three syllables, which are equally and rhythmically equated to the first verse; third, the first word of the byte is given in a phonetic variant in the form of "dark" which is pronounced relatively easily. In the second part, the pronunciation is given in the form of "darkness", which is rather difficult.

The most active words in the large area of sound exchange in creating rhythm are auxiliary words. Because lexical meaning in auxiliary words is not the leading aspect, sound changes do not lead to logical meaning changes in many places.

G'amzao'qinigah-
gahjonimarahmetibotar,
Hasratimuldururkim,
uldavlatitezbot o'tar.[9, 81]

(Now and then, she shoots an arrow to my soul,
And my hope is that such power over me will disappear soon) [9,81]

The "gah-gah" (from time to time) in the first stanza of the second stanza of the verse serves to equate the stanza in the stanza with the other stanzas in the stanza. Its use in the form of "goh-goh" would "aggravate" the rukn in which it was composed from time to time. This is because the presence of three vowels in the "ni goh-goh jo" column reveals this. In Uzbek, the vowel "o" is the longest vowel. [6,681]

Apparently, the change of the vowel "o" to the vowel "a", in this case, clearly corresponds to the rhythmic function.

Babur's focus on rhythm in his rubai, rather than on the vowel "a", is also evident in his choice of the phonetic variants "bori" and "sori" of the words "bari" and "sari". In the two hundred and eight rubai in Devon, "bori" is used three times and "sori" seven times.

In the third and fourth verses of the seventh and eighteenth rubais in Devon, the word "sori" is used instead of "sari."

Hajringdamangesabrqoldi, nesabot,

Yokelbusorig'ayomenio'zunggaqot!

(While being separated, I lost both patience and firmness,
You yourself should come to my side or call forth)

Harikkalasig'amimbilasabrimdek,
Borg'onsoribuortadur,
ulkambo'latur.[5, 71-72]

(As my grief and patience grow,
At the same time they become low.)

In the first two, verses the words "yo", "sori", "yo", "qot", and in the second two verses "borgon", "sori", and "ortadur", "o" is served to organize the verses in a rhythmic way.

In this respect a poem by Uvaysi is very noteworthy. The words "gah" and "goh" continue in a systematic way from the beginning to the end of the seven-byte ghazal in the radifin it. The first verses of the ghazal are as follows:

Ko'rinurbog'arobirdilbarigahrost, gohekaj,
Yuuzratatvilhaydarigahrost, gohekaj.[14, 32]

(One beautiful girl in the orchard can be admired from all around,

On her face you can see two pigtailed going down from her temples onto her chest,

The pigtailed can be seen at a time clear, at a time wrong side out)

The effect of using "gah" in the first verse and "goh" in the second verse of the radifs in the ghazal verses is as follows: 1) The sound balance of the rhythm is created: the word after the word "gah" has a vowel "o" in the word "rost" the word after the word "goh" has a vowel "a" in the word - kaj. The pronunciation of these vowels is not the same, they differ in degree of. In Uzbek, the vowel "o" is, as mentioned above, the "longest and most stable" vowel. [6,681]

Apparently, the sound exchange serves to organize the poetic verses in terms of sound harmony, as well as to create and fill a system of rhyme, and thus to ensure the rhythm in terms of metric and melodic adaptation.

Sound substitution in the poetry of the new period, in relation to history, performs the functions of organizing verses in terms of sound, creating rhyme and rhythm, as in classical poetry. For example, in Abdulla Aripov's poem "Noma" it is replaced for rhyming and rhythmic task.

Biztomonga, eynigora, neballo,
birkelmading,

Ko'zlarimgabo'ldidunoyotimqaro,
birkelmading. [12,103]

(Oh beauty, what a disappointment, you didn't come to us.

The whole world became dark in my eyes)

In addition to being a rhyme for the words "balo" and "qaro" in the byte, the verses also served for rhythmic metric equality.



On the role of sound substitution in the poetry of Muhammad Yusuf, M. Abdupattoev and Z. Karimova write:

“Ko’nglingiznioldimishumyangolari,
Aldabyo’lgasoldimiyoxiylolari,
Ko’zingiznioldimiyotillolari,
Sevgimiznizarlargasotdingizmi?”

(“If the two treacherous daughters-in law made you fall for their deception? If you ever sold your love for their richness?”)

In our example, the words "yangolari", "hiylolari" use the sound "o" instead of "a". This condition is specific to oral speech and is a violation of the literary norm for literary language. It is precisely this situation, which is peculiar to the style of speech of the vernacular, that the poet used it without bringing it to the literary norm, thus, firstly, preserving the melody in the verses, and secondly, in this way emphasizing the meaning of words ... " [1,120]

The first three stanzas of the quartet also have a rhyme of “oldimi-soldimi” (fall for believe a lie / a trick etc; indoctrinate into believing) and another systematic melody. This makes the rhythm feel stronger with the tone. The words "yangolari - hiylolari - tillolari" depict a small episode in the wedding process, which is distinguished by the tradition of oral art, with the use of the letter "o" instead of "a". In this imagery, rhythm plays an important role with its uplift. The length of the vowel "o" also reveals the melody in folk songs. Another important point is that the vowel “a” in the words “yangalari, hiylalari, tillalari” cannot represent the tragic pathos represented by the substituted vowel “o”.

Apparently, rhythm is not just a repetition of equal things at equal distances. The rhythmic organization of poetic texts also reflects the general psychological situation during the speech, the speech; in this case singing also represents the psycho-spiritual attitude of the will to the current situation. Here is what it represents the relationship. In this case that the poetic rhythm also changes.

When talking about the role of sound in poetry, attention is usually paid to the elongation-shortness characteristic, which is more characteristic of vowels. But the change of sound is not related to this. Sound articulation and acoustics must be taken into account. Sound articulation is a physiological phenomenon that has its own formant, i.e., sound does not occur with the activity of a single speech organ. There are several parts of such speech, the most active of which are the tongue and the lip. In the process of sound formation, the parts of speech

perform physical work, and in connection with this activity, and as a result, there are differences in the acoustics of sounds. The separate pronunciation of Uzbek vowels is 1.3 times longer than the pronunciation of sounds. [10,49] Apparently, substituting a sound in one of the syllables in a word, in general, serves to bring it closer to its individual pronunciation by emphasizing this alternating sound and separating it from other syllables. The artistic power of sound substitution, the high degree of effectiveness, depends entirely on how the lyrical experience is expressed.

“...while the lyrical protagonist's experience creates a reader-hero or reader-text relationship as an exposition” [8.79.] of the movement, G. Ghulam informs the reader about the history of artistic reality (these are many ancient ways) expressed in the exposition of his poem "On the Turksib Ways" and introduces the reader to the poetic world through his experiences. The phrase "these paths are many ancient paths" as a frequently repeated passage in a large work "represents both outer space and time." [8.79] Sound exchanges are also associated with this outer space and time, and give the impression that they are exchanged in this space and time. This is evidenced by the fact that in Ghafur Ghulam's poem "On the Ways of Turksib" the short vowel "i" in seven places is replaced by the longest and most vowel "o".

Xuddi

shuyo’ldan
zangurib,
Childirmaqoqaroq...
Takbiryayqirib
– Qurbon! – deb,
– Qurbon!
– debkechmishlar

Nomuchun,

shonuchun
savlatsotaroq...
Ham-ma-si,

Ham-ma-si,

Shuyo’ldankechmishlar.

Yengishdovulinchalaroq

G’urur-lakechmishdir.

...Yanadanbirsokitlikcho’kar,

chizaroqdoira –
Shivirlabjimganday
Uko’lninglabi.

Tarixdaengporloq –



o'laroq birsafha
Qoldiribbotir...

Tarixningchirkinlavhasin
yoraroq... [16, 41-46]

(Right by this way, signaling,

Enjoying a small triumph and demanding
sacrifice,

We went through.

For glory, for fame, showing their
importance,

All of them, all of them went through this
way.

Playing the victorious drum of a nocturnal
guard,

They went through this way with honor.

The shores of the lake, having drawn
their periphery of circle, become
silent.

The rich imprint their glorious names in
history.

The first sad page in history...)

In the first paragraph, the combination of "knocking" and "screaming" would be consistent with the combination of "knocking" and "shaking tambourine". But the "i" in the vowel of ordinary sounds does not attract attention, the "o" used instead draws the necessary attention, approaching the pronunciation of the individual. With this, the pulpit, the journalistic spirit, the note was created on the upper curtain. The use of the "o" sound instead of the very short, unintelligible "i" in the Uzbek language played an important role in the creation of a high and strong note, a high solemnity. The uplift in the rhythm is due to this sound exchange. It reflects the artist's psychological response to the current situation in the period in which the speech is being expressed, as well as his emotional passions. The same can be said of "sotib-sotaroq", "chalib-chalaroq", "chizib-chizaroq", "yorib-yoraroq". This is the connection of psychologism with the vowel (the vowel "o" instead of "i"), which is associated with the nature of sound.

The vowel change is also used in other poems by Ghafur Ghulam, including "Amu":

Ko'hnaXorazmninggulbog'laridan
Kelinyurishi-
lakulibboqaroq,
Bosganyo'llarinichamanga
burkab,
Turkmanvohasiga
qondayoqaroq. [17. 253]

(Out of the gardens of Ancient Khorezm,
Smiling and walking like a bride,
Covering her way with flowers,
She flows into the Turkestan Oasis)

The change of sound is peculiar not only to pulpit-publicist poems, but also to poems of other contexts. It depends on the skill of the creator, and the above verses confirm this idea. The phenomenon of sound change is also observed in the works of Maqsd Shaykhzoda.

Qanotqoqibxayolim

Kelajakdengizidan

Osharoq,

Kengfazolargauchdi;

Qulochoitib

Jo'sharoq,

Erta- indinni quchdi. [15.51]

(My thoughts, surpassing
the vastness of the future,

flew into outer space,

flapping wide wings, raging

embraced the day after
tomorrow)

It should be noted that in the process of such sound changes, there are also changes in the number of syllables in words: "oshib", "joshib" are two-syllable words, "asharoq", "josharak" are three-syllable words. This, of course, also changes the rhythm of the verses.

In M. Shaykhzoda's poems, the vowel "i" is replaced by the vowel "o", as well as the vowel "a": instead of "minib" in the form of "minarak".

Zamon o'zangisini
Oyoqbosibminarak.

Istaredimsuvorlanayseningdek... [15.57]

(Keeping up to date,

I would like to be ahead

Keep up to date

Keep pace with the times...)

By using the word "minib" in the form "minarak", the word equated the verse with the syllable before it in terms of syllable - served for rhythm, and the words "suvorlanay", "seningdek" ("like you") also served to create a rhythmic harmony to the sound: minarak "Corresponds to the two vowels in the words "suvorlanay"; Adapts the last syllable of the word "minaret" to the last syllable of the word "seningdek" ("like you").

Such changes in the joints do not change the content in terms of information transmission, conveying the message, it leads to a lively emotional state, which represents a high pathos, a high note, a strong passion. These are, of course, reflected in the rhythm of the poem. It provides a sharp variability of rhythm at high and low levels. The psychological state of both the author of the poem and the reader who reads it is reflected in this diversity.



The method of sound substitution rhythmically differentiates the syllable in the turak (rukn), drawing attention to it. This very sound change creates a completely different rhythm.

The fact that sound is not only a material material for the transmission of thoughts, but also a means of revealing the mental and psychological state, is perfectly expressed in the above lines of Ghafur Ghulam.

While the spiritual image of man depicts the psychology of the words he uses, Ghafur Ghulam's passionate spiritual world portrays both the words and the rhythm of the poem "On the Ways of Turksib" in accordance with this spiritual world.

This means that each word has its own stylistic passport [7.53,198] as well as its psychological passport. This takes place in close connection with the sound complex that creates meaning.

The change of sound also depends on the spiritual-psychological mood of the poet at a certain period. In general, artistic creation, especially poetry, which is closely related to speed, intensity, musicality and rhythm, is not only an artistic and aesthetic creation, but also a psychological activity. The poet's attitude to nature and natural phenomena, to the social content of the society in which he lives, is also reflected in his soul. This psychological process is also reflected in the poet-creator's attitude to sound. The poet chooses a sound that suits his soul. The altered sound in the word structure is a peculiar element of the rhythm, in the exchange of which there is no pause, and in this exchange there is a striking emphasis. The psychological effect of a word that does not change its sound is not the same as that of a word that does not change its sound.

E.R. Tenishev regulates the language, that is, the governing factor is two, one of which is a material factor, in which the formation and reproduction of sounds in the process of sound change in the language is regulated, controlled; the second is a psychological factor, in which sounds are arranged according to their use in thought transmission. E.R. Tenishev goes on to say that I.A. Baudouin de Courtenay and V. on the concept of factors of language management, regulation (regulation). V. Radlov writes that they considered the phoneme to be the psychological equivalent of a sound. [13, 37-38]

Sound participates in the process of conveying the poet's thought, in general, of any speaker, as a material part of thought, and at the same time serves as a means of expressing human passions as well. It is the most active component of rhythm creation.

So, the ways of creating rhythm in Uzbek poetry are diverse. The distributive position of the sound in the word also plays a role. Replacing the same sound in the same word is one way to create a rhythm by replacing a sound in a word with a completely different sound.

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THE ROLE OF BABUR'S SPIRITUAL HERITAGE IN STRENGTHENING PATRIOTISM AMONG THE YOUTH OF UZBEKISTAN

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ABSTRACT

This article highlights the importance of Babur's spiritual heritage in the implementation of state youth policy in strengthening the patriotic ideas in their consciousness, studying the heritage of their ancestors, education and activities.

KEY WORDS; *Youth, state policy on youth, Motherland, patriotism, patriotic spirit, spirituality, valuable, enlightenment, morality, Babur, Baburname, ruler and poet, spiritual heritage, Oriental culture.*

DISCUSSION

As the state pursues its policy, it naturally accepts the youth stratum as the basis that determines its foundation and prospects. After all, the youth is the most important socio-political force of the state. In this regard, the President of the Republic of Uzbekistan Shavkat Mirziyoyev said: "It is known that the education of the younger generation has always been important and relevant. But in the 21st century, where we live, this is really a matter of life and death" [1, p. 504-505].

Indeed, at the same time, the assimilation of universal achievements, the upbringing of the younger generation on this basis is at the heart of the large-scale reforms being carried out in our country today. Therefore, the state youth policy aimed at ensuring the active participation of young people in the socio-economic and political life of the country, raising a comprehensively healthy and harmoniously developed generation with high spirituality, independent and free thinking, thoroughly mastering the achievements of modern science is being consistently implemented.

It is also patriotic to carefully pass on the wealth created by our ancestors and bequeathed to us

to the next generation. The development of patriotism and humanism in the development of people's spirituality will inevitably become an important guarantee of the future of independent Uzbekistan.

As the President of Uzbekistan Sh.M.Mirziyoyev noted, "It is especially important to form in our young generation a firm position in life and a high sense of responsibility for the fate of our Motherland"[2, p. 162].

By inculcating in the minds of our youth the courage of our national heroes, such as Shirak, Jaloliddin Manguberdi, Temur Malik, Najmiddin Kubro, Amir Temur and Zahiriddin Muhammad Babur, who fought valiantly against the enemy in the name of freedom and independence of the country, it is important to strengthen their sense of patriotism.

In this regard, President Shavkat Mirziyoyev expressed the following views on the example of Babur: "Let's take our great ancestor Zahiriddin Muhammad Babur." From the age of twelve, this great man set himself on fire and to save the Timurid state, and was not afraid of any enemy or trial. Forty-seven years of his life passed without a moment's pleasure. He bequeathed to his descendants a great love for the Motherland and virtues"[3, 8-9p].



Zahiriddin Muhammad Babur is a writer, poet, scholar, as well as a great statesman and commander, who played a special role in the culture, literature and poetry of the Middle East. Babur, with his broad outlook and perfect intellect, founded the Baburi dynasty in India and made a name for himself as a statesman in the history of this country. His elegant ghazals and rubais are the rarest masterpieces of Turkish poetry, and his treatises on Mubayyin (Narrated), Khatti Baburi, Military job and Aruz have made a worthy contribution to the fields of Islamic jurisprudence, poetry, and language theory.

Babur's qualities as a person are also commendable. He was a brave serviceman and an experienced commander. Babur was not afraid of death because he had been involved in battles since childhood. The Indian scholar L.P.Sharma writes: "He was an excellent rider, a skilled sniper, a skilful swordsman and an experienced hunter" [4, 25p]. He never lost his tenacity and was always able to use his willpower to correct himself when he fell in a fight, gaining experience in battles. These qualities of Babur encourage our youth today to overcome difficulties, be patient and strong-willed.

He was a strong politician, tolerant and just king in public administration. Babur's teachings on public administration are also numerous. In this regard, he emphasizes in the Baburname that the king is very prudent in defending the independence of the country, acts with advice, does not act hastily. At the same time, his views on the means necessary to protect a city or country are also noteworthy. He symbolically says that the defense of the country requires a head, two arms, and two legs. you need a head to cover the castle, you need two hands, you need two idols. May he be the commander-in-chief, may the two hands be the support and help from both sides, may the two idols be the source of water for the fortress "[5, p. 221].

Babur was a patron of science, culture and art. In the presence of Babur and his ruling descendants, a perfect spiritual atmosphere was created, which brought together the advanced and sharp-witted scholars, poets, musicologists and statesmen of that time. The cultural environment in the Baburi state was of great importance to India. Great attention to the cultural environment in the country gives its positive results. Today, great work is being done in our country to glorify the Motherland and contribute to its development, especially by introducing young people to science, culture and art. In particular, the adoption of the "Five important initiatives" put forward by the President of the Republic of Uzbekistan Sh.M.Mirziyoyev on March 19, 2019 to raise the morale of young people and the meaningful organization of their leisure time" is not accidental.

Babur's world-famous masterpiece is the Baburname. As we read the work, we see the qualities and shortcomings of the peoples of Central Asia, Afghanistan and India, as well as the breadth and complexity of their world of thought, the problems of life at that time, the full picture of political and social life in Babur. Such information given in the "Baburname" is not so clearly and perfectly reflected in the works of other historical sources written during the reign of Babur - Mirkhand, Khandamir, Binoi, Muhammad Haydar, Abul Fazl Allami and other historians. In "Baburname", the king and poet expressed their views and opinions about Alisher Navoi, Abdurahmon Jami, Behzod, Mirzo Ulugbek and other scholars.

"Baburname" as a vivid example of Uzbek prose of the XV century is rich in pure art, vivid images and traditional lyrical digressions. Folk proverbs, phrases, exemplary teachings and poetic passages quoted in the prose text further enhance its artistry, giving it a unique charm. The Baburname is currently being translated and studied in several languages. Today, our youth can increase their knowledge in linguistics, literature, art, architecture, religion, martial arts, geography, ethnography, law and other fields through Babur's "Baburname" and other works. For this, young people are required to read and study these works as a spiritual heritage of our great ancestor. Sufficient conditions have been created in our country for this, and great attention is being paid by the head of our state. As a proof of this, we believe that the instructions and tasks given by President Shavkat Mirziyoyev during his visit to the Alley of Writers on May 20, 2020 in Tashkent are sufficient.

In short, today each of us must not forget about the feeling of homeland, patriotism. After all, the feeling of homeland is determined by love for the land where you were born and raised. Faith and love for the motherland must be instilled in the minds of everyone. Patriotism is a spiritual belief inherited from our ancestors. Therefore, the task of studying the invaluable cultural and spiritual heritage of our ancestors in depth and comprehensively and inculcating them in the minds and hearts of everyone living in our country, especially educating young people as spiritually mature, patriotic and selfless people must become the goal and task of our society.

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MORPHOBIOLOGICAL CHARACTERISTICS OF INTROGRESSIVE HYBRIDS OF COTTON

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ABSTRACT

*In the article was presented the results of estimation on morphologic, biologic and an economic value of hybrids F_1 obtained on the basis of interspecific crossings of cultivated (*G.hirsutum* L.) and wild (*G.arboreum*, *G.australe*, *G.nelsonii*) cotton species with use of the polyploidy method. Obtained on the basis of intergenomic crosses the new synthetic complex hybrid forms have in their karyoplasm potential of yield and resistance to biotic and abiotic environmental factors that have an special importance for the practical breeding as an initial material in the development of new cotton cultivars of intensive type.*

KEYWORDS: *cotton, cultivar, interspecific hybridization, experimental polyploidy, hexaploid, colchicine.*

DISCUSSION

Today, there are great opportunities to improve the efficiency of genetic and breeding research based on the search for sources with economically valuable traits and properties and the creation of rare hybrid forms with new genotypes of the cotton genus by applying methods of intraspecific and interspecific hybridization.

It is known that with the participation of representatives of tetraploid and diploid species of the genus *Gossypium* L., using methods of interspecific hybridization and experimental polyploidy, a number of scientists were able to obtain economically important agricultural diseases (*gommosis*, *fusariosis*) and sources against pests (*spider mites*, *aphids*) [1, 4-5].

S.M.Rizayeva [2-3] obtained a set of amphidiploid and hexaploid rare forms with high economically valuable characteristics on the basis of mutual hybridization of distant intergenomic species.

We conducted experimental studies on remote hybridization involving wild diploid species of the Australian continent with *G.arboreum* L. and *G.hirsutum* L.

Knotting of the box in hybrid combinations of *G.hirsutum* ssp. *euirsutum* (Kelajak) x (*G.arboreum* ssp. *nanking* (with white fiber) x *G.nelsonii*), (*G.arboreum* ssp. *nanking* (with white fiber) x *G.nelsonii*) x *G.hirsutum* ssp. *euirsutum* (Kelajak) reciprocals obtained by crossing varieties of *G.hirsutum* ssp. *euirsutum* with hybrids (F_1) created on the basis of interspecific hybridization of Australian and Indo-Chinese cotton species is 3,3-8,0%, the binding rate of full-fledged seeds in the box is 33,3-38,5%. And hybrid combinations of *G.hirsutum* ssp. *euirsutum* (Namangan 77) x (*G.arboreum* ssp. *obtusifolium* var. *indicum* x *G.australe*), *G.arboreum* ssp. *obtusifolium* var. *indicum* x *G.australe*) x *G.hirsutum* ssp. *euirsutum* (Namangan 77) reciprocals knotting of the box is 5,9-9,1%, knotting of full-fledged seeds in the box is 16,7-55,8% (table 1).



Table 1.
Knotting of the box and full-fledged seeds in the box during interspecific hybridization of different genomic species

Hybrid combinations	Number of crosses, pieces	Number of hybrid boxes, pieces	The percentage of the set of hybrid boxes, %	The number of seeds tied, pieces		The percentage of the set full of seeds, %
				Full	empty	
<i>G.hirsutum</i> ssp. <i>euhiirsutum</i> (Namangan 77) x (<i>G.arboreum</i> ssp. <i>obtusifolium</i> var. <i>indicum</i> x <i>G.australe</i>)	22	2	9,1	48	38	55,8
(<i>G.arboreum</i> ssp. <i>obtusifolium</i> var. <i>indicum</i> x <i>G.australe</i>) x <i>G.hirsutum</i> ssp. <i>euhiirsutum</i> (Namangan 77)	17	1	5,9	2	10	16,7
<i>G.hirsutum</i> ssp. <i>euhiirsutum</i> (Kelajak) x (<i>G.arboreum</i> ssp. <i>nanking</i> (with white fiber) x <i>G.nelsonii</i>)	30	1	3,3	9	18	33,3
(<i>G.arboreum</i> ssp. <i>nanking</i> (with white fiber) x <i>G.nelsonii</i>) x <i>G.hirsutum</i> ssp. <i>euhiirsutum</i> (Kelajak)	25	2	8,0	15	24	38,5

It should be noted that the appearance of enlargement and thickening of leaves in hexaploid hybrids, an increase in internodes and deformity of pods indicate mutational variability. On grounds of form and colour of petals, shape of bracts, parent, columns, color of anthers and pollen, the color of the fiber is dominated by the female parent. In F₁C hexaploid hybrids, as in varieties of *G.hirsutum* ssp. *euhiirsutum*, the inheritance of an anthocyanin spot at the base of the petal is noted. The intermediate nature of inheritance by morphobiological (shape and color of boxes, seed size) and many other quantitative characteristics was revealed.

Morphobiological characteristics of F₁C hexaploid hybrids (2n = 78)

F₁C *G.hirsutum* ssp. *euhiirsutum* (Namangan 77) x (*G.arboreum* ssp. *obtusifolium* var. *indicum* x *G.australe*) hexaploid hybrids (2n = 78) – erect compact form, leaves are located in medium density (figure 1).

The height of the main shoot is 85,0 cm, with weak pubescence and strong anthocyanin redness. The total number of internodes is 22. The branch is sympodial, the first sympodial branch (hs) is located on the 7-internode, monopodial branches (m) are absent, the sympodium (s) is 16 PCs. Leaves are large (11,5 x 12,3 cm), green, 3-5 palmate, toothed (thick and long teeth). The omission is weak. Nectary – 3, ovoid, colorless. The leaf petiole has a strong anthocyanin redness 14,2 cm long. Flowers are medium-sized, bell-shaped, open in an average width. The volume of the petals is 5,6 x 4,4 cm, wavy shape, bright yellow, anthocyanin spot at the base is not present. Peduncle length 1,4-1,6 cm.

Bracts-3, heart-shaped with 9-11 teeth, the length of the teeth is 0,5-2,1 cm. the Sepals are wavy, bright green, gossypal glands are located in an average density. Anthers on the stamen thread are located in an average density. The stamens and anthers are yellow. The mother column is located 0,3 cm above the stamen columns. Boxes 4-5 nest, egg-shaped, green, medium-sized. The weight of cotton in one open box is 3,9-5,8 g, the white fibers are 33,0-37,0 mm long. Seeds of medium size, weight of 1000 seeds-72,4-103,6 g. Valuable features-do not require a short day, productive, branching type 1.

F₁C *G.hirsutum* ssp. *euhiirsutum* (Kelajak) x (*G.arboreum* ssp. *nanking* (with white fiber) x *G.nelsonii*) hexaploid hybrids (2n = 78) – erect, compact form, leaves are located in medium density. The height of the main shoot is 75,0 cm, average omission, strong anthocyanin redness. The total number of internodes – 18 PCs. Branching-sympodial, the first sympodial branch (hs) is located on 5-6 internodes, monopodial branches (m) 1-2 PCs, Sympodium (s) - 12 PCs. The leaves are large (12,5 x 14,0 cm), green, 3-5 palmate, toothed (the denticles are thick and long). The omission is weak. Nectary – 3, ovoid, colorless. The leaf petiole has a strong anthocyanin redness 15,8 cm long. Flowers are medium-sized, bell-shaped, open in an average width. The volume of the petals is 4,8 x 4,7 cm, wavy, bright yellow, there is no anthocyanin spot at the base. Peduncle length 0,8-1,0 cm. Bracts-3, heart-shaped with 8-10 denticles, denticles length 0,5-1,8 cm.

The sepals are undulating, bright green in color, and the gossypole glands are located in an



average density. Anthers on the stamen thread are located in an average density. The stamens and anthers are yellow. The mother column is located 0,2 cm higher. Boxes 4-5 nest, egg-shaped, green, medium-sized. The weight of cotton in one open box

is 4,8-7,5 g, the white fibers are 33,0-36,0 mm long. Seeds of medium size, weight of 1000 seeds-120,6-131,0 g. Valuable signs - not demanding for a short day, productive, resistant to gnawing and sucking pests (figure 2).



Figure 1. F₁C *G.hirsutum* ssp. *euhirsutum* "Namangan 77" x (*G.arboreum* ssp. *obtusifolium* var. *indicum* x *G.australe*)



Figure 2. F₁C *G.hirsutum* ssp. *euhirsutum* "Kelajak" x (*G.arboreum* ssp. *nanking* (with white fiber) x *G.nelsonii*)

Thus, the studies revealed that hybrids (F₁) derived from crossing Indochina (A₂ genome) and Australian (gene) of wild diploid species of cotton plant with cultivars (AD₁ genome) of *G.hirsutum* L. interbreed very difficult or do not interbreed. The knotting rate of hybrid boxes is very low, 3,3-9,1, which shows. And the percentage of binding of full-fledged seeds in the box showed relatively high results (16,7-55,8%).

Difficult crossing of wild diploid cotton species with cultural (tetraploid) varieties, especially absolute non-crossing with participation as a mother, that is, the phenomenon of proteandria (maturation of the maternal column and stamens at different times) is probably due to their belonging to different geographical ecotypes. It should be noted that such cases between crossed species form certain genetic obstacles. The main morphobiological features of F₁C hybrids (shape and color of petals, bracts, parent columns, color of stamens and anthers, fiber color) are dominated by the maternal forms. Along with this, at the base of the petal of all studied hybrids, as in the variety *G.hirsutum* L., there are no anthocyanin spots.

New artificial complex hybrid forms obtained on the basis of intergenomic hybridization have a complex in their karyoplasm of productivity potential

and resistance to biotic and abiotic environmental factors, which will serve as a rare source material for practical selection in the creation of new varieties of intensive type of cotton.

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A STUDY ON IMPACT OF TELEVISION ADVERTISEMENT ON CONSUMER BUYING BEHAVIOUR IN FMCG PRODUCTS WITH SPECIAL REFERENCE IN COIMBATORE CITY

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ABSTRACT

Television advertisement is considered one of the most effective medium to influence the purchase decision of consumers. This study aims to analysis the impact of television advertisements on the buying behavior of FMCG customers. The data was obtained from the general public Coimbatore district. A sample of 110 questionnaires were circulated, recorded and compared. Results indicate that most of the respondents felt that they were influenced by food items and hair care products advertisements were influence to buy those products. It is noticed that most of the respondents expressed that advertisement are entertaining and call to mind. The findings from the study depict that FMCG advertisements are successful in creating impact on buying behavior of the FMCG products, particularly about the food items and skin care products. The customers are expecting much information from the short advertisements. It is suggested that the advertisement need to be more informative. It can be inferred that advertisements lead to the digital money transactions and created more awareness.

KEYWORDS: *Advertisements, Buying Behavior, FMCG*

INTRODUCTION

Fast Moving Consumer Goods (FMCG) or Consumer Packaged Merchandise (CPG) are items that are sold rapidly and at generally low cost. In spite of the fact that the net revenue made on FMCG items is generally little (more so for retailers than the makers/providers), they are for the most part sold in huge amounts; accordingly, the total benefit on such items can be generous. FMCG is likely the most exemplary case of low edge and high volume business. The Indian FMCG area is the fourth biggest division in the economy with an expected size of Rs.1,300 billion.

The area has seen enormous normal yearly development of about 11% per annum finished the most recent decade.

A TV ad (likewise called a TV advertisement, business, advert, TV advert or essentially a promotion) is a range of TV programming created and paid for by an association. It passes on a message advancing, and planning to showcase, an item or administration. Sponsors and advertisers may allude to TV ads as TVCs.



STATEMENT OF THE PROBLEM

In India FMCG showcase has been isolated for quite a while between the composed part and the sloppy area. At present there is a gigantic open door for assembling marked items and purchasers can be convinced to purchase marked products. The new contestants in this market have featured a solid challenge in key fragments like Toilet cleanser, Shampoo, Talcum powder, Tooth glue by the outside organizations, which straightforwardly influences the benefit position of Indian brands. Then again, an enormous piece of the marked market is persistently undermined by misleading products and unlawful remote merchandise.

OBJECTIVES OF THE STUDY

1. To understand the Demographic profile of the Customers of FMCG.
2. To analysis the buying behavior of customer of FMCG by Television.
3. To identify the Factors influencing of FMCG products through TV.

TOOLS FOR ANALYSIS

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

LIMITATION OF STUDY

- The study was limited to Coimbatore city only
- The sample was confined to 110 respondents
- The data was obtained through questionnaire and has its own limitations

REVIEW OF LITERATURE

Chang, Angela Ya-Ping (2017) studied the Effects of Sales Promotion on Consumer

Involvement and Purchase Intention in Tourism Industry. The study results present the significant correlations between Sales Promotion and Consumer Involvement, Consumer Involvement and Purchase Intention, and Sales Promotion and Purchase Intention.

Gopisetti, Rambabu (2017) attempted to study the factors affecting the Consumer Buying Behaviour towards selected Personal Care Products. The researcher collected from 200 respondents of Nizamabad District with structured questionnaires. In this regards Television, Quality and Brand loyalty are the powerful factors to influence the consumer buying behaviour.

Television is the powerful tool for spreading the information of brands to the final consumers.

DATA ANALYSIS AND INTERPRETATION

In this chapter the analysis and interpretation of “A study on impact of television advertisement on consumer buying behaviour in FMCG products with special reference in Coimbatore city”, is presented based on the opinion of samples of 110 respondents selected from Coimbatore city through a questionnaire containing 21 questions. These were analyzed through three different tools and they are as follows,

- Simple Percentage analysis
- Rank Correlation
- Likert scale Analysis

SIMPLE PERCENTAGE ANALYSIS

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

FORMULA

$$\text{Percentage} = \frac{\text{Number of Respondents}}{\text{Total Number of Respondents}} \times 100$$

**TABLE NO: 1**
TABLE SHOWING GENDER OF THE RESPONDENTS

S.NO	PARTICULARS	NO. OF. RESPONDENTS	PERCENTAGE
1	MALE	80	72.7
2	FEMALE	30	27.3
	TOTAL	110	100

*(Source: Primary Data)***INTERPRETATION**

The table 4.1.1 shows that 72.7% of the respondents are Male and the 27.3% of the respondents are Female.

Majority 71.3% of the respondents are Male

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 sequence from strongly positive. Used mainly in behavioral science, in likert's methods a person's attitude is measured by

combining (adding or averaging) their responses all items.

FORMULA

Likert Scale = $\frac{\sum(Fx)}{\text{Total Number of Respondents}}$

F=No.of respondents

X=Likert Scale Value

(Fx)=Total Score

MID VALUE

Mid- Value indicates the middle most value of the likert scale.

TABLE NO: 2
TABLE SHOWING THE FEATURES ADVERTISED IN TELEVISION MESSAGE IS UNDERSTANDABLE

S.NO	FACTORS	NO. OF. RESPONDENTS(F)	LIKERT SCALE VALUE(X)	TOTAL(FX)
1	Highly Satisfied	30	4	120
2	Satisfied	57	5	285
3	Neutral	17	3	51
4	Dissatisfied	6	2	12
5	Highly Dissatisfied	2	1	2
	TOTAL	110		470

(Source: Primary Data)

Likert Scale = $\frac{\sum(FX)}{\text{Total Number of Respondents}}$
 = $\frac{470}{110}$
 = 4.27

INTERPRATATION

Likert scale value is 4.27 greater than the middle value (3), so the consumers are satisfied in the MESSAGE IS UNDERSTANDABLE

RANK ANALYSIS

A rank analysis is any of several satisfies that measure an ordinal association. The relationship

between ranking of different ordinal variables or different ranking of the same variable, where a "ranking" is the assignment of the label "first", "second", "third", etc. to different observations of a particular variable. A rank analysis measures the degree of similarity between two rankings, and can be used to assess the significance of the relation between them.



TABLE NO: 3
TABLE SHOWING WHAT TYPE OF ADVERTISEMENTS YOU PREFER?

SNO	FLAVOUR	RANK I	RANK II	RANK III	RANK IV	RANK V	TOTAL SCORE	RANK
1	Descriptive	33(5)	19(4)	27(3)	21(2)	10(1)	374	1
2	Information	9(5)	37(4)	27(3)	23(2)	14(1)	361	2
3	Technical	16(5)	18(4)	36(3)	24(2)	16(1)	324	3
4	Interesting	10(5)	21(4)	30(3)	23(2)	26(1)	296	4
5	Funny	9(5)	25(4)	25(3)	22(2)	29(1)	293	5

(Source: Primary Data)

INTERPRATATION

The table 4.3.1 shows that the out of 110 respondents, Descriptive is in the rank 1, Information is in the rank 2, Technical is in the rank 3, Interesting is in the rank 4 and Funny is in the rank 5

INFERENCE

If resulted that Descriptive is in rank 1 and it is influences the respondents to prefer Advertisements.

- Majority 72.7% of the respondents are Fully satisfied the advertisements play any role towards brand preference
- Majority 45.5% of the respondents advertisement influenced on positive impression.

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS

SIMPLE PERCENTAGE ANALYSIS

- Majority 71.3% of the respondents are Male
- Majority 60.9% of the respondents are 21 years- 30 years
- Majority 73.6% of the respondents are the Under Graduate
- Majority 46.4% of the respondents Educational qualification are Students
- Majority 45.5% of the respondents are earning below 1 lakh
- Majority 83.6% of the respondents are Unmarried.
- Majority 39.1% of the respondents come to know about prefer to make purchase Departmental store.
- Majority 74.5% of the respondents, Tells Yes television advertisement attract you to buy on FMCG product
- Majority 41.8% of the respondents are Remember it when you make a purchase after watching a television advertisements.
- Majority 72.7% of the respondents are fully satisfied on television advertisement influence your brand choice.
- Majority 55.5% of the respondents are Agree to change a FMCG products by seeing a celebrity in television advertisements.

LIKERT SCALE ANALYSIS

- Likert scale value is 4.27 greater than the middle value (3), so the consumers are satisfied in the MESSAGE IS UNDERSTANDABLE.
- Likert scale value is 4.25 greater than the middle value (3), so the consumers are satisfied in the BELIEVABLE.
- Likert scale value is 4.33 greater than the middle value (3), so the consumers are satisfied in the EDUCATIVE.
- Likert scale value is 4.18 greater than the middle value (3), so the consumers are satisfied in the PRODUCT BENEFIT.
- Likert scale value is 3.97 greater than the middle value(3), so the consumers are satisfied in the BUY THE PRODUCT AFTER VIEWING THE ADVERTISEMENT
- Likert scale value is 4.25 greater than the middle value (3), so the consumers are SATISFIED WITH FMCG GOODS.
- Likert scale value is 5.5 greater than the middle value (3), so the consumers are SATISFIED WITH FMCG GOODS BY WAY OF TELEVISION ADVERTISEMENT



RANKING ANALYSIS

- If resulted that Descriptive is in rank 1 and it is influences the respondents to prefer Advertisements.
- If resulted that Background is in rank 1 and it is influences the respondents to prefer Advertisements.

(A Study of Selected Personal Care Products in Nizamabad District of Telangana State), *IOSR Journal of Business and Management*, 19(11), 54-59

3. **Asha K (2016)** *Impact of Television Advertisement on Buying Behaviour of Rural Consumers towards FMCG in Kanyakumari District*, *Journal of Chemical and Pharmaceutical Sciences*, 9(4), 1827-1831

SUGGESTIONS

The following are the implications from the study:

- The findings from the study depict that FMCG Advertisements are successful in creating impact on buying behavior of the FMCG products, particularly about the food items and skin care products
- As per the findings of the study, it is suggested that customers are expecting many information from the short advertisements.
- Hence the advertisement agencies should focus on that.

CONCLUSION

- The FMCG products are Fast Moving Consumer Goods, but the advertisements for such products are not fast moving in creating responses among its consumers.
- The present study aimed at studying the impact of television advertisements on buying behavior of the FMCG products.
- The study portrayed very interesting results and thus it is concluded from the study that female customers are most attracted by the advertisement and influence to buy the FMCG products
- The study proved that there is a significant variation among gender and income level on the issue that TV advertisements enhance the engagement process of buying.
- It can also be concluded from the study that buying behaviour of female individuals is more influenced by the television advertisements than their male.

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URWA BIN AL-ZUBAIR BIN AL-AWAM

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HIS LINEAGE AND LIFE

He is Orwat al-Zubayr bin al-Awam bin Khuwaylid bin Asad bin Abd al-Uzzi bin Qusay bin Kalab al-Asadi al-Qurashi al-Madani jurist (1).

HIS NICKNAME IS "ABU ABDULLAH"

His birth was born Urwa in Medina 26 AH .His father, Al-Zubair bin Al Awam, is one of the ten known companions of Paradise His paternal grandmother Safia bint Abdul-Muttalib, mother of his father Al-Zubayr and uncle of the Messenger (may God bless him and his family and grant them peace).2).

His mother Asma bint Abi Bakr "That Al-Nitaqain" ((may God be pleased with her).

His aunt Aisha, the husband of the Prophet (may God bless him and grant him peace).3)

His brothers are Abdullah bin Al-Zubayr, Musab bin Al-Zubayr, and Musab, his brother from his father, as he was not from Umm Urwah and Abdullah.His children are Abdullah, Omar, Al-Aswad, Umm Kulthum, Aisha, and Umm Amr .Erwa was born in a village called a branch, which is on the side of Rabza, between it and the city four nights, and it has palms and water (4).

Urwa was dying a well in Medina, known as the well of Urwa, which is attributed to him, and there is no well in Medina that is fresher than its water, and he was young when his location for the camel occurred in the year 36 A.H. and he did not witness it, so he said to himself: (4). The house in which Erwa grew up: his father, Zubayr bin Hawari, the Messenger, and his mother, Al-Zubair, Asma, the daughter of Al-Siddiq. As for his great teacher and teacher, she is his aunt Mrs. Aisha, who used to frequent her and continued to visit, learn from and

talk to her. He was born in Medina and had In the city, the house of Rabbo, which is the house of Safia bint Abdul-Muttalib, and he also has a piece of Dar Al-Zubair bin Al-Awam.

Urwa was one of the scholars affiliated with the historical school of Medina, and he was the most knowledgeable of the people of Medina. Urwa ibn al-Zubayr was the first founder of the science of history among Muslims, and the beginning of Islamic historical codification dates back to Urwa bin al-Zubayr, specifically in the time of the Umayyad Caliph Abdul Malik bin Marwan

And that Erwa had grown up in Medina and studied at the hands of its sheikhs, then he resided in Egypt at the beginning of the second half of the first Hijri century, where he settled in it and frequented a buttonhole in the Islamic capitals. He visited Damascus and met its scholars and was a lover of knowledge and an ascetic in the world. Ibn Hisham narrated that he used to fast all ages. Except for the days of breaking the fast and slaughtering, and he died while he was fasting, and he was a buttonhole of much hadith, a scholarly jurist, until it was said that the buttonhole in the sea did not bleed.

Erwa got sick, and the ewer hit his leg while he was in the Levant at Al-Walid bin Abdul-Malik, so he cut off his leg in Al-Walid's council. His son Muhammad died on that trip. When he returned to Medina, he said: We met this monument from our journey and lived after cutting his leg for eight years. It came back that night. Al-Walid told him to cut it off. He said: No, it fell to his leg. And he said to him: - Cut it off, or else you spoil your body, so he cut it with a chainsaw. He is an old man and no one has caught him (5).



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A STUDY ON CUSTOMER SATISFACTION ON KTM MOTORCYCLE (WITH SPECIAL REFERENCE TO COIMBATORE CITY)

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ABSTRACT

In general, satisfaction is a person's feeling of pleasure or disappointment resulting from comparing a person product's perceived performance in related to his or her expectations. If the performances falls short of expectation, the consumer is dissatisfied. If the performance matches the expectations, the consumer is satisfied. If the performance exceeds his or her expectation, the consumer is delighted. The link between consumer satisfaction and consumer loyalty is not proportional. Suppose consumer satisfaction is rated on scale from one to five. At a very low level of consumer satisfaction, consumers are likely to abandon the company and even had-mouth it. At levels two or four, consumers are fairly satisfied but still find easy to switch when a better product comes alone. At level five, the customer is very likely to repurchase and even spread good word of mouth about the company. High satisfaction or delightment creates an emotional bond with the brand or company.

KEYWORDS: *Satisfaction, factors, consumer, buying behaviour, two wheeler, Percentage analysis, Ranking analysis, Likert analysis etc.,*

INTRODUCTION

Satisfaction is a person's feelings of pleasure or disappointment resulting from comparing a products perception performance in relation to his or her expectation". As the makes it clear, satisfaction is a function of perceived performance and expectations. If the performance falls short of the expectations of the customers, the customer is dissatisfied. If the performance exceeds the expectations, the customer is highly satisfied or delighted. Many companies are aiming for high satisfaction because customers who are just satisfied still find it easy to switch, when a better offer comes along.

Customer satisfaction is a measure of how products 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 businesses complete for customers, 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.

Especially the youngsters prefer motorbikes rather than cars. Capturing a large share in the two-wheeler industry, bikes and scooters cover a major segment. Bikes are considered to be the favourite among the youth generation.

India is the second largest manufacturer and producer of two-wheelers in the world. It stands next only to Japan and China in terms of the number of two-wheelers produced and domestic sales respectively. This distinction was achieved due to variety of reasons like restrictive policy followed by the Government of India towards the passenger car industry, rising demand for personal transport, inefficiency in the public transportation system etc

The year 2012 was important for the Indian motorcycling industry as it was the time when KTM,



in partnership with Bajaj Auto, introduced the biking aficionados to the true thrill of 200cc motorcycles at an unbeatable price with the launch of the Duke 200. Here was a product that delivered performance that the 200cc segment of motorcycles had never seen at a ridiculously affordable price tag.

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 market place. The study would help the company to improve the sales and services of KTM bikes.

SCOPE OF THE STUDY

In the current scenario, the automobile sector is the fastest growing sector in India. Innovation and Adoption of latest feature have raised the competitiveness in the automobile sector. The study is aimed at identifying the level of consumer perception towards two-wheelers effect on consumers buying behavior. The outcome of the study makes clear that the perception about the KTM motors holds in the place of mind of the customers which could be useful for management to formulating the strategies in future sales growth plans of the two-wheelers.

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 services after sales and service.

RESEARCH METHODOLOGY

AREA OF THE STUDY

Coimbatore is selected for the location of the study.

SOURCE OF DATA

The **Primary data** were collected through a well-framed and structured questionnaire from the number of respondents.

Secondary data were collected from various Journals, website and internet.

SAMPLE SIZE

The sample size consisting of 120 respondents to measure the customer's satisfaction towards KTM motors in Coimbatore.

TOOLS & TECHNIQUES

Percentage analysis, Ranking analysis, Likert analysis were used to analyse the data.

LIMITATION OF THE STUDY

Through every care was taken and all intervening factors considered still, the following limitations were inevitable.

- This study is mainly based on the customer satisfaction, but the customer satisfaction will always changing in nature.
- The study was conformed to two-wheeler consumers in Coimbatore only.

REVIEW OF LITERATURE

G.Mahalakshmi (2014) : To find out the customer satisfaction level in TVS XL and analysis the factors influencing the usage of TVS XL. This study is based on the primary data. The primary data have been collected from questionnaire method. The primary data was collected from 240 respondents. Out of 240 response, 70 response is features attracted in riding comfort and 18 respondents are other features attracted.

G.Ramaya & KVR.Rajandran(2018) : To identify the customer Satisfaction of Honda two wheelers. The research is a descriptive study based on survey method. Both primary and secondary data have been used in this study. The primary data was collected from 50 respondents. Data are collected from various publication of journals, newspapers, web sites. Maximum number of people felt that brand ambassadors will affects at the time of purchasing the products. The performance and design are nice when compared to other models.

Sanjupa giri & Kumar Thapa(2016) : To identify the customer Satisfaction of two wheelers after sales and service. Kano Model analysis and the customer satisfaction in term of major and supporting after sales services. The research found out that the satisfaction level depends on brand of the bike. Research found that there is no relationship between occupation and customer satisfaction. They agreed that the customer satisfaction could only obtained with help of effective after sales and service.

Sharmila Devui M, Ankitbose, Gopinathan, Ninushaarm , Bharthvajan(2019) : To find out there problems faced by the respondents in using two wheelers. This study is an imperial study combining the use to both primary data and secondary data. Data have been collected from 120 response of the study area. For selecting response, convenience sampling technique was used. Point scaling technique was used to analysis customer satisfaction towards Hero. The study shows that most of the respondents have opinion about the price level is low.

**DATA ANALYSIS & INTERPRETATION**

The collected data were grouped, edited, tabulated in a master table and analysed using the following statistical tools.

- Percentage Analysis
- Ranking Analysis
- Likert Scale Analysis

Table showing level of satisfaction of respondents in design of vehicle

Factors	No. of Respondents	Likert Scale	Total Score (fx)
Highly satisfied	42	5	210
Satisfied	45	4	180
Neutral	29	3	87
Dissatisfied	1	2	2
Highly dissatisfied	3	1	3
Total	120	15	482

Source: Primary Data

Formula

$$\begin{aligned} \text{Likert scale} &= \sum(fx) / \text{Total number respondents} \\ &= 482/120 \\ &= 4.00 \end{aligned}$$

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.

Table showing level of satisfaction of respondents in riding comfort

Factors	No. of Respondents	Likert Scale	Total Score (fx)
Highly satisfied	12	5	65
Satisfied	52	4	208
Neutral	21	3	63
Dissatisfied	19	2	38
Highly dissatisfied	15	1	15
Total	120	15	389

Source: Primary Data

Formula

$$\begin{aligned} \text{Likert scale} &= \sum(fx) / \text{Total number respondents} \\ &= 389/120 \\ &= 3.25 \end{aligned}$$

INTERPRETATION

Likert scale value is 3.25. Hence the majority of the respondents are moderate in riding comfort of KTM vehicle.

Table showing level of satisfaction of respondents in service charge

Factors	No. of Respondents	Likert Scale	Total Score (fx)
Highly satisfied	10	5	50
Satisfied	31	4	124
Neutral	52	3	156
Dissatisfied	16	2	32
Highly dissatisfied	11	1	11
Total	120	15	373

Source: Primary Data

**Formula**

$$\begin{aligned} \text{Likert scale} &= \sum(fx) / \text{Total number respondents} \\ &= 373/120 \\ &= 3.10 \end{aligned}$$

INTERPRETATION- Likert scale value is 3.10. Hence the majority of the respondents are moderate in service charges of KTM vehicle.

Table showing level of satisfaction of respondents in overall experience

Factors	No. of Respondents	Likert Scale	Total Score (fx)
Highly satisfied	10	5	50
Satisfied	53	4	212
Neutral	37	3	111
Dissatisfied	17	2	34
Highly dissatisfied	3	1	3
Total	120	15	410

Source: Primary Data

Formula

$$\begin{aligned} \text{Likert scale} &= \sum(fx) / \text{Total number respondents} \\ &= 410 / 120 \\ &= 3.42 \end{aligned}$$

INTERPRETATION - Likert scale value is 3.42 is greater than mid value (3). The majority of the respondents are satisfied in overall experience of KTM vehicle.

Table showing ranking factor in KTM vehicle 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)	364	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

Source: Primary Data

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.

FINDINGS**SIMPLE PERCENTAGE ANALYSIS**

- 38% of the respondents come under the age group of 20- 30 years
- 58% of the respondents are Male
- 36% of the respondents get information from their friends
- 34% of the respondents get attracted by the Mileage of KTM vehicle
- 52% of the respondents get delivery of bike on promised time

- 52% of the respondents get KTM motorcycle for test drive on their Showroom visit
- 37% of the respondents noticed a top speed of 120 while riding
- 37% of respondents get KTM vehicle for its Speed
- 32% of the respondents Purchased KTM vehicle in 2-3 years
- 36% of respondents face the problem of non-availability of spares at the time of service
- 32% of the respondents get influenced by the Power of KTM vehicle
- 45% of the respondents have 250cc engine KTM motorcycle

LIKERT SCALE ANALYSIS

- Likert scale value is 4.0. so, the customers are satisfied in KTM vehicle design.



- Likert scale value is 3.25 so, the customers are moderate in riding comfort of KTM vehicle.
- Likert scale value is 3.10 so, the customers are moderate in service charges of KTM vehicle.
- Likert scale value is 3.42 so, the customers are satisfied in overall experience of KTM vehicle.

RANK ANALYSIS

- According to the source collected the first preference of factor is given to the Initial preference of KTM motorcycle.

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 customer are came to know about the company by friends, the company can improve the advertising factor.

- Vehicles are not provided on the promised date after services, company should improve the time of delivery.

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 CUSTOMERS' SATISFACTION TOWARDS HARLEY DAVIDSON IN COIMBATORE CITY

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ABSTRACT

Quality, satisfaction and brand loyalty are constructs that have been discussed for decades, but the concept of ultimate loyalty challenges the previously established loyalty studies. Therefore, the research aimed to: a) identify ultimate loyalty determining indicators; b) identify its antecedent constructs; c) evaluate the relationship between antecedents and ultimate loyalty. This study employs a two steps approach, qualitative and quantitative. In the first, we identified, through semi-structured interviews, determining attributes in shaping group loyalty. Based on such data, a survey questionnaire was elaborated with 32 statements. The sample of both steps was composed of Harley-Davidson customers. For data analysis, Partial Least Squares (PLS) was used. From the results, it can be stated that the constructs product uniqueness, adorable product, product desirable by a defined market segment and individual fortitude are constructs that drive ultimate loyalty. It is also observed that belonging to a social network is not an important predictor of ultimate loyalty.

INTRODUCTION

Harley –Davidson India is a wholly owned subsidiary of Harley – Davidson, based in Gurugram, Haryana, India. Harley – Davidson India commenced operation in August 2009 and appointed its first dealership in July 2010. Harley Davidson offers a range of 11 models in India from each of its 6 platform – Sportster, Dyna, Softail, V- Rod, Touring and street – in addition to a full range of parts. Accessories, and general merchandise, available through authorized dealership. The company has 16 dealership facilities across India: New Delhi, Gurugram, Chandigarh, Mumbai, Hyderabad, Bangalore, Chennai, Kochi, Kolkata, Ahmedabad, Indore, Pune, Goa, Guwahati and Jaipur. In 2011, the company also set up an assembly unit at Bawal, Haryana. In 2011, Harley – Davidson

India began the assembly of its Sportster line followed by the assembly of the Dyna line in 2012 and Softail line 2013. In 2014, Harley – Davidson began manufacturing facility outside of the US. The street platform is jointly manufactured at Harley – Davidson's US and India plants. The street 750 is also exported to Europe and Asia markets from India.

By the way of analysis customer perception we can clearly understand how much a firm treats its customers, what is the quality of their product, is it capable to serve the dynamic needs of customers what will be their further in what they need to making changes etc.

India has emerged as the world's largest market for Two- Wheeler and the strong growth trend continues in the month of May 2018, with a total of



18,50,093(Eighteen lakh) new two- year for the industry according to reports out of society of Indian Automobile Manufacturers are at 9.19%. Interestingly this month, the sale charts were led by motorcycles with scooters taking the backseat and registering negative growth, when compared with the same month last year. Picking up the growth for the remainder of the industry was the motorcycle market which grew from 10,60,744 vehicles sold in May 2017, to 12,21,744 vehicles sold in 2018 These changes in customers preference had an impact on the features of the players. The erstwhile leaders have either perished or have significantly lost market share, where as new leader emerged. With an expanding market and entry of new player of the last few years. The Indian two wheeler industry is now approaching a stage of maturity.

Previously, there were only a handful of two wheeler models available in the country. currently, India is the second largest producer of two wheeler in the world. It stands next to China and Japan in terms of number of two wheeler produced and sales of two wheeler respectively. There are many two wheeler industry and Hero Moto Crop ltd, Honda Motorcycles & Scooters India, TVS Motor company, Bajaj Auto Limited, Royal Enfield, India Yamaha Motor 93% of the sales in the sales in the domestic two wheeler market. Its is note worthy that motorbikes segment's share a just be 80% of the total two wheeler market in India which is dominated by Hero Moto Crop with a market share 49%. Scooter segment's market share is about 18% which led by Honda motorcycles & scooter India. Private ltd with a market share of 43%. There fourth of the total export in the two wheeler automobile industry are made in the motorcycles segment. Export are made mainly for the south east Asian and SAARC nation. The level of technology change in the motor vehicles industry has been high but, the rate of change in technology has been medium.

STATEMENT OF THE PROBLEM

The study helped in knowing about the customer satisfaction level towards Harley Davidson. It also helped to analysis the dealer's attitude towards the service and benefits rendered by the company.

OBJECTIVES OF THE STUDY

- To analyses the level of awareness about the purchase of Harley Davidson bikes.
- To explore the level of satisfaction towards Harley Davidson bikes.

- To analyses the problems faced by the customers in using Harley Davidson bikes.
- To evaluate the attitude of customers towards Harley Davidson.

LIMITATIONS OF THE STUDY

- The study has been restricted to Coimbatore city and thus making the sample small.
- The study is limited to Harley Davidson owners.

TOOLS FOR ANALYSIS

- Percentage analysis
- Likert's scale analysis
- Rank correlation analysis.

REVIEW OF LITERATURE

- **Falco, Charles ;** Guggenheim Museum Staff (1998)¹The book explains the steps in the evolution of motorcycle. The book is divided into several chapters which deal with different aspect of motorcycle engineering. The pages from 24-31 explains 71 how the motorcycle technology was improved to meet the contemporary technological demands.
- **Mr. Subhadip Roy (2006) Mohnot (2002)**²: In his study of Two Wheelers he out from the standpoint of means of personal transportation. The two wheeler has become an expression of the owners' personality. The (customer in making his choice does evaluate the product in terms of utility. Fuel economy, reliability, maintenance, affordability, performance, good after – sales service at reasonable cost, availability of space parts at economical prices, looks, safety and comfort and case of riding for driving . total sales of two wheeler in first eight months of 200 1-02 had increased to 2.70 million units from 1.33 million units in the corresponding period of the proceeding year.
- **Oxford university (2005)** “ A two-wheeler motor – driven road vehicles, resembling a bicycle but powered by an internal-combustion engine; (now) spec. one with an engine capacity, top speed or weight greater than that of a moped.”

**DATA ANALYSIS AND INTERPRETATION**

In this chapter, the analysis and interpretation of “ A Study on Consumers Perception and Satisfaction on Harley Davidson motorcycle in Coimbatore City” based on a sample size of 90 respondents selected from Coimbatore city through a questionnaire comprising of 21 questions is presented. The collected data are classified and tabulated and further the following statistical measures are also employed in fulfilling the objectives of the study.

- Simple percentage analysis

- Likert scale analysis
- Rank analysis

SIMPLE PERCENTAGE ANALYSIS

The percentage analysis is usually employed in any study relating to social science to assess the distribution of respondents under each classification. The distributions of the respondents are expressed in percentage, to facilitate comparison.

FORMULA

$$\text{PERCENTAGE} = \frac{\text{Number of Respondents}}{\text{Total number of Respondents}} \times 100$$

TABLE .1
TABLE SHOWING GENDER OF THE RESPONDENTS

S.NO	GENDER	NO. OF RESPONDENTS	PERCENTAGE (%)
1	MALE	74	82
2	FEMALE	16	18
TOTAL		90	100

INTREPRETATION

The above table.1 shows that among the consumer surveyed for Harley Davidson motorcycle 18% are female and 82 are male.

Majority (82%) of the respondents are male

TABLE.2
TABLE SHOWING THE USE OF HARLEY DAVIDSON BY THE RESPONDENTS

S.NO	PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
1	College	28	31
2	Work	16	18
3	Adventure	46	51
TOTAL		90	100

INTERPRETATION

The above table.2 shows that 31% of the respondents use for college. 18 % of the respondents use for work 51 % of the respondents use for Adventure .

Majority 51% of the respondents for Adventure.

LIKERT SCALE ANALYSIS

The Likert Scale is a raising scale that’s often used when surveying your customer regarding their experiences with your brand – from the service they were provided to the overall effectiveness of your product.

**FORMULA**

LIKERT SCALE = SUM OF (FX)/NUMBEROF RESPONDENTS

F= NO. OF RESPONDENTS X = LIKERT

SCALE VALUE

(FX)=TOTAL SCORE

TABLE.3**TABLE ON LEVEL OF RESPECT TO HARLEY DAVIDSON MOTORCYCLE.**

S.NO	FACTORS	NO. OF RESPONDENTS	LIKERT SCALE VALUE (X)	TOTAL (FX)
1	Highly satisfied	46	5	230
2	Satisfied	29	4	116
3	Neutral	9	3	27
4	Dissatisfied	4	2	8
5	Highly Dissatisfied	2	1	2
TOTAL		90		383

Likert scale = sum (FX) / total no. of respondents

=sum (383/90)

= 4

INTERPRETATION

From the above table about the level of satisfaction regarding the level of respect to Harley Davidson

Likert Scale value is 4 which are greater than the mid value(3). Hence the customers are most of the members are highly satisfied.

TABLE.4**TABLE ON SUGGESTION OF HARLEY DAVIDSON BIKES ON INDIAN ROAD BY THE RESPONDENTS**

S.NO	FACTORS	NO.OF RESPONDENTS	LIKERT SCALE VALUE (X)	TOTAL (FX)
1	Highly satisfied	7	5	35
2	Satisfied	15	4	60
3	Neutral	39	3	117
4	Dissatisfied	12	2	24
5	Highly Dissatisfied	17	1	17
Total		90		253

From the above table the suggestion of Harley Davidson bike on Indian road Likert Scale value is 3 which are greater than the mid value(3). Hence the customers satisfied.

INTERPRETATION

Likert scale = sum (FX)/ No. of respondents

= 253/90

= 3

RANK ANALYSIS

A Rank Analysis is any of several statistics that measure an ordinal association. The relationship between ranking of different ordinal variables or different ranking of the same variable. Where a "ranking" is the assignment of the label "First", "second", "third" etc., to different observations of particular variable. A Rank analysis measure the degree of similarity two rankings, and can be used to assess the significance of the relation between them.



TABLE.5
TABLE ON THE RANK OF THE BIKE ACCORDING TO THE RESPONDENTS

PARTICULARS	1	2	3	4	5	TOTAL	RANK
PERFORMANCE	18(5) =90	23(4) =92	19(3) =57	13(2) =26	17(1) =17	282	1
BELTCHAIN	16(5) =80	17(4) =68	24(3) =72	15(2) =30	18(1) =18	268	5
V-TWIN	16(5) =80	17(4) =68	21(3) =63	19(2) 38	17(1) 17	266	6
PICK UP	17(5) =85	23(4) =92	13(3) =39	22(2) =44	15(1) =15	275	3
SOUND	18(5) =90	17(4) =68	21(3) =63	15(2) =30	19(1) =19	270	4
STYLE	24(5) =120	13(4) =52	21(3) =63	14(2) =28	18(1) =18	281	2

INTERPRETATION

The table shows that out of 90 respondents, Performance is in the rank 1, Style is in the rank 2.

FINDINGS, SUGGESTIONS AND CONCLUSION**FINDINGS**

- ❖ From the study majority of the respondents are Male.
- ❖ From the study majority of the respondents are Businessman.
- ❖ From the study majority of the respondents have a family income between Rs. 1,00,001 – Rs 1,50,000.
- ❖ From the study majority of the respondents are influenced in the Sound/Style.
- ❖ From the study majority of the respondents are influenced by Friends.
- ❖ From the study majority of the respondents use for Adventure.
- ❖ From the study majority of the respondents says that it is parts are Not Available.
- ❖ Factors capable to attract customers attention towards the purchase of Harley Davidson were speed, design, mileage, price, reliability, style, brand image.
- ❖ Majority 37% of the respondents are influenced in the Sound/Style.
- ❖ ISO Certification, trained mechanics, after sales services were the factors where users showed satisfaction for the concerned brand/company.

SUGGESTIONS

- ❖ As the customers feel that the employees are not supporting and not providing proper service, the companies should provide proper service and be increasing the after sales services activity.
- ❖ Based on the data majority of the customers are students who own Harley Davidson motorcycle.
- ❖ So Harley Davidson should give more affordable price. Comfortable / sitting is also important for the customer. The comfort of while riding should be great seat.

CONCLUSION

Demographic factors are playing a major role in deciding the satisfaction. The findings clearly indicate that perception highly attracted towards Harley Davidson and its features generate that lead to consumer satisfaction. A proper understanding of requirement of customers will help the marketer to formulate a strategy to maintain a long lasting relationship with the customers. If marketer create a unique value by themselves, they can easily win the hearts of customers.

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THE PROCESS AND IMPORTANCE OF MARRIAGE COUNSELLING FOR MARRIED COUPLES: AN OVERVIEW

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Article DOI: <https://doi.org/10.36713/epra5915>

ABSTRACT

The aim of this study is to discuss the process and importance of marriage counselling for married couples. The use of marriage counselling were greater for persons with a positive attitude toward seeking marriage counselling and those who had previous marriage counselling. However, those having a supportive subjective norm were more likely to seek marriage counselling is the persons with no history of marriage counselling. Similarities and differences between males and females for the type of marital problem that might lead to marriage counselling and the implications for counsellors are presented. This study also determines the use of inquiry method in the counselling and counselling theories approaches. The research examined descriptive level specific problem areas for which an individual might pursue marriage counselling and how these varied by gender. Besides that, more general indices because it specifically targets beliefs about marriage be more strongly correlated to relationship variables (e.g., marital satisfaction) than have measures of generalized expectancies.

KEYWORDS : *Importance, Marriage Counselling, Process, Behaviour, Attitude, Sex Differences*

INTRODUCTION

Marriage counselling, also called couples therapy, is a type of psychotherapy that is conducted by licensed therapists. Usually involving both partners, marriage counselling helps couples to recognize underlying conflicts and improve their relationship. It can help married couples make thoughtful decisions, overcome differences and enrich communication between them. Online marriage counselling is also an ideal resource for relationship help. It's allowed couples connect with therapists online and works in a convenient, effective and time-saving manner. Marriage counselling give confidence inspires for both partners to focus on self-improvement and self-awareness. Moreover, marriage counsellor is aware of the fact that couples come to them reluctantly, but with a hope that it can benefit their marriage. A good counsellor will make every effort to help the couple feel at ease and advise as best as possible to help couples address their

problems in a better way. The advantages pursuing marriage counselling is to help comfort couples handle the challenges of married life and the goal is to get the relationship back on track. It's emphasized on the 'now' and the issues faced by couples recurrently. It's provides an opportunity for you to talk about your differences and compromises. In addition, what counselling does is help both to address their problems for a stronger and happier relationship plus helping the couple master the art of communication. Yes, basically counselling relief the trust or regenerate the flame, it is very effective about helping the couple cope up with the different types of stress experienced in the relationship. Usually marriage counselling is a short-term focused treatment whereas therapies are a therapeutic process that can last several sessions. What makes it unique from marriage counselling is that it could go as far as addressing your individual



and personal issues to understand the behaviour you are showing in the relationship.

Marriages succeed once both partners take responsibility for nurturing the relationship and building an atmosphere of love and trust. Relatively just “going with the flow”, partners take a proactive approach and strive to be the best they can be. But no one ever teaches us how to BE married after the GET married part is done. And once married, the understand why that is it's a difficult, individual, and evolving process. While does not claim to be an expert on love but hopes that the big lessons that husband and wife have learned in marriage counselling, perhaps can help and support others that want to make their marriage great. Honestly, marriage has been continuing to maintain symbolic importance for individuals living within and outside it, be an important focus of scientific inquiry and generate significant public interest and debate (Fincham & Beach, 2010). The stigma with marriage counselling is that it's for couples that can't make it on their own, who's love life has crashed and is burning before their eyes. However, marriage counselling able to make a great marriage, truly hope this advice can strike a chord and make your marriage tremendous. It's highly encourages marriage counselling, which teaches us above all else, to pay attention to our emotions and talk them out. Most importantly the key reasons people seek therapy is for help with intimate and close relationships. And while marriage counselling tends to be viewed as something for only relationships in crisis, there are many reasons people in relationships might pursue it and deserve to be explored worked on.

The method involves pursuing marriage counselling were greater for persons with a positive attitude toward compare with those who had previous marriage counselling. At some point, you will experience rocky times for a few days, months or even years but the reality of two very different people living as a single unit is very challenging. Studies shown (1975; Ajzen & Fishbein, 1980) the moment marital problem develops, why do married persons, as individuals or as a couple, not seek for marriage counselling? It can be explained that the inquiry method emphasizes conceptual framework within which to explore determinants of behavioural choices that identify two determinants of intentions, attitudes toward performing the behaviour (example "a person's general evaluation toward the behaviour," Ajzen & Fishbein, 1980, p. 55) and subjective norms associated with the behaviour (example "a person's perception that important others desire the performance or non-performance of a specific behaviour," Ajzen & Fishbein, 1980, p. 57).

What is important is that the method also involves attitudes, they argue that a general attitude

will not predict a specific behaviour as well as the attitude toward the specific act. Furthermore, the comparative importance of the attitudinal and normative components can vary. Under some circumstances the normative component may be more important than the attitude, whereas, for other persons, behaviours, or contexts of the attitudinal component may be more important than norms. According to researcher Halgin, Weaver, Edell, and Spencer (1987) found the attitudinal element to be related to help-seeking from a professional psychologist, but they did not compute the normative component of the model. The entire application of the model intentions by pursue marriage counselling provided means for better understanding why individuals do and do not intend to pursue counselling. By evaluating the point to which attitudes and subjective norms are associated with intentions. The attitude toward an act can be measured either directly as the person's feeling toward the act, or indirectly as a composite of the person's beliefs about the consequences of the act and feelings about those consequences. Whereby, parallel to subjective norms can be assessed either directly as the net effect of expectations that important, others hold about the person performing the behaviour, or indirectly by assessing the person's knowledge of normative beliefs particular. Whereby, others have concerning the behaviour and the person's motivation to comply with those expectations.

Mainly the other hand, they may be more likely to try various interventions (including self-help and professional-help) because of a belief that something will work. Fischer and Turner (1970) found that those persons with an internal locus of control had a more positive attitude toward pursuing for help from professionals. Studies shown, Miller, Lefcourt, Holmes, Ware, and Saleh (1986) married persons with an internal locus of control versus an external locus of manage to constrict more active and direct in their problem solving as well more effective in communicating towards achieving goals. In general, the method has important goals in marriage counselling therapy theories as technique for quickly sifting through the tremendous amount of information that brings in marriage counselling, then follow by targeting specific thoughts, behaviours, or emotional processes for change and finally helping clients effectively make these changes to resolve their initial concerns. In spite of this, changing landscape of mental health care has altered how therapy theories are understood and used. Specifically, how theory being used and understood has been competent therapy with marriage people involves learning to conceptualize not only the psychology of the individual but also the complex web of relationships that constitutes a person's social



world and the interaction between the two (Gehart,2011).

DESIGNING PLANNING STRATEGY

(a) WHEN Should Pursue Marriage Counselling?

Timing is an essential element in whether marriage counselling works. Almost couples wait too long to reach out for help repairing their marriage. Relationship and marriage expert couples take approximate six years to build up resentment before they begin the important work of learning to resolve differences in effective ways. Practically, it is critical that couples see conflict as an inevitable part of a committed, romantic relationship. In fact, most relationship has its ups and downs, and conflict goes with the territory. In spite of that yet couples might avoid conflict because it may have signified the end of their 'parents' marriage or led to bitter disputes (Michele Weiner Davis August 2002), explains that avoiding conflict backfires in intimate relationships. She also speculates that bottling up negative thoughts and feelings doesn't give your partner a chance to change their behaviour. On the hand the alert of the secrets of a good marriage or romantic relationship is learning to choose battles wisely and to distinguish between petty issues and important ones. Somewhat they becoming defensive and hurtful, they pepper their disputes with flashes of affection, intense interest, and mutual respect. Many people believe that should seek marriage counselling when separation or divorce are looming. But that is often too late. Marriage counselling therapy should begin as soon as the problems get in the way of your daily life. Here are some signs that you might benefit from a counselling therapy:

- i. You have trouble expressing your feelings to one another
- ii. You have one or more unsolvable disagreement
- iii. There is withdrawal, criticism, or contempt in your interactions
- iv. A stressful event has shaken your daily life
- v. You have trouble making decisions together
- vi. You experienced infidelity, addiction, or potential abuse
- vii. You want a stronger relationship

Remember that there are no wrong reasons to seek marriage counselling. Specifically, some couples start therapy as soon as they are married, even without obvious problems, to prevent serious problems from developing. Therapist can help them become a better communicator, develop strong relationship skills, and improve your family's happiness. Therefore, it is important to acknowledge problems early and seek therapy as soon as possible.

(b) HOW can marriage counselling help couples?

In some marriage counselling to be effective, both partners need to be willing to take responsibility for their part in the problems, to accept each other's faults, and to be motivated to repair the relationship. It's significant for couples to have realistic expectations because it takes more than a few sessions to shed light on the dynamics and to begin the process of change.

- i. A motivated couple can begin to explore their problems from a new perspective.
- ii. They can learn new ways to recognize and resolve conflicts as a result of the tools provided by the therapist.
- iii. Partners can improve communication that may have eroded the quality of their interactions. Practically couples to reach an impasse and lose the ability to be vulnerable and trusting of one another.
- iv. It can provide "neutral territory" to help couples work through tough issues or to put aside "baggage" that prevents the couple from moving on.
- v. Couples can resolve to rebuild their marriage and make a renewed commitment, or clarify the purpose why they need to separate or end the marriage.

DESIGNING GOAL AND TARGET METHOD

(a) What you can expect

Marriage counselling brings couples or partners together for joint therapy sessions and working with a therapist, learn the skills to solidify own relationship, such as:

- Open communication
- Problem-solving
- How to discuss differences rationally

Together couples will learn how to identify problems without blame and instead examine how things can be improved. The importance of making the decision to go to marriage counselling can be tough. Uncertainty troubled in relationship, seeking help is more effective than ignoring the problems or hoping they get better on their own. Taking the first step by admitting the relationship needs help is the hardest part. Almost individuals find the experience to be insightful and empowering. Scheduling time to work on resolving conflicts in a healthy way is hard work but the payoff is tremendous. The desire from relationship can happen much more smoothly when give it time, as opposed to condensing plans into irrational timeframes. Basically, relationships can bring joy, but when there are communication or conflict resolution problems, that joy has the potential to turn into frustration and disappointment.



Great communication is essential in a long-lasting relationship. However, those skills do not always come naturally and should learn how to express your thoughts and feelings effectively as well learn how to understand and interpret your spouse's emotions. This is something that marriage counselling can help to do. Marriage counsellor will act as an interpreter, bridging the gap between and together, learn how to improve the flow of communication so that it can resolve conflicts in the future.

(b) Benefits of Marriage Counselling

- i. **Identify the Root Cause of Marital Disputes.** Marital disputes may not be as they appear on the surface perhaps, it may appear angry about your husband not doing the dishes, but really, you feel that there is an imbalance of household responsibilities. This may seem upset about your wife's recent shopping trip, but the actual issue is the financial stress you're experiencing. Marriage counsellor will help things get to the root of the issue so able to overcome the conflicts at the source.
- ii. **Bring Closure to Past Disputes.** Are issues from the past continuing to affect the relationship in the present? If so, should bring closure to those events. Sometime issues like trauma, abuse, or infidelity, may be harder to overcome than others. However, this can get through these obstacles with the help of an experienced marriage counsellor.
- iii. **Find Personalized Solutions for Ongoing Obstacles.** Perhaps the biggest focus of marriage counselling is finding what works for the relationship specifically. Personalities and lifestyles dictate what strategies work best for all. Obviously, this may not work for another couple. Marriage counselling will help find communication and time management strategies that work for lives as not just getting generic advice but may getting a tailored guide from a trusted advisor.
- iv. **Balance Stress and Responsibilities in the Relationship.** From time to time we all experience the stress. In a marriage, the opportunity to share some of that stress with another person so do not carry the weight alone. It's significant to create a balance of responsibilities, including finances and household tasks but the nature of that balance is different for most of couple. It may carry out to find what works for? Marriage counselling help to establish a

healthy balance that ensures both have a positive experience.

Marriage counselling is designed for couples of all ages and all walks of life. Relationship process and understand need to maintain a fulfilling marriage goal as well target. Go through specific process, marriage counsellor can teach those skills while monitoring counselling progress, mediating conflict and giving objective feedback.

(c) Good Reasons to Pursue Marriage Counselling

- i. Deepen knowledge and understanding of yourself, your partner and your relationship.
- ii. Structure communications to allow each to feel safe enough to empathically connect.
- iii. Identify one another's fears and know what each needs to feel safe in the relationship.
- iv. Make distinctions between making requests versus demands, sharing versus venting, connecting versus complaining.
- v. Talk together and listen in a way that each feel accepted, validated and understood.
- vi. Identify one another's triggers and defence strategies.
- vii. Examine how wounds in childhood effect how each currently relates in your couple relationship.
- viii. Identify and replace limiting beliefs or judgments with ones that energize to co-create a mutually enriching relationship.
- ix. Discover and embrace disowned, repressed or rejected parts of yourself that do not allow to feel safe enough to fully love and honours.
- x. Identify limiting subconscious scripts and beliefs that block communications and cause reactivity and defensiveness.
- xi. Find balance between yearnings to be loved versus be accepted and valued as a unique contributor.
- xii. Understand what need to feel loved and clearly articulate that to partner.
- xiii. Identify and replace old habits, defences and coping strategies with enriching ones.
- xiv. Understand distinctions between healthy versus unhealthy expressions of anger.
- xv. Rediscover the romance and the fun in relationship.

(d) Empirically Proven Benefits

The psychotherapy effectiveness and other forms of counselling has been debated the meta-analyses that brought empirical proof of the benefits experiences from undergoing mental health counselling (Brown, 1987). The design analytical information misinterpretation of Freudian speculation has tainted the modern understanding of the benefits of psychotherapy (Shedler, 2010). There are many benefits that some may not realize due to the stigma



that remains specifically around psychoanalytical methods of counselling. The following features were reliably noted as efficacy:

- i. A focus on affect and expression of emotions on cognitive factors, psychoanalysis focuses and feelings.
- ii. Evaluation of attempts to avoid distressing thoughts and feelings.
- iii. Identification of patterns and recurring themes in emotions.
- iv. Discussion of past experience with a developmental focus.
- v. A focus on interpersonal relations.
- vi. A focus on the therapeutic relationship.
- vii. Safe exploration of fantasy life.

The empirical expectations of the American Psychological Association, was established task force to focus on effective interventions in the 1990s. This generate the movement called the empirically validated treatment (EVT) (Wampold et al., 2002). It was seven principles were provided to aid in the classification that determining scientific validity for interventions.

- i. When evaluating intervention outcomes, a level of specificity must be considered. Compilation of evidence of the efficacy interventions be categorized from a broad categorization to a refined and more specific categorization.
- ii. The level of specificity should not be limited to DSM diagnosis. This code enables practitioners to consider the whole person in treatment, rather than providing interventions based solely on the disorder they are treating.
- iii. Scientific evidence needs to be determined in its entirety, as all studies will face difficulties.
- iv. Absolute vs. relative efficacy needs to be presented.
- v. Causal attributions for specific ingredients should be made only if the evidence is persuasive. The common factors in comparison to particular claims of individual components of an intervention causing the desired outcome.
- vi. Outcomes should be assessed broadly with one intervention for stress should affect all other aspects of life.
- vii. Regions will present differences in outcomes and should be assessed along with freedom of choice.

These are the important principle to understand that practitioners should always consider the broader picture of a client. The perspective of science that is interwoven with the personal approach

and specific understanding of individual experience is vital for outcomes to be desirable and effective. In despite the fact an intervention may work well with one client, another may find it completely inappropriate and unhelpful to their circumstances.

IMPLEMENTATION OF MARRIAGE COUNSELLING METHOD

1. Identify Problems and Information

- (a) Empirically proven that positive psychology studies have specific interventions that increase happiness and decrease depressive symptoms (Seligman, 2005). It was recommended early that in the hands of a skilled clinician or coach, the effects of specific interventions would improve outcomes for clients. This research studies utilizing random controlled, placebo assignment design proven with solid science that happiness interventions work. Thus, the work done within the therapeutic relationship with positive psychology interventions potentially have compelling value in improving wellbeing.
- (b) Empirically proven that the reduction in chronic pain has been benefit of interventions in CBT (Ehde et al., 2014). The delivery of interventions variations concerning chronic pain have shown improvement in the adaptation to that pain in various populations. The practitioners can improve Skilled CBT underserved populations with improved knowledge in the field. The APA has teams in place to determine how evidence is collected ensures that couples in the field are getting information that is applicable.

2. Design Hypothesis Method

- i. Increased skills in interpersonal communication.
- ii. Improved interpersonal relationships.
- iii. Decreased depressive symptoms.
- iv. Decreased anxiety symptoms.
- v. Reduction in pharmaceutical interventions.
- vi. Improved quality of life.
- vii. Clarity of behavioural contribution to wellbeing.
- viii. Reduction of suicidal ideation.
- ix. Improvement in emotional self-regulation.
- x. Reduction in substance misuse.
- xi. Improved communication and social skills
- xii. Support network and social encouragement
- xiii. Relatability and improvements in healthy behaviours
- xiv. Increases in perspective due to diversity in group dynamics



- xv. Affordability of care (Thimm & Antonsen, 2014)
- xvi. Safe space to develop assertiveness and appropriate boundaries through self-insight
- xvii. Holding back some secrets or probably afraid to talk
- xviii. Partner is withholding affection as a punishment
- xix. Having an affair or contemplating it
- xx. Always having discussions that always turn negative
- xxi. Still love your partner and really want things to take a positive turn

3. Analyse, evaluate and interpret data or information

- i. Helping people to articulate why they are seeking for counselling help
- ii. Formulating goals and expectations for treatment
- iii. Teaching clients how to get the most from the counselling experience
- iv. Developing a high degree of trust and favourable expectations for change
- v. Diagnosing those concerns and dysfunctional areas in need of upgrading
- vi. Exploring the client's world, including past and present functioning
- vii. Understanding the cultural context (gender, ethnicity, race, religion, socio-economic, class, sexual orientation, etc.) of the client's experience
- viii. Examining the underlying family and systemic factors that are both contributing to the problems and providing potential resources
- ix. Discussing underlying issues and concerns, as well as their meanings
- x. Supporting and accepting the client as a person while selectively reinforcing those behaviours that are most fully functioning
- xi. Confronting inconsistencies in the client's thoughts, language, behaviour and feelings.
- xii. Challenging assumptions that are inappropriate, self-destructive, counterproductive or irrational
- xiii. Uncovering hidden and unconscious motives behind actions
- xiv. Encouraging clients to accept greater responsibility for their choices and actions
- xv. Developing more options, as well as narrowing alternatives to those that are most suitable
- xvi. Providing honest, constructive feedback
- xvii. Structuring opportunities for practicing new ways of acting and being
- xviii. Facilitating greater independence in the client so that counselling ends in the most efficient period of time

THE ROLE OF MARRIAGE COUNSELLOR

Although all relationships are difficult in some form or another, there will be disagreement, conflict, and hurt even in the best of times. Marriage counselling can help individuals and couples grow and heal. Counsellor has a lot of roles to play in a marriage relationship, ranging from being a leader, guardian and a guide for the couples. Most importantly, counsellor duty to act as a leader rather than just a therapist. This is the reason why counsellor's roles in a marriage relationship really matters. Counselling provide an open ground through which the couples can express their feeling as it is in their heart. This process will allow the couples to understand each other better after the feedback has been shared for them to see. One thing about marriage counselling is that to be careful while you counsel couples. This is very important so that not end up ending a marriage rather than strengthening it. As a highly skilled counsellor, will need to control the situation during the discussion so that each of the couples will not fill intimidated and betrayed. One of other important act is observe to strategize professional suggestions to couples upon how to improve their marriage relationship. Marriage counselling consider benefit for any couple and can promote mutually change for years. Therapist should provide a platform through which the couples will have a long time communicating together and they should discuss many issues between themselves. Impose them to understand that it is through effective communication that will be able to strengthen their relationship. This is very important for a therapist to be mindful of the kind of role he plays while counselling the couples.

Behaviour and the choice of how a couple interacts is a shift that can be beneficial in couples counselling. Dysfunctional interaction can sometimes lead to violence and other potentially dangerous behaviour. Counsellors can improve relationships by reducing the occurrence of these behaviours. Another benefit of marriage counselling is in the area of emotional avoidance. Through a good counsellor, marriages can improve by decreasing this avoidance. Lacking of proper speaking skill among each other, couples can develop poor habits in communication that create more conflict that further deteriorates the marriage bond. Counselling gives couples a framework for "how" communication play role in their counselling moments. Counselling with couples also allows focusing on a relationship's strengths. Within every relationship, some things work well.



EVALUATING HYPOTHESIS BASED ON HEALING THERAPIES

a) **Psychoanalysis and Psychodynamic**

These approaches are based on the concept that unconscious beliefs, underlie maladaptive thoughts and behaviours. Gaining an insight into these beliefs can explain and relieve problems. The therapist and client also work to develop healthier ways of dealing with these previously repressed feelings and foster the client's inner resources and capability to manage their troubles.

- **Psychoanalysis** – Sigmund Freud developed his “*talking therapy*” that deconstructing and rebuilding the client's entire belief system. It benefits those who are robust of mind with an outwardly successful life but aware of long-term niggles or torments such as an inability to stay in a relationship. Freud compared the mind to an iceberg. The concept of the iceberg that actual visible above the water represents just a tiny portion of the mind, while the huge expanse of ice hidden underneath the water represents the much larger unconscious. Freudian theory also divides human personality up into three major components such as id, ego, and superego.
- **Psychodynamic** – An analytic psychology Carl Jung branch the basement of the belief that balancing a person's psyche would allow person to reach his/her full potential. The adaptation and balance of dual aspects of personality attain an entirety. Jung believe that individual people are more likely to be content, responsible and principled. The aspects of darker mind that most people hide which often clash with the conscious ego and the shadow. Therapist role is to help the couples use the archetypes to understand and change their own behaviour make positive changes to restore the balance.

b) **Cognitive and Behavioural Therapist (CBT)**

These therapist stem from the belief that it is not the things that happen to a person that upsets them, it is the way they think about the things that happen to them that upsets them, and the meaning that they assign to their experience. Cognitive and behavioural therapies show people that they hold the power to change the way they think about things, and the they react and behave as a result of these thoughts. Among behaviourist approaches Albert Ellis and Aaron T. Beck gained popularity therapists,

despite the earlier behaviourist rejection of "mentalistic" concepts in thoughts and cognitions. The main efficacy in Cognitive behavioural therapy is to help couples deal with overwhelming problems in a more positive way by breaking them down into smaller parts. This theory demonstrates useful and practical strategies that can be used in everyday life, even after the treatment has finished.

c) **Humanistic Therapist**

This approach prioritizes listening over observing. To this end, therapist use open-ended questions and qualitative tools to study personality and encourage the client to explore their own thoughts, emotions and feelings. The therapist sees the client as inherently capable of and responsible for achieving personal growth, and not as a set of flawed unconscious drivers. This theory explains how to cultivate a positive and constructive relationship by valuing their client, and showing genuine, unconditional, and positive regard. This environment nurtures the client's self-knowledge, confidence in their own choices and emotional development, so that they can self-actualize (fulfil their own potential). The limitations of Sigmund Freud's psychoanalytic theory and B. F. Skinner's behaviourism.

- **Self-Awareness** – aims to enable client to acknowledge the personal choices available to them and to understand their own motivations and goals.
- **Self-Acceptance** – values the client to allow them to accept themselves, promotes self-regard and self-belief.
- **Self-fulfilment and growth** – help the client to harness their innate abilities and resources for self-development and improvement.

d) **Systemic**

The concept of “systems” approach enables people to work out issues arising from the interplay of relationships. Therapists achieve deeper understanding of problems by working with everyone in a system (family or group), hearing differing points of view and watching people interact. The advantage is allowed couples to explore their identity as part of a larger group and also has the advantage of strengthening their community network useful for issues that worsen with isolation, such as addiction. Among the pioneers Murray Bowen was the family therapy and a noted founder of systemic therapy.

CONCLUSION

The results of this research have implications for getting people to marriage counselling and keeping them in marriage counselling. Addressing personal beliefs about the positive consequences of marriage counselling and correcting misperceptions about marriage counselling



is important. Marriage Counselling seeks to help people understand different views, appreciate each other's needs, and build on strengths to make useful changes for a harmonious life together. Through counselling and therapy, patterns of unhelpful emotions, attitudes and behaviour are discarded to be replaced with more favourable habits. It is often successful in reconstructing good relationships, especially for young teenagers and adults. The intention of this process is to help couples interact better and achieve an advance level of interactions that will improve their relationship going forward. Pursuing Marriage counselling will help people with open communication, addressing differences rationally, accepting that differences are a good thing, and taking problem-solving approaches to help solidify as strengthen their relationship. Beside there is an obvious crack in relationship that is proving too stubborn to patch, seek help. Almost people make the mistake of waiting too long before taking this step. The counselling process will also involve several steps and attempts to help modify dysfunctional behaviours, reduce emotional avoidance, and then to improve communication. In this research therapy techniques will comprise of a series of evidence-based approaches and processes structured to help people change how to see relationship and to see things in an objective manner

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A STUDY ON ADVANCED BOTNETS DETECTION IN VARIOUS COMPUTING SYSTEMS USING MACHINE LEARNING TECHNIQUES

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Article DOI: <https://doi.org/10.36713/epra5902>

ABSTRACT

Due to the rapid growth and use of Emerging technologies such as Artificial Intelligence, Machine Learning and Internet of Things, Information industry became so popular, meanwhile these Emerging technologies have brought lot of impact on human lives and internet network equipment has increased. This increment of internet network equipment may bring some serious security issues. A botnet is a number of Internet-connected devices, each of which is running one or more bots. The main aim of botnet is to infect connected devices and use their resource for automated tasks and generally they remain hidden. Botnets can be used to perform Distributed Denial-of-Service (DDoS) attacks, steal data, send spam, and allow the attacker to access the device and its connection. In this paper we are going to address the advanced Botnet detection techniques using Machine Learning. Traditional botnet detection uses manual analysis and blacklist, and the efficiency is very low. Applying machine learning to batch automatic detection of botnets can greatly improve the efficiency of detection. Using machine learning to detect botnets, we need to collect network traffic and extract traffic characteristics, and then use X-Means, SVM algorithm to detect botnets. According to the difference of detection features, botnet detection based on machine learning technology is divided into network traffic analysis and correlation analysis-based detection technology.

KEYWORDS: Botnet, Study, Security, Internet-network, Machine Learning, Techniques.

I. INTRODUCTION

A Botnet is a number of devices connected to internet each of which runs one or more bots [8]. A botnet could be a logical collection of Internet-connected devices like computers, smartphones or IoT devices whose security are broken and management ceded to a 3rd party. every compromised device, referred to as a "bot", is made once a tool is penetrated by software package from a malware (malicious software) distribution. The controller of a botnet is ready to direct the activities of those compromised computers through communication channels fashioned by standards-based network protocols, like IRC and machine-readable text Transfer Protocol (HTTP). Botnets are progressively rented out by cyber criminals as commodities for a spread of functions. To accomplish malicious activities over internet connected devices Botnet can be used very effectively. The main reason behind of getting many

security problems over internet is Botnets [9].The most common attack created by Botnets is Denial of service(DoS) [1].Botnets are very emerging Malwares compared with other computer malwares and they may generate most serious problems at the same time acts like a threat to cyber security[10]. Among the various varieties of malware, botnets are rising because the most serious threat against cyber-security as they supply a distributed platform for many illegal activities like launching distributed denial of service attacks against essential targets, malware dissemination, phishing, and click on fraud. The shaping characteristic of botnets is that the use of command and management channels through that they will be updated and directed. Recently, botnet detection has been a motivating analysis topic associated with cyber-threat and cyber-crime difficulty. Botnets are most dangerous network attacks [11]. The study of computer algorithms is called as Machine Learning (ML), Machine Learning



is the sub branch in the field of Artificial Intelligence whereas Artificial Intelligence is the sub branch in the field of Computer Science [12]. Machine Learning algorithms creates a model with the help of training data, sometime it is referred to as sample data to make prediction and to perform decision making [13]. To do anything with computers it is often required programming but by introducing a model created by machine learning algorithms would avoid programming and do what programming can able to do without the help of programming. Machine Learning algorithms can be used widely in various real-world applications such as Email filtering, Computer networks, Natural language processing,

Search Engines, Telecommunications, Internet fraud detection and DNA sequence classification Three types of Learning algorithms are present Supervised, Unsupervised and reinforcement. Machine Learning ML is widely used multidisciplinary field which uses various training models and algorithms to predict, Classify and analyse any statistical data by the uses of computer science algorithms [14]. In this paper we are going to present Machine Learning Techniques, Application and Research Issues towards Botnet detection. We are going to use two algorithms one is X-Means algorithm and the other one is Support Vector Method (SVM) for achieving the above said.

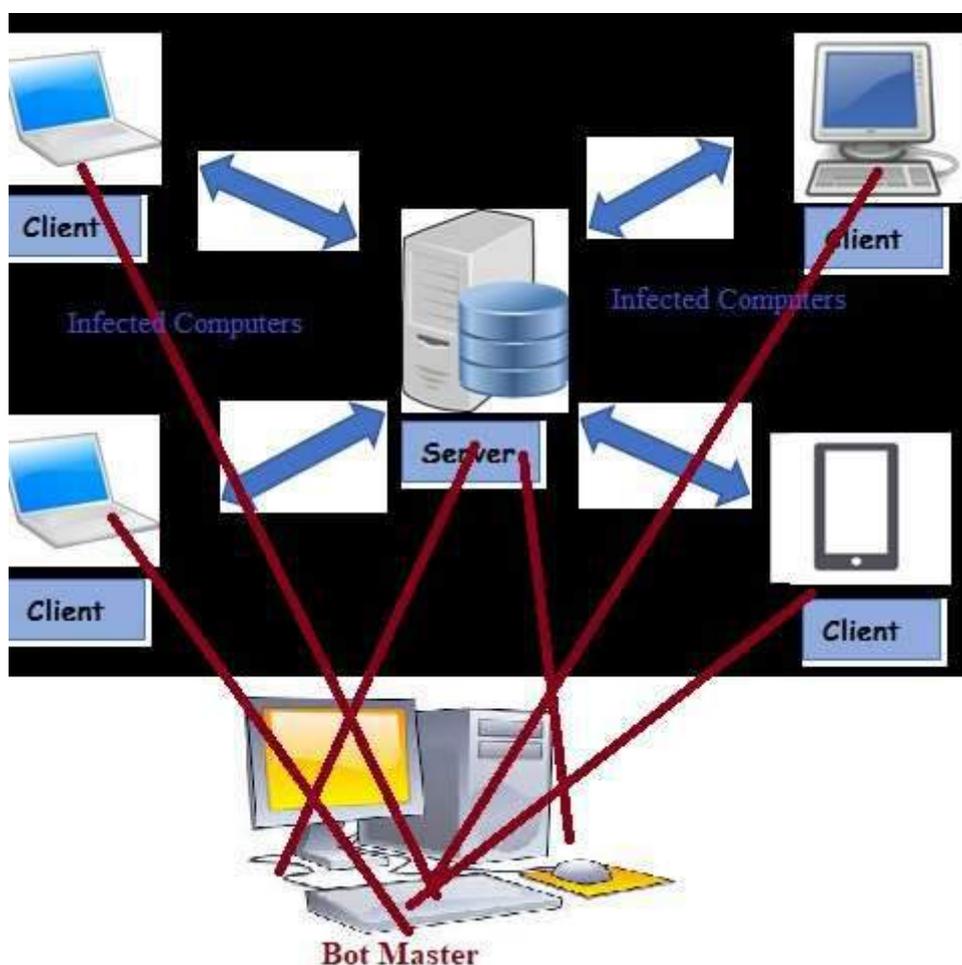


Fig-1 Botnet Scenario



Fig-2 Machine Learning Vs AI and CS

II. OBJECTIVE OF THE PAPER

The main aim of this paper is to detect Botnets using machine learning algorithms in various connected devices. Machine Learning approach uses X-Means and SVM algorithms to identify Botnet in a Network of connected devices-Means is an advanced approach than K-Means in data mining at the same time on the other hand SVM-Support Vector Method is a supervised machine learning algorithm which can be used for classification and regression problem.

III. BACKGROUND/SHORT DESCRIPTION

Due to the ascension and use of rising technologies like AI, Machine Learning and net of Things, data

business became thus widespread, meantime these rising technologies have brought heap of impact on human lives and net network instrumentality has magnified. This increment of net network instrumentality could bring some serious security problems. A botnet could be a range of Internet-connected devices, every of that is running one or a lot of bots. The main aim of botnet is to infect connected devices and use their resource for automatic tasks and usually they continue to be hidden. Botnets will be accustomed perform Distributed Denial-of-Service (DDoS) attacks, steal data, send spam, and permit the assailant to access the device and its association.

Table-1 Important Terms:

Sno	Term	Description
1	Botnet	A botnet is a number of Internet-connected devices, each of which is running one or more bots
2	BotMaster	A botmaster is a person who operates the command and control of botnets
3	Bot	An Internet bot, web robot, robot or simply bot, is a software application that runs automated tasks over the Internet
4	C&C Server	A command and control server (C&C server) are a computer that issues directives to digital devices that have been infected with rootkits or other types of malware, such as ransomware.
5	Peer2Peer	Peer-to-peer computing or networking is a distributed application architecture that partitions tasks or workloads between peers.
6	Internet Relay Chat IRC	Internet Relay Chat is an application layer protocol that facilitates communication in the form of text.
7	HTTP	The Hypertext Transfer Protocol is an application layer protocol for distributed, collaborative, hypermedia information systems.
8	SPAM	irrelevant or unsolicited messages sent over the internet, typically to a large number of users, for the purposes of advertising, phishing, spreading malware, etc.
9	DDoS	In computing, a denial-of-service attack is a cyber-attack in which the perpetrator seeks to make a machine or network resource unavailable to its intended users by temporarily or indefinitely disrupting services of a host connected to the Internet



IV. RELATED WORK

Detecting botnets in an exceedingly network is crucial as a result of bot's impact various areas like cyber security, finance, health care, enforcement, and more. Botnets are getting a lot of refined and dangerous day-by-day, associated most of the prevailing rule based mostly and flow-based detection ways might not be capable of police investigation bug activities in an economical and effective manner. Hence, planning a strong and quick botnet detection technique is of high significance. Malicious traffic, like DDoS attack and botnet communications, refers to traffic that's generated for the aim of distressful net networks or harming bound networks, servers, or hosts. As malicious traffic has been perpetually evolving in terms of each quality and amount, there are several researches fighting against it.

K-Means Clustering

K-Means Clustering is very popular clustering generally, but it is suffering from the following drawbacks

1. Poor in Scaling
2. Search is prone to Local Minima
3. Its dependents on input supplied by user.

X-means clustering and Support Vector Machine (SVM):

In statistics and data mining, X-means clustering is a variation of k-means clustering that refines cluster assignments by repeatedly attempting subdivision, and keeping the best resulting splits, until a criterion such as the Akaike information criterion (AIC) or Bayesian information criterion (BIC) is reached.

Determining the number of clusters in a data set, a quantity often labelled k as in the k-means algorithm, is a frequent problem in data clustering, and is a distinct issue from the process of actually solving the clustering problem.

For a certain class of clustering algorithms (in particular k-means, k-medoids and expectation-maximization algorithm), there is a parameter commonly referred to as k that specifies the number of clusters to detect. Other algorithms such as DBSCAN and OPTICS algorithm do not require the specification of this parameter; hierarchical clustering avoids the problem altogether.

The correct choice of k is often ambiguous, with interpretations depending on the shape and scale of the distribution of points in a data set and the desired clustering resolution of the user. In addition, increasing k without penalty will always reduce the amount of error in the resulting clustering, to the extreme case of zero error if each data point is considered its own cluster (i.e., when k equals the number of data points, n). Intuitively then, the optimal choice of k will strike a balance between maximum compression of the data using a single cluster, and maximum accuracy by assigning each data point to its own cluster. If an appropriate value of k is not apparent from prior knowledge of the properties of the data set, it must be chosen somehow. There are several categories of methods for making this decision.

Support Vector Machine:

K-means algorithm can be used to find features in Support Vector Machine SVM, A support vector machine (SVM) is a supervised machine learning model that uses classification algorithms for two-group classification problems. After giving an SVM model sets of labelled training data for each category, they're able to categorize new text. So, you're working on a text classification problem.

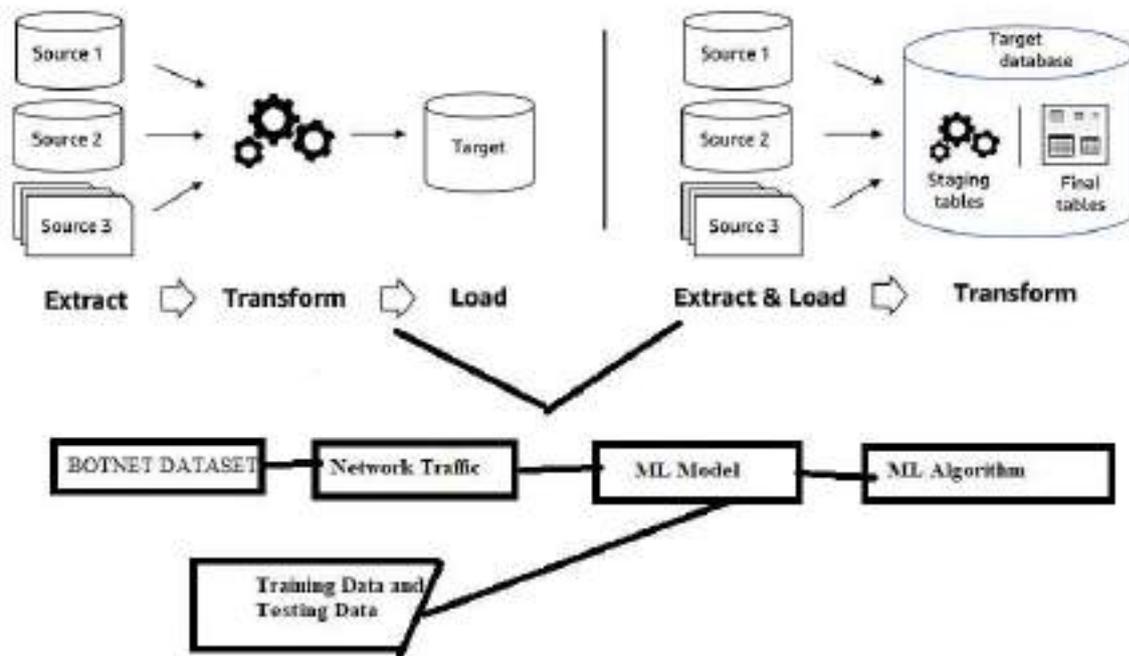


Fig-3 Botnet Analysis Using Machine Learning algorithms

Botnet Example dataset:

Id	Duration(hrs)	# Packets	#NetFlows	Size	Bot	#Bots
1	6.15	71,971,482	2,824,637	52GB	Neris	1
2	4.21	71,851,300	1,808,123	60GB	Neris	1
3	66.85	167,730,395	4,710,639	121GB	Rbot	1
4	4.21	62,089,135	1,121,077	53GB	Rbot	1
5	11.63	4,481,167	129,833	37.6GB	Virut	1
6	2.18	38,764,357	558,920	30GB	Menti	1
7	0.38	7,467,139	114,078	5.8GB	Sogou	1
8	19.5	155,207,799	2,954,231	123GB	Murlo	1
9	5.18	115,415,321	2,753,885	94GB	Neris	10
10	4.75	90,389,782	1,309,792	73GB	Rbot	10
11	0.26	6,337,202	107,252	5.2GB	Rbot	3
12	1.21	13,212,268	325,472	8.3GB	NSIS.ay	3
13	16.36	50,888,256	1,925,150	34GB	Virut	1

K-Means Algorithm:

The most common algorithm uses an iterative refinement technique. Due to its ubiquity, it is often called "the *k*-means algorithm"; it is also referred to as *Lloyd's algorithm*, particularly in the computer science community. It is sometimes also referred to as "naive *k*-means", because there exist much faster alternatives.

Given an initial set of *k* means $m_1^{(1)}, \dots, m_k^{(1)}$ (see below), the algorithm proceeds by alternating between two steps:

Assignment step: Assign each observation to the cluster with the nearest mean: that with the least squared Euclidean distance. (Mathematically, this means partitioning the observations according to the Voronoi diagram generated by the means.)

$$S_i^{(t)} = \{x_p : \|x_p - m_i^{(t)}\|^2 \leq \|x_p - m_j^{(t)}\|^2 \forall j, 1 \leq j \leq k\},$$

where each x_p is assigned to exactly one $S_i^{(t)}$, even if it could be assigned to two or more of them.

Update step: Recalculate means (centroids) for observations assigned to each cluster.

$$m_i^{(t+1)} = \frac{1}{|S_i^{(t)}|} \sum_{x_j \in S_i^{(t)}} x_j$$

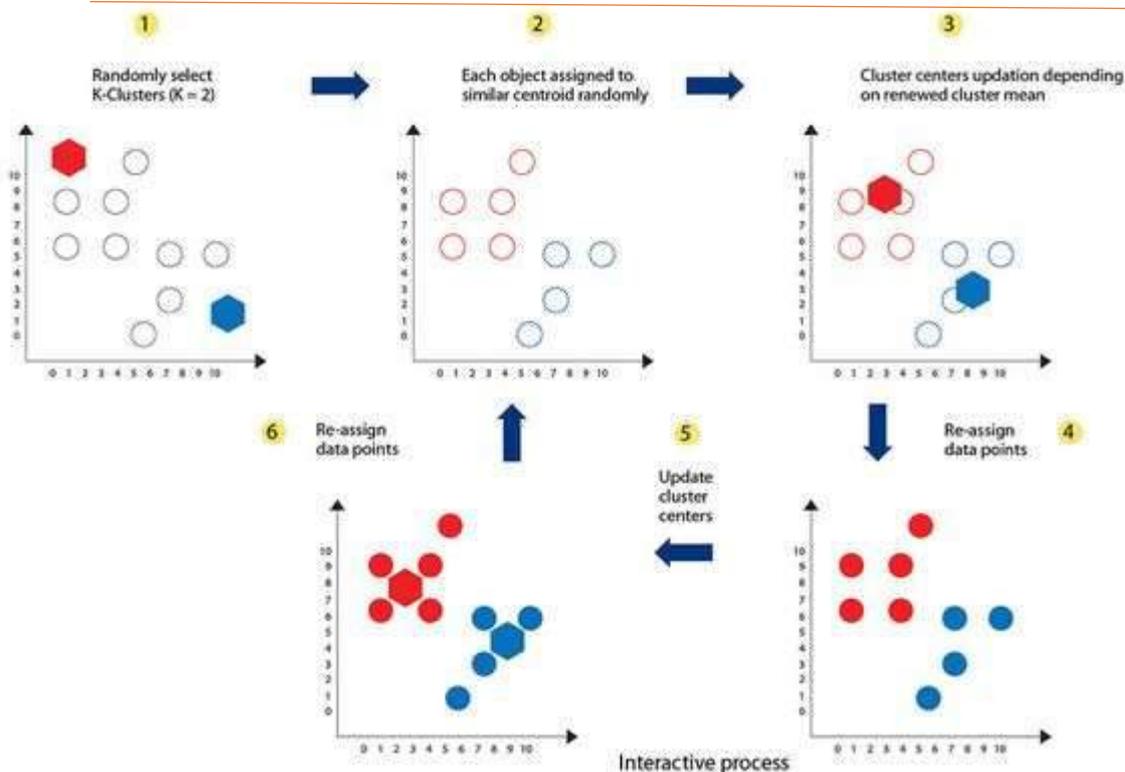


Fig-4 X-Means Clustering and Feature Extraction by SVM



V. **Expected results:** The main goal of SVM is to classify data and create a classification model. This created model is used to identify Botnet Behaviours, of course the model build was done by submitting a botnet behavioural dataset to classification algorithm, to achieve clustering of data, it uses X-means clustering algorithm. Finally the system may give optimal result by the use of SVM and X-Means Algorithms.

VI. CONCLUSION AND FUTURE WORK

Botnet detection is a challenging task, since the creators of botnets continue to adopt innovative means in creating botnets. In this paper, X-Means clustering algorithm and Support Vector machine SVM is implemented in to detect bot. it is concluded that the proposed algorithms show high recall rate for all the datasets compared to k-means algorithm which means returned most of the relevant results. The future work of this study is to take any real time Botnet dataset and Identify its Behaviour and to take necessary preventive actions to safe guard the system.

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THE PHENOMENON OF MANAGEMENT AND LEADERSHIP PERSONALITY IN THE VIEWS OF ORIENTAL SCHOLARS

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ANNOTATION

In the article, ideas about the constructive-phenomenological content of management process and the requirements for the leader in the decision-making of a just society have been researched, which were expressed in the works of Eastern scholars.

KEY WORDS: *State, governance, just society, leader, leader ethics, leader qualities, leadership responsibility, spiritually, politics.*

1. INTRODUCTION

Nowadays, a huge and complex process of economic, social, political development and cultural and spiritual renewal is happening in our country. Uzbekistan has taken its position as an independent state in the world community.

The spirituality, potential and talent of the leaders are important in the implementation of radical changes and reforms in the life of the society. The correct principle, purposes, methods of personnel activity predetermine the success of management, state, society.

President of the Republic of Uzbekistan Sh. Mirziyoyev emphasizes that a modern leader must be a person who strives for success, is able to take responsibility, is an organizer and has a strong will. In addition, he emphasizes that a leader must be able to perform his/her duties effectively, to mobilize his/her staff, to find solutions to the serious problems of the team. [1,104].

2. RESEARCH METHODOLOGY

In the course of the research were used scientifically-philosophical principles and methods such as systematics theoretical-deductive conclusions, analysis and synthesis, history and logic, hermeneutic analysis, inheritance, universalism and nationality, comparative analysis.

3. DISCUSSION

Qualities, psychological characteristics, professional qualities, tolerance, dedication of the

leader are important in the radical reform of public administration. The first classical conceptual bases of the above issues are written in the works of our scientists who lived and worked in the past. The works of great scholars are significant such as Ali Tusi, Yusuf Khas Hajib, Abu Ali Ibn Sino, Abu Nasr Farabi, Abdurahman Jami, Davani, Alisher Navoi and Amir Temur. So, it is important to study the first classic studies of management, leadership, modern leadership and its peculiarities.

The ideas and scientific discoveries of Eastern scholars have been shining their golden light on humanity for centuries.

The development of science and society can improve without difficulties in a state in which the system of government is based on perfect principles. The development of governance in society is a guarantee of the development of science, the development of nation, a free and prosperous way of life.

Ali Tusi who an Eastern scholar emphasized in his work "Siyosatnoma" that is impossible to give two tasks to one person and the same one task to two people. [2,76]. If two jobs are given to one person, these jobs will not be completed or there will be deficiencies in the job. Because one person doesn't work on two things sincerely. If the same task are given to two people, the task will not be performed. These ideas have not lost their essence in the present.

Ibn Sina emphasized that the process of leadership and management was based only on scientific, intellectual maturity. Ibn Sina divided the



theory of leadership into three types in his "Donishnoma"[3,96]:

- The first theory of governing the people to maintain order and discipline in society. That theory is also divided into two types: the first is to make the conditions and guidelines, the second is about conducting politics.

- The second theory is family management. Regulating the relationship of husband and wife, father and child, master and servant in the family.

- The third theory is about a person's self-attitude».

Ibn sina emphasized that the management of society was extremely complex and delicate. He wrote that the peace of the country could be ensured by maintaining order and discipline in society and governing the people on the basis of science[3,114].

Abu Rayhan Beruni expressed important ideas about labor and labor education in the perfection of human. He divided into each profession into types according to their labor. Hard workers included builders, artisans, coal miners and scientists. Beruni encouraged scientists to pay special attention to their work. He called the scholars the disseminators of enlightenment. Beruni wrote positive comments about the labor of miners and peasants. He emphasized that padishahs should take care of peasants and miners. Because these people are the backbone of the community.

Scholar Yusuf Khas Hajib was kind to the artisans at that time. Because the peace of the state, its position and wealth in the world and well-being of the people depended on the artisans[4,84]. Indeed, vocational education was a socio-political, material and cultural unit of development. Yusuf khas Hajib also wrote about farmers, cattle-raiser, doctors, merchants and scientists. He emphasized the need for a fair leader to support above professionals.

Kaikovus wrote that science and profession were necessary for the development of society. According to comment of Kaikovus, if a person has a high lineage and hasn't profession, he/she will be far from the respect of the people. [4,121].

According to works of Abdurahman Jami, if a leader who respects science and profession will be respected by his/her people and the state that led by such a padishah will prosper[4,144].

Davoni who was Eastern scholar said: "If a child is engaged in any science or profession, it is necessary to support him/her in every way, to create all the conditions for him/her. Then child will focus all his/her attention on mastering this profession quickly and thoroughly". [5,125].

It should be noted that the information written by Eastern scholar Farabi is also useful for the modern leader.. Abu Nasr al-Farabi wrote that city governors and padishahs should have twelve important qualities in his work "Fozil odamlar

shahri". He emphasized that a leader must have physical, mental, moral maturity and character of justice. In particular, he wrote that wisdom was very important for a leader.

From the point of view of the modern science of psychology, the characteristics of a leader are divided into the following:[6,125]:

- Wisdom is manifested in unity and perfection;

- The leader's thinking is inextricably linked to perception and memory;

- The leader's logical thinking reflected in his/her creative imagination.

- The leader's world-view is based on logical thinking;

- The leader's speech is embodied in his/her mind;

- The mental strength of the leader depends on his/her physical condition.

The results of research on the phenomenon of governance have proved that Farabi's theories were correct. Modern researches have shown that the qualities must be formed in the personality of every leader that Farabi emphasized in his time also apply to leaders in the 21st century.

According to comment of Farabi, cities are the highest form of human coexistence, where there are the necessary conditions for human development.

Farabi emphasized that human joined together as a result of a natural necessity to form a community[6,168].

Farabi divided the city-states into the noble and the ignorant. The leader the noble city must had been just an high morals and made his/her people happy. But there were some cities where the opinion of its leader and residents was to amass wealth. Farabi called such cities ignorant. A city where helped each other to achieve true happiness, if united, that city was anoble city. People who united for the sake of happiness were called a virtuous community. Farabi divided human qualities into qualities that emerge at birth and during life. In his opinion, innate qualities included a person's intellect and ability, but innate qualities were rare in life. Such people needed nurturing. Farabi pointed out that a person with innate abilities was not advised, his/her abilities could quickly disappear. Innate ability could sometimes serve goodness, sometimes evil deed. Farabi divided city-state governance into two in civil society: the first was real governance, in which social action, moral norms and mutual respect were established for the well-being of citizens. The second was fake governance, in which human life, social relations and social stratification were distracting. The method of fake governance was peculiar to ignorant states.[6,125].



Indeed, it is difficult to imagine the future of any institution or organization without fair governance.

Farabi said: " There is stratification in the governance of society". He separated several types of leaders and employees. The reputable workers or people in the city acted according to their position, ability and purpose and they stood first. People who acted like them were second.

4.RECOMMENDATIONS

By analyzing the views of our great scholars on the phenomenon of governance mentioned above, one can see the connection between the upper and lower echelons in the management of modern society. This connection is the relationship between leader and staff. The positive nature of this attitude is a guarantee that future plans will be effective.

In conclusion, the first studies of views on the image of the modern leader were reflected in the works of Oriental scholars. Because Oriental scholars provided valuable information about qualities of leadership that were essential in governing the state and society.

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EXPERIENCE OF DEVELOPED COUNTRIES ON THE USE OF HUMAN CAPITAL IN THE EDUCATION SYSTEM

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ANNOTATION

This article examines the concept of human development in the new stage of development of Uzbekistan. The changes in social relations and the formation of values in the process of social development are also analyzed.

KEYWORDS: *social stability, development, human factor, human concept, nation, ethnicity, historical development.*

DISCUSSION

Today, education is the most important part of human and social development has become an important factor. Educational institutions have become the main form of professional training, the transmission of cultural heritage from generation to generation. Education serves the acquisition of knowledge by the individual, helps him to master social norms, supports his entry into economically active life. In terms of the impact of education on the formation of a person's spiritual and intellectual needs and abilities, it is accepted to look at it from the perspective of three interrelated: the individual, the state and society.

At the community level, education should be focused on shaping individual global spiritual values. This is the basis of social development. From an economic point of view, the acquisition of knowledge by people ensures the economic, scientific, cultural and social development of society. Well-known American economist Stoner points out that "in the post-industrial period of the economy, knowledge has replaced land, labor and capital and has become the most important basis of modern production systems".

Experts estimate that the share of physical capital in the current period is 16.0% of the world average national wealth. At present, the share of human capital in national wealth is 64.0%, the share of natural capital is 20.0%. Education as the most important factor in human development has proven to have a major impact on the solution of a whole complex of economic, political, social and humanitarian problems. These include:

- Ensuring a decent standard of living and quality of life in each country;
- ensuring effective employment;
- ensuring sustainable development;
- reduction of social inequality;
- strengthening the structure of civil society;
- observance and effective implementation of human rights;
- Creating conditions for the full and comprehensive realization of the individual's potential.

The international community has developed and is taking steps to implement a number of strategic programs aimed at ensuring the proper role of education in human development, while properly assessing the importance of education in today's world. One of them is the concept of "Education for All". The basic principles of the concept were stated at a conference organized in 1990 in Jomten (Thailand). The conference adopted the Universal Declaration "Education for All". This document is based on the Universal Declaration of Human Rights and the Convention on the Rights of the Child: "Every child, young and old, has the right to an education that satisfies his or her basic educational needs, in the highest and most perfect sense of the word." The Declaration "Education for All" states that the education system should help everyone to show their talents and potential, encourage individuals to improve their lives and develop the potential to change society.

The main factor in ensuring sustainable socio-economic development of the republic and its



economic regions in the conditions of market relations and the economic viability of our country is the level of human capitalization. To this end, the creation of a quality education system in the country depends on the level of use of innovative high-tech means of production.

The President of the Republic of Uzbekistan Sh.M.Mirziyoev in his report at the enlarged meeting of the Cabinet of Ministers on the main results of socio-economic development in 2016 and the most important priorities of the economic program for 2017 said: The Prime Minister has been tasked with "critical analysis of the economy, the social sphere and the correct identification of the demand for the necessary specialists in each region"[1].

Ensuring the capitalization of the human factor in the current era of globalization of the world economy is associated not only with the development of the higher education system based on its requirements, but also with providing it with the necessary information and communication conditions at the global economy level. Because the XXI century is associated with the formation and development of a single common economic market in the world on the basis of interdependence of countries' markets. The formation of this single economic market requires the development of the market of higher education services of the republic in conjunction with the world market of higher education services.

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The adopted Bologna Declaration aims to increase the intellectual, cultural, social, scientific and technological capabilities of the population on the basis of ensuring interdependence in the education system of the European Union. The main goal of the development of the higher education system is to ensure the effective use of theoretical, practical scientific and technological innovations created in the world.

The labor market is highly educated into the market of higher education services deliver the demand for specialists in the areas of specialization and provide the graduate with jobs. Of course, in the

context of the demand for highly educated specialties, market relations based on different forms of ownership can not be solved without government intervention in the implementation of this problem in a market economy. At the same time, based on the study of the experience of foreign countries in regulating the relationship between higher education services and the labor market, it is necessary to use their experience, which can influence the solution of this problem in our country[2].

According to the World Bank, economic growth is 16 percent dependent on capital invested, 20 percent on natural resources, and 64 percent on human capital. This means that human capital makes up 2/3 of the national wealth[3].

According to data provided by World Bank experts Salary of a worker with higher education in Uzbekistan, secondary special is 55% higher than the salary of an educated worker. However, the figure is 38 percent in Armenia, 39 percent in the Czech Republic, 43 percent in Bulgaria, 50 percent in Slovenia, 51 percent in Russia, 62 percent in Albania and Macedonia, 71 percent in Poland, 82 percent in Hungary and 98 percent in Turkey. The level of human capitalization in Uzbekistan does not fully meet the requirements of economic development based on free competition. To ensure that it is at the level of demand, it is necessary to conduct the market of the higher education system on the basis of aggregate demand and aggregate supply in relation to the labor market. The following is a model of the German labor and higher education services market. We have examined the following models of the development of the interconnectedness of labor markets with the market of higher education services in advanced developed countries.

While the Swedish labor market model is based on stimulating supply and demand based on various developed programs, the Scottish labor market model examines the social services that occur between labor resources producers and consumers by the Scottish Qualifications Board.

The Scottish Government evaluates the qualification board by scientifically studying the producers and consumer services of higher education services and, in collaboration with experts, develops the content and methodology for determining professional qualifications in collaboration with employers.

In the British model, sectoral councils are developed in the economy and perform the following functions:

- Develop strategy for the education system;
- In the UK, the labor service prepares jobs in advance when there are structural changes in the economy. In general, in Western European countries, training, retraining is carried out by companies, firms and government agencies, subsidies are paid during



the retraining. According to Twenty University estimates, by 2020, 60% of school graduates in Europe will continue their vocational training in higher education.

The main focus in education is on the skills and practical abilities of the trained professionals, their professional training. 20% of the bachelor's degree programs are devoted to general training, including foreign language learning. This figure is set at 12% at the master's level. The rest of the time set in the program for the training of specialists will be spent on general and qualification training[4].

Develop a strategy for the structure of education based on the classification of job requirements of highly educated professionals. Participate in the certification of professions after graduation, monitor their professional development in the workplace.

The U.S. model develops various programs to regulate various higher education services and labor markets (Technical Preparation for a Work-Class Work Force). A Tech Prep consortium has been set up to implement this program. Its main purpose is to prepare vocational training and image of the workplace, as well as to develop new areas of professionalism. There are no laws regulating labor relations in the United States, but employment agreements are made with the employer and the trade union that employs the employee.

Public service organizations have national banks of workplaces, which perform the functions of the employment service, the collection of data on workplaces, vocational and psychological unemployment and the dissemination of the collected information on a computer basis. Employment bureaus use this information through a dedicated terminal. The effectiveness of job placement in foreign countries is determined by the time of filling the vacancy, not by filling the vacancies. In the European Union, the focus is more on employment, on those who do not work at all, which, in turn, increases their social dependence on the state.

The following educational models are used in the Russian Federation. The types of these models are listed below. The first group can be divided into Germany, Denmark, the United Kingdom and Japan, where the education system is implemented by bringing skills and practical experience as close as possible to the requirements of the labor market. The second group includes the United States, Sweden and France. In these countries, this is done through the development of public-private partnerships, the establishment of technology parks, internships in public and private enterprises. In order to ensure the sustainable development of the economic region at the micro and macroeconomic levels, rather than to meet the demand for highly qualified specialists in the country, to ensure the interdependent

development of labor and higher education markets in the economic regions. provides stabilization of the economic situation.

Although there are methods to study the system of higher education in the country, the demand for highly qualified specialists at the national and economic levels, the demand for them in the context of market relations, ways to develop the market of educational services and the role of the state in this area. it can be said that it has not been sufficiently studied on the basis of the requirements of the economy. The main problem in the current situation is that the relationship between higher education services and the labor market is a non-compliance with the requirements of the law of aggregate supply and demand, the basic economic law of a market economy.

Necessary conditions are being created in our country for the development of the national higher education system in order for young people to acquire the knowledge of highly qualified specialists in foreign countries and work abroad, as well as the essence of the higher education system in the international context.

In order to ensure that higher education in the country does not lag behind world higher education, it is necessary to pay attention to the following:

- be based on a positive approach to the use of international higher education experience. In studying it and applying their experience in our country, it is necessary to take into account the socio-economic characteristics of the country, which will ensure the prevention of risks associated with the development of higher education;

- It is necessary to strengthen cooperation with developed countries in higher education on the basis of ensuring its internationalization, while maintaining the national classification of higher education;

- It is necessary to develop the use of effective experience in the development of higher education with the member countries of the Shanghai Cooperation Organization.

We believe that one of the main problems in solving the system of higher education in our country is to ensure that the domestic higher education system is linked with the international education system:

- The organization of forms of development of higher education on the basis of market requirements and the origin of national traditions in the integration with the international system of higher education;

- based on innovative integration of higher education development on the basis of world standards;

- The knowledge acquired in higher education institutions should be evaluated not as a diploma, but as a practical application of the theoretical and practical knowledge acquired by students.



The study, analysis and creative application of world experience in the implementation of human capital investment processes is of great importance. The Chinese experience in this regard is particularly noteworthy. The modern education system of the PRC has a number of features compared to the education systems of foreign countries. For example, China, another major economy in Asia, is a country where the literacy rate of the Chinese population, including the rural population (this segment of the population is a major part of both countries), is growing rapidly. In China, only 15–17% of the adult population is illiterate. (India - 47%; Bangladesh - 61%; Pakistan - 59%; Iran - 27%; Turkey - 17%; Indonesia - 15%). Another indicator in China is the illiteracy rate among women aged 15–24. This indicator reflects the effectiveness of the fight against illiteracy over the last 20 years and indirectly reflects the role of women in the family and society.

In China, the figure is 4 percent. This indicator is 44% in India; Bangladesh - 63%; Pakistan - 61%; Iran - 10%; In Turkey - 8%; In Indonesia, it is 4%. The Chinese education system includes: basic education (preschool, general primary and secondary), secondary vocational education, general higher education and adult education. Approximately 3 million students study at higher education institutions in the PRC. Duration of study is 4-5 years. The number of higher education institutions exceeds one hundred. In the last twenty years, 300,000 people have received PhD and 20,000 people have received doctoral degrees.

Currently, about 160,000 graduate students are writing dissertations. China, which lags behind many Asian countries in terms of enrollment in primary education, has a lower number of university students than these countries. This is partly explained by the low share of education expenditures in the country's GDP (2.6%), but this figure has been increasing in recent years. In addition, two more aspects need special attention. First, China has a wide network of vocational, pedagogical and medical schools (more than 4 million students, duration of study - 2–4 years). Various forms of continuing general education and adult professional development are common (these forms of education cover more than 12 million people). There is also a system of vocational retraining for those who have lost their jobs in state-owned enterprises. Second, the media play a major role in increasing the professional literacy and technical skills of the population. After the complete electrification of rural areas in the 90s of the twentieth century, educational programs began to be shown on television en masse. During the reform years, 280,000 Chinese students were sent abroad to study, and now 100,000 of them have returned to their homeland. Chinese students studying abroad are distinguished by their good basic

knowledge and discipline in subjects such as mathematics, physics, and biology.

By the beginning of the XXI century, the country had more than 120 areas of development and adoption of new technologies (technoparks). The largest of them is located in Beijing. The Chinese education system is often described as a “pragmatic”, “egalitarian”, “democratic” system. It is necessary to add another “selective” element to these descriptions. For the average Chinese, the chances of reaching the upper stages of the education system are slim, with the result that only the most talented students reach these stages.

Admission to a higher education institution is a great achievement for a talented high school graduate. The selection for admission to some universities is up to 200-300 people per seat. Talented young people enjoy various benefits at different stages of education. They are provided with state scholarships, subsidies from enterprises, organizations and so on. Contract tuition is not common in China, and those who want to enroll on a contract basis are generally accepted.

Often there are cases when the student pays the contract funds by the company where he previously worked. Most students receive higher education for free. The selective nature of the higher education system is reflected in another case: the country's higher education institutions are divided into several hierarchical categories. Based on their scores on school graduation exams (held simultaneously in China and the rest of the country), a prospective entrant may be allowed to take entrance exams at higher education institutions that meet those scores (and the applicant may choose a higher education institution that requires less scores than he / she). The above-mentioned cases reflect the high status of the education system, which is inherent in the traditions of Chinese culture, as well as the special place of the leading universities in the country. In the last years of the twentieth century, the monthly salaries of teachers and researchers in the PRC increased significantly. Another feature of the Chinese education system is the priority of natural and technical sciences and applied sciences in the educational programs of higher education institutions (about 60% of student places, in the US - 14%, in the Netherlands - 18%, in Thailand - 22%, in Japan - 26%, in Malaysia - 30%). Compared to developed countries or neighboring countries, students studying in social sciences and humanities in China are a minority. In China, maintaining the balance between educational institutions of different levels and directions and the content of educational programs is under the strong control of the state.

There are about one million educational institutions of various levels and directions in China, where more than 200 million people study. Chinese



law gives everyone the right to education, including minorities, children, women and people with disabilities. In addition to public educational institutions in China, there are also non-governmental educational institutions. In China, non-governmental educational institutions are educational institutions established at the expense of citizens, enterprises, community organizations, as well as schools and higher education institutions established at the expense of collective contributions of the population.

Teachers and students of community-based educational institutions take full advantage of the benefits provided to public educational institutions. At the end of the twentieth century, all non-state primary and secondary schools in China were accredited. The situation is different in higher education institutions: only 21 out of 1,200 higher education institutions have the right to issue state-standard diplomas. Non-state higher education institutions themselves have the right to choose textbooks and set directions.

Their curricula are based on filling vacancies in a particular field and serving the needs of the local economy when there is a shortage of staff in a particular field trained by public educational institutions. The emergence of non-governmental educational institutions has led to a sharp increase in the efficiency of use of human, financial and material resources - they employ experienced retired teachers, whose salaries are inextricably linked with workload and qualifications.

These facilities have well-equipped computer classrooms, language classrooms, laboratories, which, unlike public schools, can also be used in the evenings and during holidays. On the other hand, showing non-educational institutions

The features mentioned are of concern to the government. Because the separation of the graduates of these institutions from the graduates of public institutions may lead them in the future to become oppositionists or carriers of ideas and values alien to this society. In addition, the fact that many private schools and universities in China are directing graduates to continue their education abroad is leading to an "influx of smart people". The need of educational institutions for graduates is an indicator of the effectiveness of their activities.

At the end of the twentieth century, 85% of graduates of private higher education institutions in Beijing were employed in their field, and their theoretical training and practical skills did not lag behind those of graduates of public educational institutions. In conclusion, people with higher education tend to have more opportunities and inclination to invest in human capital. This situation is also observed among secondary special educators. In addition to the economic benefits of higher

education, its impact on the welfare and social and political life of the country is immeasurable.

Over the past 30 years, China's literacy rate has shifted from a backward country to a country with an effective secondary and higher education system. The country has been able to create conditions for the reproduction of personnel necessary for economic development. China's success in the field of vocational education is confirmed by the growing number of people coming from abroad to study there.

Taking into account the attention paid to human capital and investments in China, it is expedient for Uzbekistan to use this experience in the following areas:

- It is necessary to implement the selective aspects of the higher education system for the education system of the country, expanding and improving;

- Based on experience, it is expedient to increase the number of natural and technical specialties rather than social and humanitarian specialties;

- It is necessary to establish and develop non-governmental educational institutions in order to ensure their place in the labor market.

In conclusion, the increasing importance of knowledge, information in social development, the gradual transformation of knowledge into human capital will dramatically change the role of education in the structure of modern social life. Of course, different countries and groups of different countries have their own characteristics of the state of the education system in the social structure. However, the emergence of a new information civilization has brought the field of education to the center of social life.

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INDIVIDUAL-PSYCHOLOGICAL AND PSYCHOPHYSIOLOGICAL APPROACH TO THE PROBLEM OF CHOOSING A PROFESSION

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ANNOTATION

The urgency of research on psychological propensity activity is determined primarily by a large practical significance of this problem. The steady increase in the number of jobs increases the importance of the study of human abilities and aptitudes for different activities. These practice areas as vocational guidance and counseling, professional selection and placement of personnel in work posts, job training, will require the development and implementation of reliable and predictive diagnostic techniques level of development tendencies and their qualitative uniqueness.

The value of the work lies in the fact that the results of the study contribute to the development of scientific bases of professional self-determination. We believe that the results of the study are significant for the development of the early manifestations and development dispositions in adolescence, as well as vocational guidance in schools and other educational establishments, with a view to the effectiveness of self-determination to the student activities.

KEYWORDS: *human abilities and propensity, individual psychological and psychophysiological approach, psychological preconditions, human factor, "external through internal", "internal conditions", typological properties of the nervous system, natural prerequisites, individual differences, properties of the nervous system, typology, motivation*

DISCUSSION

The relentless attention to the human factor indicates the fundamental importance of human resources for the further development of our society. The professional preparedness of an employee is increasingly acquiring not only moral and psychological significance, but also substantially economic, social significance, the quality of vocational training of young people depends not only on the development of a network of various professional educational and technical bases, material, living and other social conditions, and on the fact to what extent, the individual has chosen the right profession, whether the chosen profession corresponds to his individually psychological qualities, whether the profession meets his needs.

The relevance of research on the psychological activity of propensity is determined primarily by the great practical significance of this problem. The steady increase in the number of professions

increases the importance of studying a person's abilities and propensity in relation to various activities. Such areas of practice as vocational guidance and consultation, professional selection and placement of personnel in jobs, industrial training require the development and use of reliable, predictive methods for diagnosing the level of development of propensity and their qualitative originality. Such methods are also necessary to diagnose the direction of the propensity of children, the severity of their creative, musical, artistic abilities, etc. The orientation contributes to the choice of the most appropriate capabilities and propensity of a person, professions, ways and methods of building learning, taking into account individual characteristics.

All this significantly affects the formation of positive professional motivation and job satisfaction, and, consequently, satisfaction.



An individual psychological and psychophysiological approach to the problem of choosing a profession today is becoming an urgent task of professional training for young people. One of the goals of the unfolding school reform is to promote better choice of occupation by young people, in accordance with their propensity and interests. However, this task, in addition to practical measures for broad professional education in order to correctly orientate in the world of professions, includes a number of fundamental scientific research. In understanding propensity, we proceed from the concepts that were developed in the works of S.L. Rubinstein / 1940 /, B.M. Teplova / 1941 /, V.N. Myasishcheva / 1962 /, M.G. Davletshina, / 1977 /, B.R. Kadyrova / 1990 / and others, where the inclination was considered as an orientation towards the corresponding activity, as a need for certain occupations.

Frequent cases of coincidence of propensity and abilities are explained precisely by the internal connection of individual characteristics in activity and its self-regulation, which are the main psychological prerequisites for the development of both abilities and propensity.

In the context of our research, propensity and interests can be attributed to the needs of knowledge "inherent in all living things." These basic needs are the source of self-expression of self-development, the source of self-improvement of a person, prompting the unknown, the unknown.

A number of works emphasize the role of a complex complex of unconditioned reflexes as functions of the subcortical formations of the brain and are direct prerequisites for the formation of dominant needs, special, organic impulses.

Propensities - gravitation towards certain types of activity, internally motivated positive attitude towards activity.

Attention to individual differences in propensity stems from the general attitudes of our society, which has embarked on the path of restructuring, when the "human factor" is brought to the fore, concern for the identification and implementation of the creative powers of the individual. As you know, it is activity that gives the greatest satisfaction and allows you to bring the greatest benefit to society.

We proceed from the premise that the development of propensity, which occurs under the decisive influence of socio-historical conditions, life experience, fashion and other social factors, envy and from individual "internal conditions" through which external influences are refracted. This understanding of the determination of psychological properties, in particular, propensity, goes back to the well-known formula of S.L. Rubinstein - "external through internal", which characterizes both the mechanism of

psychological reflection and the principle of development of the psyche.

The inclination as a specific tendency of a person to prefer this or that activity is not the result of only external influences, although they play a fundamentally important role in mental development. Obviously, along with the various factors of the external environment / education, etc. /, "internal conditions" through which external influences are refracted are of no small importance.

There is no doubt a close connection between propensity and needs, leading motives. It is the dominant motivation that gives a meaningful orientation to classes, gives them a personal meaning, value.

At the foundation of developing propensity lie neurophysiological and psychophysiological processes that ensure the expression of needs, selective activity. From the actual needs and leading motivations of envy, in addition to the content side of propensity, the dynamics of manifested propensity, their tension, gravitational force, stability, etc. At the same time, the formal-dynamic side of propensity cannot but depend on the typological properties of the nervous system, i.e. from the natural prerequisites of individual differences in neurodynamics.

Thus, the manifestation of a tendency as a gravitation towards certain types of activity is associated with a certain level and originality of dynamic regulation.

This means that the internal prerequisites of inclination - not only dynamic, but to some extent also its content sides - can be attributed to the totality of individual natural characteristics of the brain.

All this indicates the need for complex, multilevel psychophysiological studies of the determination of propensities. Their multifaceted study, in particular, from the side of individual natural preconditions, is an urgent scientific task.

Differential psychophysiology provides the existing basis for the psychophysiological study of the premises of propensity. As you know, in the scientific school of B.M. Teplova, on the basis of the concept of the basic properties of the nervous system, the origins of individual differences in the sphere of abilities are in-depth explored. Taking into account the closeness of propensity and abilities, one can suggest closeness, interpenetration of their natural prerequisites. We proceed from the idea that mental activity and its self-regulation in their natural conditioning can be considered a common factor in the development of propensity and abilities.

Especially of great practical and theoretical importance is the study of the individual natural prerequisites of propensity in relation to adolescents. In a transitional age, a growing person can already clearly give preference to certain types of activity / or unconsciously reach for them / that are more consistent with his internal prerequisites for



development, individual characteristics / for example, by the pace of execution, by the role of imagery of thinking or memory, by the degree of tension and dr./.

The tendencies of adolescents were studied by us in a complex: in the psychological and psychophysiological aspects. A certain system of psychological techniques was used to diagnose propensity. Further, on the same subjects, individual differences in the ratio of signaling systems were studied. A systematic comparison of psychological and psychophysiological indicators of individual differences related to the sphere of propensity was carried out. We tried to identify internal connections between certain types of propensity and the individual-natural prerequisites for such connections.

We were convinced that during adolescence, preferences for certain types of activity, formed during the interaction of a growing person with social reality, are influenced not only by social requirements, expectations, one or another awareness of professions, conscious attitudes, life plans, etc. .d., but to a certain extent due to psychophysiological prerequisites for development, which are not always conscious.

Disclosure of some of the internal conditions of the selective attitude of adolescents to certain types of activity provides an orientation towards understanding the complex processes of the development of propensity, can help optimize these processes.

CONCLUSIONS

In contrast to the traditional understanding of the development of propensities for a certain type of activity, as a typologically determined system of ways to most effectively perform an activity, it develops only in people with active positive motivation for activity, we proceed from the fact that:

1. Propensities develop always and under all conditions.
2. Propensities develop on the basis of not only the individual typological properties of the nervous system, but also the personality characteristics of adolescents.
3. One of the main features of the development of propensity are motivational factors.
4. The best understanding and performance of the activity is the process of developing addiction.

The study provides a holistic view of the development of addiction in adolescence. For the first time, a systematic comparison of the psychological indicators of individual and group differences related to the sphere of propensity was carried out. Thus, it has been experimentally established that the development of propensity depends not only on environmental influences, but also in relation to this

sphere of individual differences: external factors act through internal conditions.

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DEVELOPING EMPLOYEES' WORK-LIFE BALANCE STRATEGIES TO IMPROVE INDIVIDUAL HEALTH AND WELLBEING BALANCE

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Article DOI: <https://doi.org/10.36713/epra5973>

ABSTRACT

The aim of this study is to discuss employees' work-life balance strategies to improve individual health and wellbeing balance. A healthy balance between work-life and home-life is incredibly important and something everyone should strive to achieve. However, it is not uncommon for employees to find their personal life, suffering as they struggle manipulate family, friends and other commitments with busy schedules. The finding determines that employees are desiring more control over their work patterns and an overall healthier work-life balance. The main aim of this case study is to explore the work-life balance that utilize to improve the employee's performance organization. This study also integrated the work-life balance effectiveness, the importance of a supportive work environment, employee commitment and motivation. Also emphasize, employee wellbeing and productivity, employee job satisfaction and quality work life, organizational culture change, and low utilization of the job sharing. The finding of work-life balance could help improve organizational culture and employee overall performance. In despite, may contribute a significant social change by preparing employees for success while simultaneously positioning individuals to attain the optimum balance between work and life responsibilities. Essentially, to keep pace with workplace trends, human resource professionals seek options to positively impact the bottom line of their companies, improve employee morale and retain employees with valuable company knowledge. Finally, the results perspective that human resource professionals can assist their companies to capitalize on these factors by using work-life balance initiatives to gain a competitive advantage in the effectiveness of work-life practices.

KEYWORDS : *Workplace, Personal health, Stress, Strategic choices, Attitudes, Organization, Work-life balance*

INTRODUCTION

Generally, well-being and work-life balance for employees can improve their overall health, and also help to improve their morale, motivation and general job satisfaction, leading to improved performance in the workplace. This study illustrates

how a healthy work-life balance requires managing our professional and personal life in sustainable ways that keep energy flowing, minds and bodies healthy and whole selves happy. Meaning giving due attention to all of the things that enrich and satisfy peoples, including work and career, health and fitness, family



and relationships, spirituality, community service, hobbies and passions, intellectual stimulation, rest and recreation. Uncertainty an employee spends a majority of their time working and feels like they are neglecting the other areas of their lives, they often experience frustration, burnout, and unhappiness. Meaning when organizations promote good work-life balance, employees are less likely to experience stress and more likely to have a more positive outlook on their professional and personal lives overall. Work-life balance as a crucial factor while job hunting, a good work-life balance can fuel employees with better health, greater loyalty, commitment, engagement and increased productivity. Hence, focusing on how to improve work-life balance for employees is a vital part of an organization's success. Today's, if you're an employer, need to understand that employee is stressed at the moment, even if the workplace isn't the cause, but remember that the whole world is very stressful at the moment. This study illustrated about humanity filled with conflicting responsibilities and commitments at work-life balance has become a predominant issue in the workplace. Job satisfaction is an aspect most of labor that measure of utility at work (Bockerman & Ilmakunnas, 2012). According to (Jamal & Muhammad, 2012) job satisfaction is an individual's feelings or related views about work and its associated aspects. The key point of an employee practices in organizations is to improve employee productivity and performance to sustain the organization's competitive advantage (Ning, 2012). Hence, the ultimate impact will be on an organization's productivity if workers are not satisfied with their jobs, management, working conditions, or work culture, perhaps they may not provide their customers with quality service (Jamal and Muhammad (2012).

Basically, work-life balance has become an important issue for both either employees and organizations (Madipelli, Veluri-Sarma, & Chinnappaiah, 2013). This also connected to a business environment that demanding with deadlines and tight schedules (Kumar & Chakraborty, 2013). The purpose of work-life balance practice is to help reduce work-life conflict and increase positive employee appraisals of the organization (Lazar, Osoian, & Ratiu, 2010). Whereby the reals of work-life balance can improve organizational structural, cultural, and relational support for work and family (Kossek, Lewis, & Hammer, 2010). The ranging from economic to environmental emerged, requiring employers to further mainstream work-life initiatives to respond to new societal changes, including from health to technology

(Kossek et al., 2010). Significantly employees are experiencing increasing of the performance pressures, and the hours of employees spent at the workplace (Burke (2010). Furthermore, there is an ongoing struggle between employees and employers concerning work-life balance as they don't understand the reality of work-life balance is reciprocally beneficial (Kumar & Chakraborty, 2013). Essentially, employers are not responsible for providing work balance for their employees, but they can assist the employees in seeking and maintaining their work balance. Therefore, the decisions, policies, values, and expectations in workplace support employees in their work-life balance choices.

However, looking into an organizational perspective, work-life balance may be a part of good performance, and from an employee perspective work-life balance may be a positive factor in deciding to work for or continue in the same particular organization (Mayerhofer et al., 2011). The success of an organization's employee commitment is an important factor (Shahid & Azhar, 2013). The importance drivers of employee commitment are employers' care, concern, fairness, and fulfillment (Shahid & Azhar, 2013). Specifically, the responsibility of every employer is to provide a pleasant work environment and conditions for employees devoid of risks, hazards, and diseases (Howard-Quartey & Buenar-Puplampu, 2012). Therefore, it's related to facilitate to reduce employee absenteeism, stress, turnover rates, increase employee retention and commitment to the organization (Kumar & Chakraborty, 2013; Wang & Walumbwa, 2007). This work-life research also focused on understanding the contributions of work-life balance on employee motivation, job satisfaction, turnover, retention, absenteeism, and productivity an important understanding of the effectiveness of the work-life balance.

Essentially, developing a harmonious work-life balance or work-life integration is critical, though, to improve not only physical, emotional and mental well-being, but it's also important for career. The reality of work-life balance is the state of equilibrium where a person equally prioritizes the demands of one's career and the demands of one's personal life. The consistency of work-life balance has numerous positive effects, including less stress, a lower risk of burnout and a greater sense of well-being. This not only benefits employees, but employers, too. Specifically, those committed to providing environments that support work-life balance for their employees can save on costs, experience fewer cases of absenteeism, and



enjoy a more loyal and productive workforce. Therefore, employers that offer options as telecommuting or flexible work schedules can help employees have a better work-life balance. When creating a schedule that works for employees, think about the best way to achieve balance at work and in personal life. According to Chancey said that work-life balance is less about dividing the hours in people's day evenly between work and personal life and, instead, is more about having the flexibility to get things done in professional life while still having time and energy to enjoy personal life.

DESIGNING OF PLANNING STRATEGIC IN WORK-LIFE BALANCE

Life is a balancing means various factors that safe to say that almost everyone is seeking work-life balance. The meaning of work-life balance has chameleon characteristics that are aiming for different things to different groups, and often depends on the context of the conversation and individual viewpoint. While some number of organizations now are understanding the importance of sustaining a wholesome workforce with acceptable work-life balance. However, it's turning into a frightening process for employers to advertise a wholesome lifestyle, care for the bodily and psychological well-being, of the employees whereas doing what it must do, that's will be working the business. The following are working terms used in work-life balance for continuing to evolve.

1. Flexible working hours

The phrase work-life, giving a broader work-life connotation or labelling referring to specific areas of support employees to have versatile working hours, particularly working from home that encourage work-life balance strategies for employees. Utmost flexible work is required or not specifying work timings in any respect until the time the work will get carried out. This permits employees to cater to their family wants without compromising on work and digital engagement concepts may assist them to get engaged with work and home life balance.

2. Educating Employees

Organizations determine a measurement for specific issues that employees must realize a greater work-life balance. Hence, organizations can play an important function by educating them by way of seminars, webinars, coaching applications, and even e-studying. It may develop employee with easy on regular basis structure that they'll use to cut back stress and obtain a higher work-life balance.

3. Focus on high quality

Employees have to encourage to work effectively moderately than by counting the variety of hours. Essentially working long hours doesn't result in greater productivity in making work-life balance strategies for employees. On the opposite, an effect on employee morale adversely may cut back the effectiveness and improve stress. Focusing on effectively not solely improves productivity, but additionally ensures the employees that they're trusted to finish their work without fixed supervision and micromanagement their work relationship. It not solely improves their high quality of life, but will increase their productivity and profitability of the group. When a corporation focuses on employee wants, it enhances the employer model, thus, attracting and retaining the most effective expertise. While people must take the duty to find a work-life balance, their organizations can play an enormous functional in attaining work-life balance strategies for employees.

4. Leave door open

Mostly all employees are different and will deal with their work-life balance in different ways, therefore it's important that employees feel they can communicate their needs to employer. Make an arrangement to talk with employees, to discuss what can be done to help ease or change the situation and bring their work-life balance to a better place. Through this implementation work-life balance strategies of employees' physical and mental well-being, as well as overall health can improve. Moreover, it can boost their performance at work, by helping people relax, re-energise and improve staff morale. Whilst creating a better work-life balance may not always be easy, it's important to do individual part as a business. Without support, employees can become stressed and unproductive, which can lead to a negative impact on the overall performance in an organization.

5. Connecting with families

Essentially employee's family commitment is a piece of the work-life balance that help to increase employee retention and also boost the company's reputation as a respected employer. The scope of benefits that offer employees space to address their personal and family commitments, while at the same time compromising their work responsibilities. The extent to which an organization's culture initiates acknowledges, respects the family responsibilities, encourages management and employees to work together to meet their personal and work needs in reducing employee's stress. Initially employed, who



fail to make time for self-care, eventually damages their output and productivity.

6. Encourage creativity

Psychological health, encouraging necessary physical health with work-life balance strategies for employees. Allowing employees to take up inventive tasks or giving them alternatives to current new concepts, promotes innovation within the group, and makes the employees really feel that their concepts are valued. It provides them a break from their daily transactional work and will increase employee satisfaction. Employees able to achieve work-life balance by motivating, gratifying and stay happy employees, whose needs work balancing are achieved that lead to develop stay with their employer and more productive.

DESIGNING GOAL AND TARGET METHOD

A healthier work-life balance would allow people the opportunity of spending time with family and friends, giving them change of engaging in hobbies and essentially enjoy life more. This boost in employee happiness is directly reflected in the success of the business, with both employees and employers gaining massive benefits including below list:

- i. Helping to avoid employee burnout and overworked, giving them more energy and focus when they are at work.
- ii. Improving employee health by reducing the stress and pressure they feel from having to juggle work and home-life and giving them more time to relax and look after themselves.
- iii. A reduction in employee absenteeism is often seen as employees are more likely to go to work if they feel a healthy balance in their life and are less likely to take time off sick.
- iv. Improving staff retention by ensuring employees are happier in their working environment. This, in turn, reduces the time spent training new staff, increases the amount of in-house expertise and boosts loyalty from staff.
- v. Increasing productivity of workers, as productivity is often increased when employees enjoy their role and have less stress in their life.
- vi. Better relationships between employees and management, as employees feel appreciated and believe management is putting the needs

of the employees ahead of the needs of the business.

- vii. Employees are less stressed, less pre-occupied and more able to focus on work, leaving home issues at home and work issues at work.
- viii. Organization becomes more attractive to work for as it becomes known as the organization that cares for its employees, which is particularly useful when advertising new roles in the company.

IMPLEMENTATION OF THE EMPLOYEE'S WORK LIFE BALANCE METHOD

1. Design of Hypothesis Method

- i. Increase awareness of leaders, managers and supervisors
- ii. Build a supportive work culture
- iii. Setting employee expectations
- iv. Flexible working hours
- v. Telecommuting
- vi. Lead by example
- vii. Encourage physical activities
- viii. Encourage creativity
- ix. Connecting with families
- x. Identifying burnout
- xi. Automating processes
- xii. Focus on quality and not quantity
- xiii. Different ways organizations manage flexible time
- xiv. Difficulties with implementing flexible time in teams and work groups
- xv. The absence of communication and education about these policies
- xvi. The possible stigma or career penalties associated with using flexible time.

Analyse and interpret data or information

Despite the fact that the debate around work life balance is not new, it is becoming important as more people in the workforce are struggling with it. The entire factors contribute to an over work stress and leave little or no time for family, friends, physical activities or hobbies, that's causing work life imbalance.

- i. Most organizations usually have fixed policies that may or may not suit for individuals, perhaps it gives little or no control over their lives and leaves them struggling on a day to day basis.
- ii. The pandemic work from home situation has resulted even more stress on the



- employees, adding much more imbalance to the work life situation.
- iii. Technology has made employees accessible to work, around the clock and seven days a week.
 - iv. Fear of losing their job or losing a promotion further incentive working for longer hours.
 - v. Addiction to gadgets does not allow people to unplug and switch off. A real challenge that makes employee constantly glued to their gadgets and check their messages and e-mails, constantly, even beyond working hours.
 - vi. Rising use of social media not only wastes a lot of time, but also causes dissatisfaction as people increasingly seek perfection, looking at the lives of other people.
 - vii. People are getting more ambitious and competitive, therefore employee not only looking at materialistic incentives, but also seeking higher acknowledgement and appreciation at workplace and want to climb the corporate ladder at a faster pace.
 - viii. Due to the increasing work demands, people let go of some important components of a healthy life like eating healthy, sleeping well and exercising with added work stress, reduces the resistance of the body and leads to mental clutter.

KEY STRATEGIES IN ACHIEVING A WORK-LIFE BALANCE

There are many challenges to obtaining a healthy work-life balance yet, a simple action to consider moving closer to the balance desire. The outlined in below strategies are designed to help people restore the balance and harmony in work and personal lives.

1. Determine Priorities

Defining and prioritizing what's most important to the employee at this present moment will make all the difference when looking at work-life balance as one of the priorities. In-fact it's challenging to do everything on to-do list with limited time and energy, so need to determine what is priorities are focused and reflected on the wheel to improvements or changes need to make to bring about work life balance.

2. Set Specific Goals

Take the list of priorities and turn into concrete and measurable goals, this may ensure that

employee no longer lets the work-life balance and other responsibilities get in the way that need to be driven by goals. Life is an evaluation questionnaire grading the key areas, and reflecting on scores into a doable goal-setting format.

3. Structure Week

Achieving work-life balance means we need to begin focusing on what is important to us already have it all, but probably not all at once. *What should I aim for?* Use this question when planning and create to do list which undoubtedly will be very work orientated. In an ideal person with great work-life balance would include the following in their day also week schedule and this list will be easier for on tract self-created deadlines:

- i. An 8 hours maximum working day and 8 hours of sleep at night.
- ii. Time for breakfast, lunch, a balanced healthy diet and travelling to work in the morning.
- iii. No work on weekends.
- iv. Quality time with their partner, children and for self.
- v. An hour of exercise every day.
- vi. Social activities at least twice a week.
- vii. Regular contact with family and friends.
- viii. Time in nature.

4. Establish Boundaries

Set fair and realistic limits on what will and will not do both at work and at home. Clearly communicate these boundaries to supervisor, co-workers, partner and family. Consistently maintain the boundaries according to availability workout.

5. Leave work at work and respect private time

Work is work, home is home, there should be no place for work at home (unless, of course, the nature of the job work from home) perhaps limit bringing work home. Develop a mental on-off switch between work and home helps to establish a transitional activity between the two realms.

6. Get control of thoughts

Thoughts can be best friends and worst enemies in other words, thoughts in people's heads constantly popping into minds can be either positive or negative. Thoughts drive emotions, which drive behaviours, and ultimately determine the actions thus, a positive emotion can decrease stress hormones and build emotional strength.

7. Take Personal Responsibility

Proceed with personal responsibility for work-life balance includes speaking up about work expectations and demands are too much. Be more



effective in responding to change in a way that moves forward for every decision making.

8. Aim for satisfaction

In realism people are deeply dissatisfied personally and professionally. Life's satisfaction has been defined as an individual's perception of the quality of his or her life as a whole or within specific life domains so it is clear, with experience satisfaction to work on each key area of life to bring about improvement. Concentrating on each has gone to bring satisfaction even before managed to reach the right balance and every bit of improvement will add to satisfaction. An important part of personal development is the concept of continuous improvement and are truly committed to a philosophy of continuous improvement, because people are always in search of the next goal.

9. Total life planning

Total life planning is a new advanced innovative approach in developing work-life benefits and helps employees examine important aspects of their professional and personal lives and understand how they relate. Their goal is to encourage how to look at their lives as a whole assess relationships, emotional, physical well-being, careers, spirituality, and their personal financial situation. Ultimately, employees can assess their available choices to improve balance in their lives and develop an individualized life plan. The successful technical set a goal-oriented environment with a meaningful and transformational component for each individual (Traynor, J. B. (1999). The concept of total life planning represents a paradigm shift in society, thus, one of the major benefits is renewed employee energy, enthusiasm for work, and increased productivity. Total life planning obtainable benefits such as health, life, and disability insurance, or on a standalone basis.

WORK-LIFE BALANCE MEASUREMENT

1. Key Communication

In this study also illustrated the work-life balancing is about communication, although an organization offers a rich menu of work-life benefits, the desired effect yielding positive business results are unlikely to occur if employees do not understand the working strategy as stated in below critical questions:

- i. does the organization culture truly support work-life benefits;
- ii. does the management philosophy, starting with senior management, sincerely endorse work-life benefits;

- iii. managers and supervisors to understand the impact work-life balance has on their workforce;
- iv. are employees aware of and do they understand the organization's work-life balancing?

Eventually, employees will see how these benefits offer the ways to manage work-family conflict if an organization already offers work-life benefits, the next step will be to repackage and re-communicate. In addition, developing a human resource strategy that is clearly integrated with the organization's mission will demonstrate how committed the organization is to employee needs. The following are suggestions to promote work-life balance:

- Review the human resources strategy to see if it supports the employee's mission.
- Through focus groups, find out what employees feel about work-life balance.
- Align work-life initiatives with Human Resources strategy (e.g., employee of choice).
- Create a work-life award program using non-cash incentives aligned employee's objectives

The illustration of work-life balance denotes to an individual's ability to maintain a healthy balance between their work roles, their personal responsibilities, and family life. Meaning by accepting the facts that live life to full content will require some sort of balancing between personal and work life. Depending how employee taken into concentration either a positive way than the work-life balance can be achieved to a greater extent.

2. Constructing Work-Life Strategy

This study also explains the importance of responsibility for employees' balance. The success of any work-life initiative starts with each player on the team playing his/her part. Executives and leaders need to articulate a vision for a healthy and resilient work force, a productive, successful organization, and satisfied employees. Ultimately, managers need to model healthy habits and balance behaviours, such as good self-management (time, stress, and career management, healthy lifestyle choices, conflict resolution, and problem solving). In this case employees also need to take responsibility for their own choices (diet, exercise, sleep, stress reactions, relationships, career development, and personal and professional development). The following step process can be used for assessing the current situation and appropriate strategy in work-life balancing development:



- i. Assess current position review existing programs, policies and pilots if appropriate benchmark against other organizations. A good indicator of where to focus energies is finding the discrepancy between what employees across the organization think is available.
- ii. Articulate employee's plan, set goals, document objectives, and complete an action plan. Probably organization took decades to develop the behaviours and attitudes that are contributing to employee imbalance, employees have likely developed their unhealthy habits over the years. Build on quick wins to figure the momentum before tackles the big issues like changing organizational culture. Be realistic in achieving work-life balance is hard, not impossible, but it requires effort, collaboration, and cooperation.
- iii. Execute the plan, establish monitoring and reporting procedures and routines, ensure accountability, provide adequate resources, and communicate continuously. Measure everything so employee know what to celebrate, modify, or stop doing some things.

3. The Tool Box

The use of work-life continuum as a tool for developing, implementing, and monitoring employee organization's plans. The value of the tool is the ability to identify what elements employee have at each stage and to leverage those who are ahead to pull the rest along. To achieve that goal employee will need to position initiatives as a competitive imperative for organizational success and as a strategic business issue, so will link work-life balance initiatives to enrolment and retention strategies, business development goals, and organizational development initiatives. Also, it explores the full life cycle and includes all personal responsibilities, such as education and career development and caring for aging relatives or ill, injured, or disabled family members. The employee may establish a multidisciplinary task force to monitor and expand existing policies and to evaluate progress to benchmark employee progress and learn from other organizations' experience. In addition, may develop metrics and measurements to hold individuals and managers accountable for creating supportive work environments, such as including work-life balance and wellness in measurement tools. The business case for work-life balance practices relies on their ability to enhance recruitment, retention, and reduce work-life

balance conflict among employees. Thus, its inbuilt sense that offering work-life balance practices would attract individuals to an organization, and that using these practices would result in improved employee attitudes and behaviors within the organization. However, two things become clear after reviewing this study, illustrated with work-life balance practices and organizational performance.

EVALUATION OF WORK-LIFE BALANCE IN ORGANIZATION

Essentially the main key addressing the concern of losing control is to educate and skill managers to manage performance and flexibility within their work teams. Specific identifies actions that organizations can take to address this issue is that the managerial skills that create organizational effectiveness are the same skills critical to managing a diverse and flexible workforce as skills elaborate include:

- i. The ability to define and agree the work to be done and the standards that need to be achieved.
- ii. Implementing systems and processes that allow the employee to work effectively and productively whether that is from the corporate office or another location.
- iii. Communicating explicitly about standards for quality and on-time delivery.
- iv. Creating an environment where employees communicate their concerns and creative ideas.
- v. Evaluating and monitoring progress, and being able to modify systems where needed.
- vi. Providing regular feedback and coaching on performance.
- vii. Promotes work-life flexibility options for all staff by using examples and case studies as part of in-house promotional materials to show the success stories at all levels of the organizations.
- viii. Demonstrate a willingness to explore ways in which senior roles can be re-designed to accommodate greater flexibility in where and when work is done.
- ix. Concentration on outcomes rather than time spent in the office. Shift rational thoughtful away from thinking that presence equals professionalism and performance.
- x. Establish a formal process for requesting a flexible work arrangement that is monitored by the Human Resource or Diversity



- Manager. Emphasize that all staff has an equal opportunity to have their needs reviewed fairly and objectively.
- xi. Apart from their regular performance discussions, ask the question what can I do to support on achieving work-life balance, what barriers need to be removed or challenged? Ensure that they take action on the requests.
 - xii. Help executives assess low value work and review workloads and work practices so that that reduces the amount of time they have to spend on non-essential work, or work which can be delegated to others.
 - xiii. Embrace questions about work-life issues and access to senior roles as part of the regular employee consultation/survey process. Take action on the findings.
- iii. Both parties agree what success will look like and how it will be measured.
 - iv. How communications between the employee/manager/client/customer and colleagues will be managed.
 - v. Dates and times are agreed when the manager and employee will meet to discuss the effectiveness of the flexible work arrangement.

IMPLICATION AND DEVELOPMENT STRATEGY IN ORGANIZATION

1. Organization to facilitate education programs that up-skill to manage work-life flexibility issues within their teams include below information:

- i. The business benefits of work/life options and flexible working.
- ii. Managing the performance and output of employees who work flexibly. This should also include management of poor performance (sometimes this is blamed on the flexible work arrangement and avoids dealing with the real issues of performance.)
- iii. Building trust between the employee and manager.
- iv. Establishing clear communication channels between the manager, employee and team members so as to avoid crisis situations and resentment between team members. This kind of training needs to be practical and include case studies and skill development exercise.

2. Provide one-on-one coaching for managers as they respond to requests for flexible working done by either a senior manager or a member of the Human Resource team. They can work with the manager to ensure that below scope linearity:

- i. Clear performance indicators are discussed and established as part of the flexible work arrangement.
- ii. The days, times, location and work hours of any arrangement are clearly established

3. Defined clear procedures for flexible work arrangements. The procedures should illustrate which options are available, which may access them and the criteria that will be used to assess an employee's application to work-life balance flexibility. This method will provide a level of playing field for all employees, which give guidance to managers who may be reluctant to relinquish control by allowing employees to work flexibly.

4. Communicate success experience stories within organizations is best practice that suggest sharing hence, helps managers to recognize that change is possible. Whereby, bottom line the benefits in an organization that's being gained from trusting employees and being proactive in the way they manage work-life balance flexibility issues within their teams.

IMPROVEMENT THROUGH THERAPY IN WORK-LIFE BALANCE

This study enlightens recognize a separation between a job and living a fulfilling life is essential to improving one's wellbeing both physically and mentally. Basically, Work-life balance is not something everyone can accomplish and often requires something significant to alter their mindset and perception of what is important. Psychologists are able to work with people to recognize how it is important to live a life that includes time for family, friends, work, exercise, leisure, and adequate sleep. Mostly, those who lack of work-life balance often brings work home, struggle with insomnia, cancel plans because of their other obligations, and tend to have a short temper. Strengthening the majority of energy to work can also cause people to suffer from severe tension headaches, upset stomachs, and an increase of caffeine and alcohol use. Subsequently, articulate on employers that realise the work-life imbalance is not in their commercial interest, as it causes absenteeism, poor punctuality, reduced creativity and commitment, and low performance and productivity. Specifically, some of



employer design the work schedules that cater to their employees' actual, varying needs. Thus, management knows that staff who take 'productivity pauses' return to the task at hand with renewed vigour and focus. They obtained a good example by going home at a sensible hour to spend time with their family and friends. Despite this challenging socio-economic context, therapy is able to help manage the actions and reactions, regulate self-efficiency, self-integrity and feel that self in control of life and the abilities to 'steer your own ship'. The consequence of Therapy for a better work-life balance can be learned depending how the understanding takes place in balancing work-life improvement:

- i. 'Stall constructive' when asked to do something extra
- ii. Work 'smart not long', by means of tight prioritising.
- iii. Become more willing to delegate.
- iv. Differentiate 'good enough' from 'fabulous'.
- v. End the workday without completing every work task and yet feeling satisfied
- vi. Includes downtime the schedule.
- vii. Make a little time for the things that ignite the joy.
- viii. Think about other interests, outside of work, that will need to have when get older and maybe retired.
- ix. Set manageable goals each day and create a "To Do" list to stay on task.
- x. Be efficient with the time at work and don't procrastinate or get preoccupied with spending too much time doing busy work.
- xi. Ask for flexibility in scheduling. It allows for increased productivity.
- xii. Take small breaks throughout the day to clear the mind and reduce stress.
- xiii. Tune in, studies show that listening to music at work fosters concentration, reduces stress and anxiety, and stimulates creativity.
- xiv. Communicate effectively and be honest when someone can help or when a project or task becomes overwhelming.
- xv. Give self a break, no one is perfect and all people can do is their best.
- xvi. Unplug, the same technology that makes it so easy for workers to do their jobs flexibly can also cause burnout when used all of the time.
- xvii. Divide responsibilities at home and evenly distribute tasks to avoid getting behind.
- xviii. Learn to say "NO" when feeling stressed or exhausted.

- xix. Make time for friends and family to create a strong support system when life spirals out of control.
- xx. Stay active and treat the body right, do regular exercise, adequate sleep, and a healthy diet boosts the immune system and are proven to reduce stress, symptoms of depression, and anxiety.

CONCLUSION

Overall, this study shows that work-life balance practice is most effective when they enhance employees' autonomy and increase their capacity to perform well at work and in a family situation. The convergence between work and non-work aspects a win-win situation for employees and employers alike. The capability to achieve satisfying experiences in all life domains enhances the quality of personal relationships and a range of organizational outcomes. The readiness of the work-life balance practices, provided in the context of organizational support that can reduce work-life conflict and increase positive appraisals of one's organization. It is also associated with employee attitudes such as increased job satisfaction and enhanced control over their work schedule. In fact, a significant improvement notice in an employee's work-life balance mainly relates to morale, reduce absenteeism, and retain organizational knowledge, especially during in difficult economic times. Globally, current situation marketplace, as organizational key objective is to reduce costs, which falls to the human resource professional to understand the critical issues of work-life balance. It's illustrated in this study that employees will feel a greater sense of control and ownership over their own lives, they tend to have better relationships with management and just let work issues at work and home issues at home. In the circumstance balanced out employees tend to feel more motivated and less stressed out at work, whereby increases organizational productivity and reduces the number of conflicts among co-workers and management. Today's organization take opportunity in gaining the reputation to encourage work-life balance to become more attractive among employees and will draw a valuable pool of candidates for new job openings. The organization will convey to enjoy higher employee retention rates, which results in less time-consuming training, more loyalty, and a higher degree of in-house expertise. Nevertheless, this study also determines employees who have a positive work-life balance do a better job at work, so promoting this balancing as beneficial to individuals and the organization. This will



be a practical guide for employers who want to promote a healthy work-life balance for their teams.

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A STUDY ON CONSUMER'S PERCEPTION TOWARDS IODIZED CRYSTAL SALT IN THOOTHUKUDI DISTRICT

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ABSTRACT

The main aim of this research is to study the perception of the customers towards iodized crystal salt and also discriminate this perception gender wise with help of convenient sampling method 150 respondents were selected and data were collected through structured questionnaire. The result shows that most of the customers were perceived that iodized crystal salt is better option than refined iodine freeflow salt and most of the customers were satisfied with their iodized crystal salt. They conclude that iodized crystal salt is more expensive than refined iodine freeflow salt, its take more time for processing the products and they are facing problems while making iodized crystal salt. facing problem like climate changing.

KEYWORDS: *Iodine deficiency disorder, Iodized salt, Household coverage, India, Customer buying behaviour.*

INTRODUCTION

Consumer perception refers to the process by which a customer selects, organizes, and interprets information/stimuli inputs to create a meaningful picture of the brand or the product. It is a three stage process that translates raw stimuli into meaningful information. Each individual interprets the meaning of stimulus in a manner consistent with his/her own unique basis, needs and expectations. Three stages of perception are exposure attention and interpretation. In similar terms, it is how a customer sees a particular brand with whatever he/she has been able to understand by watching the product, its promotions, feedback etc., it is the image that of particular brand in the mind of the customer.

STATEMENT OF THE PROBLEM

- Factors influencing the customer to purchase a product in iodised crystal salt in Thoothukudi district such as availability of all products, choice of more brands, better product quality are some of the aspects studied in the present study
- The response of customer with regard to the availability and quality of products and services offered at iodised crystal salt.
- Nowadays no one is able to manage life without iodised crystal salt as it becomes an essential part of our life.

SCOPE OF THE STUDY

The preference of the consumer is differ from each other. it will be helpful for the producers of



crystal salt products by understanding the real preference of consumer. If the producers or retailer know about the consumer preference, then, It will be aid for them to formulate and implement appropriate marketing strategy to market their product based on consumer preference.

With that, the preferences, can innovate their products, quality price and many other inventions in iodised crystal salt products by the help of this study

OBJECTIVES OF THE STUDY

- To study the consumer preference towards iodised crystal slow salt.
- To study the factors which influencing the customers to purchase a product in iodised crystal salt in Thoothukudi district.
- To identify the problems faced by costumers in iodised crystal salt in Thoothukudi district.

RESEARCH METHODOLOGY

The empirical research design is used in this study. It is record of one's direct observation or experience which can be analysed qualitatively. It will answer the questions of how or when or why the characteristics occurred. The data was collected from 150 respondents from Coimbatore city through questionnaire by adopting convenience Sampling Technique. Percentage analysis, Ranking analysis, Likert scale analysis were used to analyses the data.

LIMITATIONS OF THE STUDY

- Due to limitation of time only few people were selected for the study. So the sample of consumers was not enough to generalize the findings of the study.
- It covers only the Thoothukudi city.
- The respondents were unable or unwilling to give a complete and accurate response to certain question.

REVIEW OF LITERATURE

Dennil. Arli and Harik. Lasmono (2010)¹, "consumers perception of corporate social responsibility in a developing country". The paper examined consumer perception in the developing country of Indonesia. The data was collected from 443 students whose age is between 16-23. They conclude that when consumers have to buy simiar product with the same price and quality CSR could be the determining factor. They would buy from the firm that

has a socially responsible reputation.

Abhishek Dadhich, Prof. (Dr.) Kavaldeep Dixit (2017)², "Consumer Perception and brand loyalty towards over the counter brand medicines of major pharmaceuticals companies with special reference to Rajasthan". It also aims to study the impact of marketing mix factors on consumer perception and OTC brand loyalty. The research study evaluates the major influencing factor and consumer preference towards the OTC brand promoted by the major pharmaceutical companies. They concluded that revealed that place, price and promotion are major key influencing factors for consumer OTC buying behavior which should be ponder while formulating OTC medicine marketing strategy.

DATA ANALYSIS AND INTERPRETATION

The collected data were grouped, edited, tabulated in a mater table and analysed using the following statistical tools

1. Percentage Analysis
2. Rank Analysis
3. likert scale Analysis

SIMPLE PERCENTAGE ANALYSIS

A simple percentage analysis is carried out for most of all questions given in questionnaire. This analysis describes the classification of respondents falling in each category.

The percentage analysis is used mainly for standardization and comparisons are in support with the analysis.



FORMULA

$$\text{Percentage Analysis} = \frac{\text{No. of Respondents}}{\text{Total No. of Respondents}} * 100$$

**TABLE NO .1
TABLE SHOWING AGE OF THE RESPONDENTS**

S.NO	Categories	No. of Respondents	Percentage (%)
1	18 to 24	23	20
2	24 to 31	48	40
3	32 to 40	40	33
4	Above 40	9	7
	TOTAL	120	100

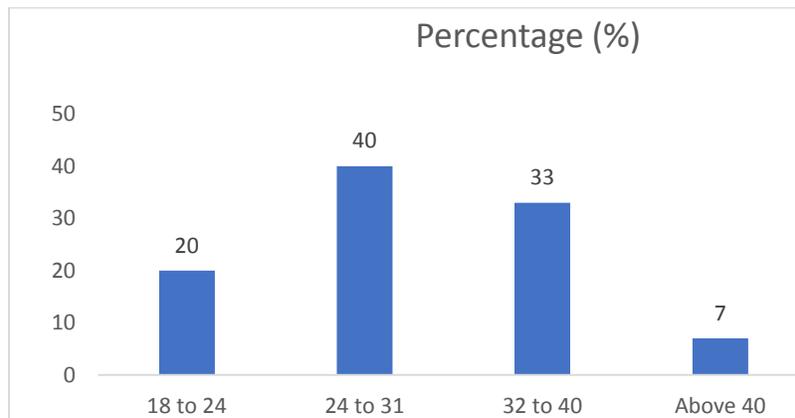
INTERPRETATION

The table reveals that, 20% of respondents are between 18 to 24 years, 40% of respondents are between 24 to 31 years, 33% of respondents are between 32 to 40 years, 7% of respondents are Above

40 years.

INFERENCE

Majority (40%) of the respondents are in the age group of 24 to 31 years.



RANK ANALYSIS

A ranking is a relationship between a set of items such that, for any two items, the first is either 'ranked higher than', 'ranked lower than' or ranked equal to the second. Analysis of data obtained by

ranking commonly requires non-parametric statistics. In this study, ranking analysis applied for response collected which are ranked from (10 to 1) towards various source of information by the respondents and given various factors which are in iodized crystal salt .

**TABLE 4.2.2****TABLE SHOWING RANKING FOR PROBLEMS OF THE IODINE CRYSTAL SALT**

S. No	Particulars	1	2	3	4	5	6	TOTAL	RANK
1	Quality	15(6)	36(5)	36(4)	16(3)	4(2)	13(1)	483	1
2	Price	29(6)	6(5)	4(4)	26(3)	36(2)	19(1)	389	5
3	Influence by other	30(6)	18(5)	12(4)	11(3)	19(2)	30(1)	419	3
4	Advertising	29(6)	21(5)	12(4)	17(3)	15(2)	26(1)	416	4
5	Packaging	11(6)	10(5)	15(4)	30(3)	31(2)	22(1)	350	6
6	Convenience	10(6)	29(5)	36(4)	17(3)	18(2)	10(1)	446	2

*Source: Primary data***INTERPRETATION**

From the table, it is understood that quantity is ranked 1, Price is ranked 5, Influence by other is ranked 3, Advertising is ranked 4, Packaging is ranked 6, Convenience is ranked 2.

INFERENCE

The quantity of food have been ranked 1st by the customers for the problems during iodine crystal salt.

FORMULA

$$\text{Likert scale} = \frac{\sum fx}{\text{Total number of respondents}}$$

While,

f = Number of respondents

x = Likert scale value $\sum fx$ = Total score**Mid value**

Mid value indicates the middle most value of likert scale.

LIKERT SCALE ANALYSES

A likert scale is a type of rating scale used to measure attitude or opinions. With this respondents are asked to rate items on a level of agreement. Likert scale is the common ratings format for surveys. Five to seven items are usually used in the scale. To analyse the data it is usually coded as follows:

- 5 = Highly satisfied
- 4 = Satisfied
- 3 = Neutral
- 2 = Dissatisfied
- 1 = highly Dissatisfied

TABLE NO.3**TABLE SHOWING PERFORMANCE TOWARDS LEVEL OF IODINE CRYSTAL SALT**

S. No	Factors					TOTAL	Likert Scale		
	Likert Scale value (x)		5	4	3			2	1
1	Product pricing		f	54	47	13	5	1	120
			fx	270	188	39	10	1	508
2	Product Packing Product Quality		f	49	48	19	2	2	120
			fx	245	192	57	4	2	500
3	Brand Values and Ethics		f	39	28	37	7	9	120
			fx	195	112	111	14	9	441
4	Online and Offline Presence		f	35	34	22	20	9	120
			fx	175	136	66	40	9	426
5	Advertisement		f	50	32	19	11	8	120
			fx	250	128	57	22	8	465

Source: Primary data



INTERPRETATION

Likert scale value 3.55 is greater than the mid value (4), thus the respondents agreeing with the service of the iodine crystal salt would be of very good quality

INFERENCE

The respondents agreeing with the service of the online iodine crystal salt would be of very good quality

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS FROM PERCENTAGE ANALYSIS

- 40% of the respondents are in the age group of 24 to 31 years.
- 55% of the respondents are female.
- 40% of the respondents are 250001 -500000
- 47% of the respondents are Employee.
- 85% of the respondents buy iodine salt.
- 58% of the respondents use non – iodine salt in their houses.
- 72% of the respondents differentiation price iodine salt.
- 50% of the respondents are Paper bags.
- 48% of the respondents are of respondents are between 20 to 40.
- 80% of the respondents use of iodine crystal salt after seeing the advertisements.
- 62% of the respondents are monthly purchase of iodine crystal salt .
- 31% of the first preference of the respondents are features.
- 36% of the factors considered for choosing salt is brand

FINDINGS FROM RANK ANALYSIS

- No fear of adulteration have been ranked 1st by the customers for the iodized crystal salt.
- The quantity of food have been ranked 1st by the customers for the problems during iodine crystal salt.

FINDINGS FROM LIKERT SCALE ANALYSIS

- The respondents agreeing with the service of the iodine crystal salt would be of very good quality
- The respondents are not satisfied with the

factors.

SUGGESTION

- The respondents suggested to improve the quality of food and packing.
- Prices like discount to loyal customers, Reward points, etc. can be provided to increase the customer products .
- Advertisement through various channels can be made to make the customer to recall the iodine crystal salt.

CONCLUSION

- The Study of Consumer Preference Towards Iodised Crystal Salt has Proved that many consumers prefers Healthier salts which contain comparable amount of sodium by weight.This iodised salt is preferred by many consumers because of its better product Pricing,Quality and also Advertisements.
- The Study of Factors Influencing the Purchasing Power of ICS in THOOTHUKUDI DISTRICT Majorly Includes its Level of Availability, its Supply,Credit terms and also by Recommendation of others. Formal education, higher monthly income, and not exposing salt to sunlight were found to associate with the presence of adequately iodized salt at home.
- The Problems Faced by consumers in iodised crystal salt in Thoothukudi District Includes Low packing Quality and also the Iodine content which is critical to an Infants Brain. The evidence here shows that there is a need to increase the supply of adequately iodized salt to meet the goal for monitoring progress towards sustainable elimination of IDD.

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IDENTIFYING THE CONNECT BETWEEN STUDENTS' SCIENCE ANXIETY LEVELS AND THEIR ACHIEVEMENT IN SCIENCE

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Article DOI: <https://doi.org/10.36713/epra5912>

ABSTRACT

This study aims to explore the effect of an affective variable 'science anxiety' on students' achievement in science subject. By affective we refer to the learners' affect such as emotions, feelings, moods and attitudes involved in teaching-learning process. The chosen sample comprised of 1134 students (532 boys and 602 girls) of class X from 34 schools of Aizawl district of Mizoram. An adapted version of 'Science Anxiety Questionnaire' was used with some indigenous modifications to assess the level of science anxiety amongst the sample. The science anxiety scores of students were correlated with their science achievement scores obtained in class X board examination. Past researches have recognized 'science anxiety' as a negative affect responsible for student's underperformance in science. However, in the present finding the correlation coefficient value was found to be 0.1 indicating a very low but statistically significant positive relationship. This suggested that a minimum threshold level of science anxiety positively becomes the achievement in science. Anxiety levels were found to differ significantly between high and low science achievers, interestingly the high achievers (upper 27%) were found to be more science anxious suggesting that the very low positive relationship between the science anxiety and science achievement of students was contributed more from the high achievers. The findings revealed a significant difference between science anxiety levels of boys and girls, the latter being more science anxious. The chi-square analysis also supported that science anxiety is not independent of gender.

KEYWORDS: *Achievement in Science, Affect and Science, Science Anxiety, Secondary School Students*

INTRODUCTION

If the discipline of science is characterized by logical processes, objective thinking, strong inter-connections, evidence-based facts, does it also mean that while doing science one has to get rid of his/her belief system? Is science free from emotions? Is being rational equivalent to being emotionless? The western thought advocates a strong assumption that emotions threaten the disembodied, detached, and neutral knower hence they do not offer any valid knowledge which undermines the importance of emotions (Zembylas,

2005). School science is being portrayed as rational and non-emotional (Alsop, 2001; Zembylas, 2002). Science has been treated largely as a cognitive affair until recently when the connection between science and learner's affective domain has been reported in the literature. By affective we refer to the learners' affect such as emotions, feelings, moods and attitudes involved in the teaching learning process. Affect has the potential to influence the learner and thus science learning. Affect has to set the stage for learning to take place, just like the catalyst triggering the reaction. It



can both accelerate and retard the process of learning. Science education is not limited to cognition rather it becomes more meaningful when it targets the affect of the learners (Alsop & Watts, 2003) but sadly it has given little attention to the emotions (Reiss, 2005). Students are seldom engaged entirely into learning when their affects are unfavourable. It decides the learners' readiness or remoteness for the learning process. Emotions can be positive or negative, desired or undesired, expressed or hidden and also at times stimulating or silent. Every action is a guided cognitive-affective phenomenon. Our emotions are our silent guardian and to a large extent, they control our behaviour. Several affect interplays in teaching-learning situation, inside a classroom and same implies to a science classroom. One of the affective variables very much a subject of concern over the last few decades in the field of science education which is also the main factor explored for the present study is "Science Anxiety". In 1977, Mallow coined the term "science anxiety" when he identified and defined the phenomenon observed within the clientele at Loyola University Counseling Center, Chicago, the first clinic of its kind to address the phenomenon (Mallow, 2010). Science anxiety is a fear or aversion toward science concepts, scientists, and science-related activities (Mallow, 1981). Mallow and Greenburg (1983) define science anxiety as "a diffuse or vague fear which arises in response to the prospect of learning science and results from intervening self-messages rather than from the science learning itself". Mallow (2010) further adds that science anxiety is "a debilitating interaction of emotion—fear, with cognition—science learning. It often manifests itself as a crippling panic on examinations in science classes, but it is distinct from general test/ performance anxiety." There is a difference between fear and anxiety. Fear deals with things which are generally phobic for majority like arachnophobia, fear of spiders; hydrophobia, fear of water whereas anxiety, on the other hand, is a fear of something self-contained within a person who feels anxious upon facing a situation, a person or a consequence. It is fearful for some and not for others. It means anxiety is varying phenomenon. Some people may be highly anxious, some moderately anxious and some may not be anxious at all for an existing situation or entity. Kastrop and Mallow (2016) explain this through a beautiful example, "Fear deals with things of which there is good reason to be afraid, such as a viper in your bed. Anxiety, on the other hand, means being scared of something that is not intrinsically fearful. Science anxiety is not a viper in your bed. But to a science-anxious person, it feels like it."(p. 3- 1)

Achievement in science is an overall reflection on learner's ability. How a child performs in sciences suggests how much potential he possesses for the future. Higher achievement in science is strongly associated with sound cognitive abilities of learners. It's a common assumption that facts are food for the brain and fuel the thinking process and especially in the context of the teaching-learning process of science subject facts play an exclusive role. Inside a science classroom, facts float and pour into the minds of the learner and much of this business is controlled by the science teachers. Are facts enough to develop the learner's potential in science? Why most students find science learning difficult as they proceed to higher grades? One must wonder if there are some missing ingredients in current school science recipes to address the declining interest of students towards higher sciences. Learners' affect involved in the teaching learning process has been overlooked to a great extent in the past, especially in the science classroom. Interestingly, Watts and Alsop (1997), states that their view particularly the conceptual change view of learning is dependent on the affective domain as much as on the cognitive. Therefore we believe it is indispensable to have a favourable affect within learners for enduring learning experiences. It is a prerequisite for students' engagement into learning, in absence of which meaningful, reliable, retainable and concept-change learning is hindered. Emotions contain useful information that can guide cognition and action (Izard, 2002). Students' emotional wellbeing is often the underlying cause of their interests in sciences and furthers their achievement in science. Emotions such as joy, love, happiness and hope, have a considerable influence over what happens in the classroom which acts to enhance education, optimise student enjoyment and achievement (Alsop, 2005). Generally, anxiety as an emotional state has been reported to have a negative association with students' achievement levels. Despite one's general desire to be less anxious facing various situational circumstances, it's a fact that anxiety is a very obvious biological and psychological phenomenon. Science anxiety has not been explored in Indian classroom setting so far but there is no doubt about its persistence among the students irrespective of their cultural and ethnic settings. It is confirmed through researches in the west that science anxiety interferes with one's performance in science indicative of a negative relationship between science anxiety and achievement. There are many causes of science anxiety including past bad experiences in science classes, science-anxious teachers in elementary and secondary schools, a lack of role models, gender and racial



stereotyping of scientists in the popular media (Kastrup & Mallow, 2016). Whereas on the one hand it is assumed that science anxiety is one of the causes for students' underachievement in science, on the other hand, students' underachievement in science can be the cause for science anxiety. Present study aims to identify the connection between the student's science achievement and their level of science anxiety with the following research questions:

1. What is the level and nature of the distribution of science anxiety and academic achievement in science of secondary school students?
2. What is the impact of science anxiety on academic achievement of secondary school students in science?
3. What is the characteristic difference in science anxiety levels of high and low achievers in science at secondary school?
4. How does the gender of secondary school students influence their science anxiety and academic achievement in science?

Sample and Population

The chosen sample comprised of 1134 students (532 boys and 602 girls) of class X from 34 MBSE (Mizoram Board of School Education) affiliated schools in Aizawl district of Mizoram, India. All the MBSE affiliated secondary schools formed the population of the study. Stratified random sampling technique was used to pool out the sample.

Sources of Data

The present study has made use of both primary and secondary data. The primary data comprises of a sample of class X students and secondary data comprised of data from annual publication on secondary schools, MBSE. The school visits were finalized using data from secondary sources. The class X board results of the sampled population were procured through MBSE office as the parameter of their science achievement.

Instrument Used

Science Anxiety Questionnaire (SAQ)

Here, we tried to adapt the science anxiety questionnaire to suit the indigenous requirement with the addition and deletion of some items as reported by a previous study (Czerniak & Chiarelott, 1984). We tried to identify the possible dimensions for measurement of science anxiety taking an initial idea from earlier studies. The final Science Anxiety Questionnaire (SAQ) comprised of thirty items with six dimensions. Five Likert-type statements were framed under each dimension. Then they were arranged randomly. The objective was to assess the science anxiety levels under

different dimensions. The respondents were expected to rate their response on a continuum ranging from "very relaxed", "relaxed", "neutral", "tensed" and "very tensed" by placing them in the frame of the feeling they experience as they read each statement. Each category was given a corresponding weight of 1, 2, 3, 4, & 5. It was assumed that a greater degree of tension is perceived by those who are more science anxious and were given a high score on science anxiety. The concurrent criterion validity of the questionnaire used in the present study was found to be 0.68 with a previous study (Czerniak, & Chiarelott, 1984). The reliability of the questionnaire with a test-retest method was found 0.87 with an approximate one month's gap. The Cronbach alpha coefficient for internal consistency on test and retest was found 0.86 and 0.88 respectively.

Dimensions of Science Anxiety: Studies indicate that science anxiety can be measured under certain dimensions (Czerniak & Chiarelott, 1984; Kaya & Yildirim, 2014). The present Science anxiety questionnaire has the following 6 dimensions:

Fear of testing: This dimension deals with the level of fear within the students displayed against any kind of testing such as class tests, monthly or weekly tests, annual exams, quizzing, explaining experiments in science labs.

Application of science: It assesses the feeling of students while performing some process skills in science lab.

Performance in front of others: It deals with the level of confidence within students, to handle lab equipment, working in front of masses etc.

Teachers' behaviour, teaching style and teaching environment: It assesses students' feelings about their science teachers' behaviour, teaching styles and science classroom environment.

Content mastery: It covers students' level of anxiety in terms of their reactions while mastering and applying science content.

Parents' expectation: This dimension relates to the feelings of the students against the attitude and expectations of their parents towards their science achievement.

The sampled students of Class X were given SAQ and asked to fill in their choices against the given items after explaining them the process of answering.

DATA ANALYSIS & STATISTICAL INTERPRETATION

This section has been divided into three sections, namely the descriptive, correlational and differential analysis.

**Section-1: Descriptive Analysis**

We aimed to study the level and nature of the distribution of the variables chosen for the present study formulating the following objective:

Objective 1:

To figure out the level of science anxiety and science achievement amongst the secondary school students and to study the nature of the distribution of the scores in terms of skewness and kurtosis.

For the above-stated aim, we subjected the data to descriptive analysis and obtained important measures describing the sample (Table-1)

Table-1**Nature of Distribution of Scores of Achievement in Science (Dependent Variable) and Science Anxiety (Independent Variable) in Terms of Mean , Standard Deviation, Kurtosis And Skewness Values**

Variable name (N=1134) with range	Mean	SEM	SD	Kurtosis	SEK (standard error of kurtosis)	Skewness	SES (standard error of skewness)	Normality test passing for kurtosis and skewness respectively(-1.96-+1.96)	Whether passed normality?
Science Anxiety (30-150)	96.39	.46	15.40	0.95	0.15	-0.66	0.07	6.53, -9.09	NO, NO
Science achievement in Board Exam (0-100)	57.04	.46	15.05	-0.48	0.15	0.11	0.07	-3.31, 1.5	NO, YES

Source: Field data

Interpretation of Science Anxiety scores: The science anxiety score range is 30-150 with least obtained score of 30 and maximum obtained score of 140. The mean value of the scores obtained from the sample population is 96.39 with SEM of 0.457. The median value is 98. The SD value is 15.40. The skewness value (-0.664) obtained reveals the negatively skewed nature of the distribution. This suggests that the level of science anxiety is towards the higher side in the sample population which is undesirable. The positive value of kurtosis (0.948) means that there is more data towards the tails and less data is in middle of the distribution i.e. it is leptokurtic.

Interpretation of Science Achievement scores: The science achievement score range is 0-100 (MBSE board) with least obtained score of 21 and maximum obtained score of 96. The mean value of the scores obtained from the sample population is 57.04 with SEM of 0.447. The median value is 56. The SD value is 15.05. The skewness value (0.110) obtained reveals the slight positively skewed nature of the distribution. This

suggests that the level of achievement in Science is moderately uniform with slightly more distribution of scores below the mean value which is acceptable for a population. The negative value of kurtosis (-0.481) means that there is limited data towards the tails and more data is in middle of the distribution i.e. it is platykurtic.

Section-2: Correlational Analysis

This study aimed to understand and analyze the impact of science anxiety (independent variable) on the academic achievement of secondary school students in science (dependent variable). For that purpose following objective has been stated:

Objective 2:

To measure the impact of science anxiety on academic achievement of secondary school students in science.

To fulfill this objective the correlation analysis was performed between the assumed dependent and independent variables and Pearson's Correlation coefficient was obtained to be 0.1 (Table -2).



Table-2
Correlation between Achievement in Science (Dependent Variable) and Science Anxiety (Independent Variable)

Independent variable	Dependent variable	N	Df	Pearson's Correlation Coefficient	Level of Significance	S/NS
Science Anxiety(SA)	Science Achievement (Sci.Ach.)	1134	1132	0.1	0.01	S*

Source: Field data *extremely significant at 0.01 level

Interpretation of Correlation Coefficient: If we analyze the strength of the relationship it seems that the level of science anxiety of students is positively contributing to their science achievement with a low magnitude of 0.1. Although very meagre, this impact of science anxiety on student's science achievement was found statistically significant at .01 level for the studied sample. The found value is desirable as a minimum level of anxiety is present even in high achievers. Past researches have recognized science anxiety as a negative affect responsible for student's underperformance in science. However, in the present study, the minimum but positive correlation is indicative of the fact that anxiety of any kind at its threshold and controlled level is very normal. Perhaps, it does not negatively contribute to one's achievement at its minimum level as it is a very natural phenomenon occurring within students due to lot many reasons. Since it has a biological as well as psychological basis it is not a disadvantage in most of the situations.

Section 3: Differential analysis

To find the answer to the third research question we formulated the following research objective.

Objective 3:

To compare the high and low achievers in science in relation to their science anxiety.

In this section, the data was subjected to differential analysis by applying student t-test (independent, unpaired) and chi-square test. We compared the data based on levels of science achievement, levels of science anxiety and gender. The research questions guided us to propose the null hypothesis which is as follows:

Ho:- There is no significant difference between high and low achievers in science with respect to science anxiety.

To identify the high and low achievers in the sample students' science achievement scores were arranged in descending order such that marks were arranged from highest to lowest. The upper 27% of the sample i.e. top 306 samples was identified as the high achievers and similarly the lower 27% of the sample i.e. the bottom 306 sample was identified as the low achievers. The science anxiety scores of the two groups were subjected to differential analysis. For the testing of hypothesis student 't' test (independent sample) was performed (Table-3).

Table-3
Significance of difference between High and Low Achievers in Science in relation to their Science Anxiety

Group	Number	Mean (X)	SD	SEM	t value	df	Level of Significance	S/NS	Decision on Null Hypothesis
High Achievers	306	97.56	14.26	.82	3.90*	610	0.01	S*	Rejected
Low Achievers	306	92.79	15.94	.91					

Source: Field data, *The test suggests that the difference between the two means is extremely significant at 0.01 level.

Interpretation of data: A reference to Table-3 reveals that there is statistically significant difference between the mean science anxiety scores of high achievers in science (X= 97.56, SD=14.26) and mean science anxiety scores of low achievers in science (X= 92.79, SD=15.94); the obtained t value (3.90) was

found extremely significant at 0.01 level with degree of freedom 610, 't' critical value(2.576) being < obtained 't' value. It means that science anxiety of secondary school students varies between low and high achievers. Hence the null hypothesis was rejected. Interestingly,

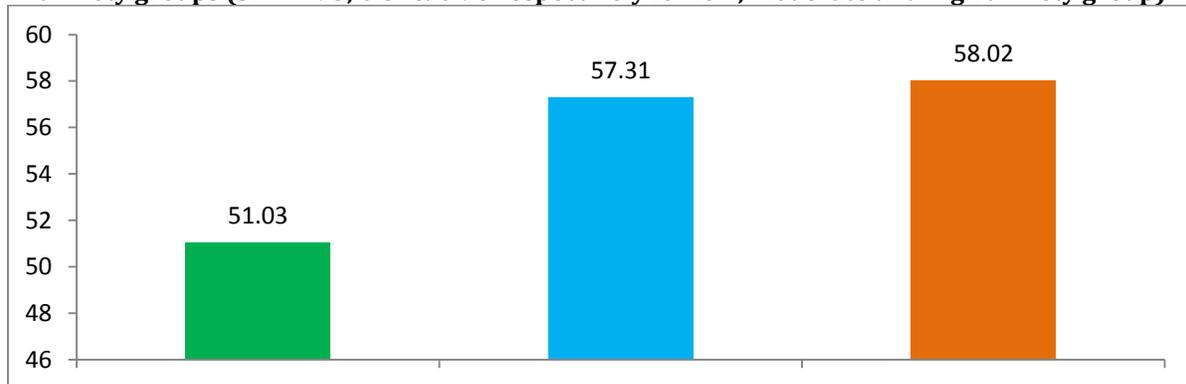


the science anxiety of high achievers is greater than that of low achievers.

A further analysis was performed where we segregated the students' science anxiety scores into three levels. For this purpose 'bucket analysis' technique was applied taking the idea from Kastrup & Mallow (2016). The science anxiety scores of students ranging from 30-150 were divided into three categories with scores from 30-70 revealing low, 71-110 revealing moderate and 111-150 revealing high science anxiety level.

A comparison of mean science scores of low, moderate and high anxiety group (Figure 1) revealed that both moderate and high anxious groups showed better performance in science compared to low anxious group found significant at 0.01 level. However, between the moderate and high anxious group, where the later has a higher mean score, the difference is insignificant at 0.01 level. This finding is interesting indicating the existence of science anxiety in high anxious groups may have positively contributed to perform better in science and overall achievement than the low anxious group.

Figure 1: Mean science marks in low (green 51.03), moderate (blue 57.31) and high (red 58.02) anxiety groups (SEM 1.93, 0.51 & 0.98 respectively for low, moderate and high anxiety group)

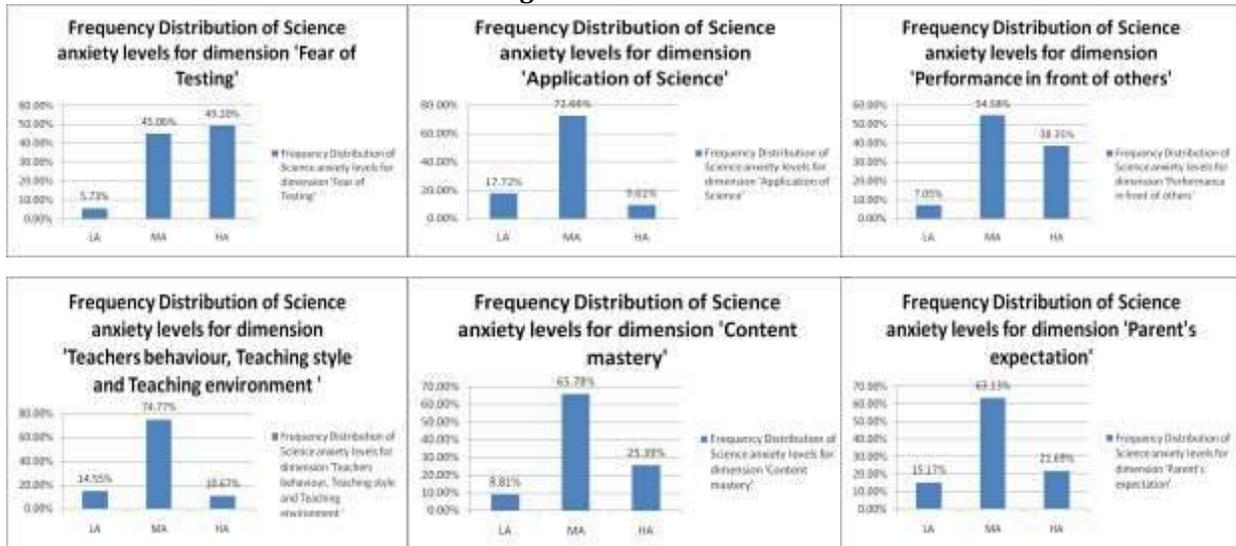


Further we analyze the differences between high and low achievers in science with respect to the six dimensions against which science anxiety of students was measured using Science Anxiety Questionnaire (SAQ). As already mentioned under every dimension five items were kept making a total of thirty items. Each dimension has a score range of 5-25. We segregated the low, moderate and high anxiety scores for each dimension with scores between 5-11, 12-18 & 19-25 respectively. Frequency distribution of the different anxiety levels on each dimension was

analyzed using percentages (Figure 2). The findings revealed that except 'Fear of Testing' dimension on all other dimensions students were found to be moderately science anxious. On this dimension students with high science anxiety (49.20%) and with moderate science anxiety (45.06%) together accounted for 94.3 % of the total sample population. It means 'fear of testing' dimension contributed maximally to their science anxiety.



Figure 1: A comparative description of frequency distribution of science anxiety level of students as measured against the its six dimensions.



Further, student t-test (independent) was performed to compare the high and low science achievers for their science anxiety levels on each dimension. For testing following null hypotheses were proposed.

Ho1:- There is no significant difference between high and low achievers in science with respect to science anxiety measured through the dimension 'fear of testing'

Ho2:- There is no significant difference between high and low achievers in science with respect to science anxiety measured through the dimension 'application of science'

Ho3:- There is no significant difference between high and low achievers in science with respect to science

anxiety measured through the dimension 'performance in front of others'

Ho4:- There is no significant difference between high and low achievers in science with respect to science anxiety measured through the dimension 'Teachers' behaviour, teaching style and teaching environment'

Ho5:- There is no significant difference between high and low achievers in science with respect to science anxiety measured through the dimension 'Content mastery'

Ho6:- There is no significant difference between high and low achievers in science with respect to science anxiety measured through the dimension 'Parents' expectation'

Table-4 depicts the results of the hypothesis testing.

Table-4
Significance of difference between High and Low Achievers in Science in relation to their means on different dimensions of Science anxiety

Dimensions	Groups	Number	Mean (X)	S.D.	SEM	t value	Df	Level of Significance	S/NS	Decision on Null Hypothesis
1. Fear of testing	High achievers in Science	306	19.23	3.49	0.19	9.28*	610	0.01	S*	Ho1 Rejected
	Low achievers in Science	306	16.51	3.76	0.21					
2. Application of Science	High achievers in Science	306	13.65	3.03	0.17	4.69*	610	0.01	S*	Ho2 Rejected
	Low achievers	306	14.87	3.41	0.19					



	in Science									
3. Performance in front of Others	High achievers in Science	306	17.79	3.47	0.19	6.08*	610	0.01	S*	Ho3 Rejected
	Low achievers in Science	306	15.99	3.87	0.2211					
4. Teachers' behaviour, teaching style and teaching environment	High achievers in Science	306	14.60	2.83	0.16	0.93	610	0.05	NS	Ho4 Accepted
	Low achievers in Science	306	14.38	3.14	0.18					
5. Content mastery	High achievers in Science	306	16.21	3.21	0.18	2.59*	610	0.01	S*	Ho5 Rejected
	Low achievers in Science	306	15.51	3.46	0.19					
6. Parents' expectation	High achievers in Science	306	15.84	3.83	0.22	1.08	610	0.05	NS	Ho6 Accepted
	Low achievers in Science	306	15.52	3.74	0.21					

Source: Field data

Interpretation of data: A reference to Table-4 shows that for four dimensions of SAQ there is statistically significant difference between the mean science anxiety scores of high and low achievers in science: Fear of testing [t(610)=9.28, p<.0.01], Application of science[t(610)=4.69, p<.0.01], Performance in front of others [t(610)=6.08, p<.0.01] and Content mastery [t(610)=2.59, p<.0.01]. On these dimensions, high achievers are found more anxious except the dimension 'application of science' on which low achievers are found more anxious. However, there is no significant difference between the mean scores for two dimensions of SAQ: Teachers' behaviour, teaching style and teaching environment [(t (610)=0.93, p>.05)] and

Parents' expectation [(t (610)=1.08, p>.05)]. Hence Ho1, Ho2, Ho3, Ho5 were rejected and Ho4, Ho6 were accepted.

The last research question guided us to formulate the following research objectives which we subjected to differential analysis.

Objective 4:

To compare the gender variation in science anxiety amongst secondary school students.

Following null hypotheses were proposed

Ho:- There is no significant gender difference in secondary school students with respect to their science anxiety. For the testing of hypothesis student 't' test (independent sample) was performed (Table-5)

Table-5
Significance of difference between Boys and Girls in relation to their Science Anxiety

Group	Number(N)	Mean (X)	SD	SEM	t value	Df	Level of Significance	S/NS	Decision on Null Hypothesis
Boys	532	94.84	14.93	.65	3.21*	1132	0.01	S*	Rejected
Girls	602	97.77	15.68	.64					

Source: Field data. *The test suggests that the difference between the two means is highly significant at 0.01level.

Interpretation of data: A reference to Table-5 reveals that the obtained t value (3.21) was found significant at 0.01 level with a degree of freedom 1132, 't' critical value(2.576) being < obtained 't' value. It means that science anxiety of secondary school students vary with respect to their gender and girls were found to be more science anxious. Hence the null

hypothesis was rejected. Further χ^2 results for test of independence between gender and the three levels of science anxiety was also performed with the following null hypothesis.

Ho:- There is no significant association between gender and level of science anxiety.



Table-6
 χ^2 results for test of independence between Gender and level of Science Anxiety

Group	High Anxiety	Moderate Anxiety	Low Anxiety	Total	Level of Significance	Decision on Null Hypothesis
Boys	Obs. 66 (exp.87.72)	Obs. 431 (exp.410.96)	Obs. 35 (exp.33.31)	532	0.01	Rejected
F_o-F_e	-21.72	20.04	1.69			
Girls	Obs. 121 (exp.99.27)	Obs. 445 (exp.465.03)	Obs. 36 (exp.37.69)	602		
F_o-F_e	21.73	-20.03	-1.69			
Total	187	876	71	1134		
$\chi^2 = (F_o - F_e)^2 / F_e$	5.38+4.76+0.98+0.86+0.09+0.08=12.15* (df=2)					

Source: Field data.

Interpretation of data: The chi-square analysis (Table-6) shows that science anxiety is not independent of gender. The obtained chi-square value of 12.15 was found highly significant at 0.01 level at 2 df, ' χ^2 ' critical value (9.210) being < obtained χ^2 value indicating that there is a significant association between the different levels of science anxiety and gender. Hence the null hypothesis was rejected.

Objective 5:

To compare the gender variation in science achievement amongst the secondary school student. For the given objective the science achievement scores of students were compared with respect to their gender. Following null hypothesis was proposed:

Ho:- There is no significant gender difference in secondary school students with respect to science achievement.

For the testing of hypothesis student 't' test (independent sample) was performed (Table-7).

Table-7
Significance of Difference between Boys and Girls in Relation to their Achievement in Science

Group	Number	Mean (X)	SD	SEM	t value	Df	Level of Significance	S/NS	Decision on Null Hypothesis
Boys	532	58.75	14.32	.621	3.62*	1132	0.01	S*	Rejected
Girls	602	55.52	15.51	.632					

Source: Field data. *The test suggests that the difference between the two means is extremely significant at 0.01level.

Interpretation of data: A reference to Table-7 reveals that the obtained t value (3.62) was found significant at 0.01 level with a degree of freedom 1132, 't' critical value(2.576) being < obtained 't' value. It means that the science achievement of secondary school students varies with respect to their gender. The science achievement of boys is better than girls. Hence the null hypothesis was rejected.

Objective 6:

To compare the gender variation on science anxiety amongst secondary school students within high and low achievers in science.

The science achievement scores were used as a grouping variable. The high and low achievers in

science were selected comprising of 306 students each (upper and lower 27%). The science anxiety scores of the two groups were pooled out and further within high and low achievers gender comparison was done. Following null hypotheses were proposed;

Ho1:-There is no significant difference between high achieving boys and high achieving girls of secondary school students with respect to science anxiety.

Ho2:-There is no significant difference between low achieving boys and low achieving girls of the secondary school students with respect to science anxiety.

For the testing of hypothesis student 't' test (independent sample) was performed (Table-8).



Table-8
Gender differences in High and Low Achievers in Science in relation to their Science Anxiety(SA)

Group	Number	Mean (X)	SD	SEM	T value	Df	Level of Significance	S/NS	Decision on Null Hypothesis
SA of High Achieving Boys	156	95.44	14.70	1.18	2.678	304	0.01	S*	Ho1 Rejected
SA of High Achieving Girls	150	99.76	13.49	1.10					
SA of Low Achieving Boys	120	93.07	13.90	1.27	0.246	304	0.05	NS	Ho2 Accepted
SA of Low Achieving Girls	186	92.61	17.16	1.26					

Source: Field data

Interpretation of data: A reference to Table-8 reveals that there is statistically significant difference between the mean science anxiety scores of boys($X=95.44$, $SD=14.70$) and girls($X=99.76$, $SD=13.49$) within the high achieving groups; the obtained t value (2.678) was found significant at 0.01 level with degree of freedom 304, 't' critical value(2.576) being < obtained 't' value. It means that there was variation in science anxiety levels of students within the high achieving groups with respect to their gender. The level of science anxiety is found higher in girls compared to boys. Hence the null hypothesis (H_01) was rejected. However, there was no statistically significant difference found between the mean science anxiety scores of boys($X=93.07$, $SD=13.90$) and girls($X=92.61$, $SD=17.16$) within the low achieving groups; the obtained t value (0.246) was found not significant at 0.05 level with degree of freedom 304, 't' critical value(1.960) being > obtained 't' value. It means that there was no variation in science anxiety of students within the low achieving groups with respect to their gender. Hence the null hypothesis (H_02) was accepted.

DISCUSSIONS AND IMPLICATIONS

The findings of the present study that science-anxiety exists among the participants. Students experience the phenomenon in and outside science classroom. There are students with high, moderate and low anxiety levels. Science anxiety easily surfaced out when students encountered situational scenario pertaining to different dimensions of measurement as mentioned earlier. The high science anxiety levels were found most against the dimension of 'fear of testing' in the population for both boys and girls compared to the other five dimensions. Most students frightened the situation of the examination hall, demonstration exams,

viva-voce exams, answering a teacher's question and have hidden fear before every kind of assessments. It means they find examinations a tough tussle ground and anticipate the serious consequence upon failing. This feeling was very much evident through informal interactions with students. Interestingly, our finding reveals that it is the high achievers in science who experienced high levels of science anxiety. High achievers in science were found to be more science anxious than the low achievers on the dimension 'fear of testing', and 'content mastery' which indicates they feel pressurized in situations where they have to be judged on conceptual understanding. They were also found to be more anxious on the dimension 'performance in front of others' which means they feel tensed when they are being judged by others for their performance. Exceptionally low achievers in science were found more anxious on the dimension 'application of science' which implied that they were more uncomfortable in handling practical component of science than the high achievers. However, there was no significant difference observed between the high and low achievers on the dimensions of 'teachers' behaviour, teaching style and teaching environment' and 'parents' expectation' which suggests that in general the human association through the teaching-learning and familial environment does not effect the students according to their achievement levels. Also, gender influences one's performance in science according to present findings wherein girls at the secondary level are more science-anxious compared to their counterparts. High achieving girls were found to be more science anxious than the low achieving girls. The finding on gender is in agreement with one of the major bi-national studies by Kastrup and Mallow (2016). But our finding does not give us a reason to identify a



strong negative relationship between science anxiety level and science achievement of students, as observed in earlier findings. Rather there is a statistically significant positive relationship although of a very low magnitude. The scenario prevalent in the researched sample is indicative that science anxiety although a negative affect which at its high levels hinders high achievement in science, at its minimal threshold level contributes to improving achievement in science. It further implies that a less science anxious student may or may not perform well in science and vice-versa. Since high achievers were more science anxious, it compelled us to ask was it for any good? What could be the reason behind high anxiety of high achievers? Being anxious is being normal when it is within safe limits and can be controlled. It could be that its manifestation at minimal level stimulates students to compete in sciences and its absence brings down their performance levels. One can fairly construct knowledge in science if one is less science-anxious. However, the present finding also suggests that science-anxiety at a minimal threshold level are very obvious and may not strictly interfere with student's achievement in science. It is the high science anxiety levels which need to be given more attention as high science-anxious students fail to construct knowledge because their emotional state does not allow them. Science-anxiety is a universal phenomenon which is prevalent among school through university students. Science Anxiety is found to decrease from lower to higher grades (Czerniak & Chiarelott, 1984). This can be partly because of students' gradual acquaintance to the subject and also partly because of the persistence of interest towards the subject all along. Studies of attitudes into school science show that children's attitudes towards science appear to become less positive as they progress through early stages of schooling, and become even less positive as they move on to higher levels which remains unclear (Koballa, 1995). It suggests by the time students reach higher grades they accept the fact that science is hot (modern terminology), hard, hostile and sometimes historically elite subject and they adjust with the requirement of being an ideal science student who is cognitively sound and emotionally inert. Often in doing so, they mask their emotions, pretending to be emotionally balanced and use coping strategies to resist emotional inclination. This is what the science students learn in the process of schooling conforming to contemporary science standards. What they fail to learn is that science is for all; science is an interactive discipline which needs constant engagement with the content and discourse on the environmental and social

phenomenon, and that science learning is enhanced and supported by positive affect. Science anxiety has been documented in classrooms belonging to different cultural settings and is very much visible in both advanced societies and societies which aspire to be advanced. Kastrup-Mallow's (2016) bi-national study on Danish and American students raised many questions on contemporary practices of imparting and doing science. Their submission is to turn the table using a learner-friendly approach, where learners are constructing science experience in multiple perspectives and not just witnessing the laws of nature through the lens of their science teachers. They need to wear their glasses, observe for themselves and have the freedom and ease to present their logics. Here teachers need to take action by boycotting their expectations of rote memorization, mechanical thinking from students. Instead, they encourage them to reflect upon their own experiences and contextualize their science learning. Divergent thinking at the formal operational stage allows the learner to think of the problem in a holistic perspective (Kastrup & Mallow, 2016). It is neither directed nor objective rather an amalgamation of different possibilities leading to the right conclusion. Students need to be taught about the importance of mistakes in doing science. Science teachers should shed away from their traditional fact presenting business. They should encourage students to find their answers to a given problem. Revolving around myths leads the way to facts. The teacher needs to address the core issue that science learning and teaching is exploratory and not just explanatory. Anxiety levels can be lowered if the teacher accepts that mistakes are very obvious in the path of exploration. In the easiness of explanation, something new and challenging can be introduced in the early years to make science learning interesting. The teacher is the product of the same educational system fails to resist the anxiety what she/he experienced in her/his science classroom and replicate it safely into her/his students. The whole disorder started through a modern version of school science which misinterprets the real nature of science. Students fail to learn science when science anxiety operates antagonistically to their learning requirement. Consequently, it materializes into a phobia towards science if it is not checked well in time. Science anxiety has been observed as a silently hidden hesitance towards science within students which is very troubling. We genuinely support the notion that science education in modern times has given rise to certain phobias which are not defining the real nature of science. Students are under stress for unnecessary reasons which should have not troubled them. They



feel science anxious when they do things without hands-on training, on being constantly compared to a set of standards, being forced to compete with their peers, and at times being labeled 'unfit for science' by their teachers. Teachers can improve upon students' science anxiety level by improvising their teaching-learning process of science. By improvisation, we refer to the involvement of learner's positive affects into the classroom experiences such as their happiness, interests, motivation, positive group behaviour interactions, self-confidence, temperament, self-efficacy and moods. We thus strongly believe involving affect in teaching and learning science will be a life-changing experience for both teachers and learners which they will cherish for the rest of their lives. Science demands faith in its dynamic nature by doers of science and root of this faith lies in the passionate labour they put in their scientific endeavour which is never possible without involving one's emotions. Actually, affect is the artist behind the artistry of science.

Declarations

Funding – No funding

Conflicts of interest- Authors declare there is no conflict of interest.

Availability of Data and Material (data transparency)- Manuscript is supported with data which can be provided on request.

Acknowledgement

The authors want to acknowledge Czerniak & Chiarelott whose scale was adapted for the present study.

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THE ROLE OF SOCIOLOGICAL RESEARCH IN THE PREVENTION OF DRUG ADDICTION AND ANTISOCIAL BEHAVIOR OF YOUNG PEOPLE

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ABSTRACT

The article presents an analysis of a survey conducted on the prevalence of illicit drug trafficking in Uzbekistan, the results of a sociological study of the socio-cultural sphere of life of young people who use narcotic substances, which allowed us to trace their anti-social behavior since the beginning of drug use. This allowed us to come to some conclusions that drug use in this environment becomes a fashionable, prestigious, often mandatory action with the manifestations of certain rituals. Identifying the main causes of youth using narcotic can lead to finding out the ways of preventing them.

KEYWORDS: *role, behavior, prevention, sociological research, youth, spreading narcotics.*

DISCUSSION

The fight against drug addiction and drug trafficking is one of the main priorities of the domestic and foreign policy of the Republic of Uzbekistan, being part of the global anti-drug system. Since 1999, the National legislation of Uzbekistan has been brought into line with international standards [1], all the main conventions in the field of combating drug trafficking have been ratified [2].

The resolution of the plenum of the Supreme court of the Republic of Uzbekistan dated April 28, 2017 No.12 "On judicial practice in criminal cases related to illicit trafficking in narcotic drugs and psychotropic substances" notes that crimes related to: "Illegal trafficking in narcotic drugs and psychotropic substances pose a serious threat to the health of the population, economic and moral foundations of society, negatively affect family relations, and cause other social problems" [3].

It should be noted that the implementation of measures in the field of reducing drug demand and supply in the republic is carried out in accordance with the anti-drug strategy reflected in the Program of Comprehensive Measures to Counter Drug Abuse and Illicit Trafficking for 2016-2020, as well as Government decisions [4].

Thus, as a result of the organizational, practical and operational-preventive measures taken, law enforcement agencies in 2019 revealed 5026

facts of crimes related to drug trafficking (this is 5.2% more than in 2018). Of these, 1701 (in 2018 - 4.6% less than in 2018) are crimes related to the sale of drugs, 395 (32.7% less than in 2018) with smuggling, 1064 (14.9% less than in 2018) with illegal cultivation of narcotic plants, 43 (34.8% less than in 2018) with the content of drug dens and 1823 (15.2% more than in 2018) - other drug crimes.

In 2019, more than 1 t. 200 kg (2.4% more than in 2018) of drugs were seized from illicit trafficking: heroin – 40.9 (almost 2 times more than in 2018) kg, opium – 224.6 (11.2% less than in 2018) kg, hashish – 111.6 (81.8% more than in 2018) kg, marijuana – 736.4 (22.6% more than in 2018) kg, kuknar – 62.9 (72.7% less than in 2018.) 227) kg, tramadol and other drugs – 23.8 (3.1 times more than in 2018) kg, as well as 194.1 (17.1% more than in 2018) gr. new psychoactive substances.

In addition, 532 (2 times more than in 2018) gr. and 62858 (8.5 times more than in 2018) tablets of psychotropic substances were seized from illicit trafficking, as well as 737.24 (10.3% less than in 2018) gr. and 30 (in 2018 such cases were not registered) lit. precursors [5].

Based on the above criminal statistics, it can be seen that, despite the measures taken in the country, crimes in the field of drug trafficking do not have a steady downward trend. In addition, "In recent years, the range of narcotic drugs and prohibited



antidepressants has somewhat expanded, primarily due to synthetic cannabinoids used in smoking mixtures of the spice type, as well as stimulants that are derivatives of aminoacrylketones and sold under the guise of "bath salts" and "fertilizers"... A variety of "spices" and similar products are most often sold under the guise of alternative medicine drugs or as food additives "[6].

It should be noted that the difficulty in eliminating the consequences of smoking spice mixtures lies in the fact that "In many cases, there are no narcotic compounds in the blood of patients during analysis, which significantly complicates the diagnosis and appointment of competent treatment" [7].

Describing the content of the socio-cultural sphere of life of respondents, it should be noted that its main indicators were determined: reading fiction, periodicals, watching movies, videos and TV shows, listening to radio programs, viewing internet information. These indicators are communicative channels of information transmission, which are one of the modern products of society's culture, through which, in addition to creating positive attitudes, lifestyle elements, and orientation, skills of an antisocial nature can be formed.

So, in particular, the majority of respondents [8] got an idea about drugs and their effect on the human body from television programs (51.4%), publications in newspapers and magazines (26.8%), videos (22.4%), radio programs (14.8%), books and brochures (7.6%). Only 2.6% of respondents found out about it via the Internet. Thus, the priority in shaping the perception of drug use among young people belongs to the mass media, which often show "advertising" scenes of non-medical drug use, hypertrophied cultural values that promote the cult of violence, anti-social lifestyle and sexual promiscuity. For a certain part of the audience, especially young people who do not have the necessary social experience, who perceive these scenes uncritically, such information in the corresponding specific life situation becomes a "guide to action" for drug use.

Interesting data were obtained when comparing the sources of information about drugs that became known to "normal" and "consumers". It turned out that drug users, in comparison with the control group, received it more often not from official sources (TV and radio broadcasts, publications in the press, the internet), but from video, movies and fiction.

The majority of drug users (60.0%) watched videos and movies advertising drug use and drug trafficking. However, not only film and video products carry a negative charge of information that popularizes drugs. Great is the merit of fiction that promotes the cult of drug use.

According to the study, reading books did not arouse any interest in more than one-fifth of all young people surveyed. Even more of them are individuals in the group of "consumers" (23.0%). In the control group, the proportion is 20.2 per cent. Reading respondents prefer detective literature (27.4%), adventure (23.2%) and science fiction (21.4%). People aged 14-30 are least interested in poetry (8.6%) and technical literature (9.3%).

The above trends are particularly pronounced among drug users.

Thus, there is a preference among "consumers" compared to "normal" in reading science fiction, adventure, thrillers and mysticism.

This characterizes one of the causes, which is located at the individual-psychological level of determination of drug addiction. It consists in the fact that consumers tend, as a result of psychological discomfort, to go to a world different from the one in which they live, to the world of dreams, unreal events, to the world of fiction and fantasy. Their apparent realization they are trying to achieve with the consumption of narcotic drugs.

In addition to the considered elements that characterize the socio-cultural sphere of life, there is another equally important one that determines the attitude of this category of people to music.

The respondents' musical interests were distributed as follows. The main number of respondents (47.2%) prefer pop and pop music, adherents of rock music (hard, heavy, mainstream, etc.) – 26.3%, like classical music – 26.2%, techno (acid, rap, etc.) – 20.4%, alternative music (punk, hard rock, grunge, etc.) – 13.0%, jazz – 8.2% and folk (folk, ethnic) - 4.0%.

Determinants of the socio-cultural sphere have another indicator that appeared relatively recently. We are talking about the penetration of computer technologies into this sphere of communication, which, in one way or another, characterize the process of cultural development of society.

More than half (63.4%) of respondents have the ability to use a computer. In the control group, 63.6% use a PC, and among "consumers" – 60.7%. Most of them have this opportunity at the place of study (30.8%), residence (27.2%) and friends (24.3%). These indicators in the control group and the group of drug users do not differ significantly. The only thing is that they reflect the availability of free access to electronic computing for most teenagers and young people.

Much more interesting is the characteristic of the purposes for which the computer is used. The majority of respondents (52.1%) play computer games, type different texts-43.4% and 20.2% travel on the internet.



By themselves, these figures do not reveal negative trends. However, in recent years, more and more "methodical" information about drug production and consumption has appeared on the internet.

One of the leading places in the formation of personality is occupied by the sphere of leisure.

According to the research, in 61.8% of cases, young people's free time is filled with socializing with friends, in 28.2% - sports, in 26.0% - visiting nightclubs and discos, in 23.2% – reading books, in 19.5% – spending time at the computer, in 14.9% – preparing lessons. In 9.4% of cases, they do nothing.

Only 4.2% in their free time attend clubs at the place of study and 3.3% play musical instruments in various rock or jazz groups.

The structure of free-time employment of drug users in comparison with the control group can be presented as follows. Users of narcotic drugs are less likely to engage in free time lessons, sports, attend clubs at the place of study, read fiction and spend time at the computer. They prefer to socialize with friends, visit nightclubs and discos, play musical instruments in rock or jazz bands, or simply do nothing, spend time in idleness and idleness.

Studying the obtained indicators, it can be noted that, despite the apparent harmlessness of each of them, they still have a huge negative potential. For example, take the "socializing with buddies" noted by most drug users. Here, communication involves contacts mainly with members of groups of socially dangerous orientation, which include the "consumers" themselves.

Therefore, studies show that information about drugs is not enough in 32.4% of cases, adolescents and young people received these benefits from friends at their place of residence and in 29.8% – from friends at the place of their free time. Basically, they are the same members of antisocial groups formed on a territorial basis and united by one common goal and interest – the purchase and consumption of narcotic drugs. Usually, such a group is headed by an adult or a young person who has previously served a sentence in prison. It is characterized by a pronounced conspiracy, a clear distribution of roles, its own laws and rules of behavior, signals of information exchange, i.e. its own subculture, which is inherently quite aggressive, since it invades the sphere of official culture, breaking its values and norms, imposing its own rules and attributes in it. This is evidenced by the fact that 28.0% of "consumers" wore clothing (shirts, T-shirts, hats, etc.) advertising drugs.

The language is also a carrier of the subculture, which is now permeated with the terminology of criminal jargon, including the jargon used by drug addicts [9]. This trend is quite

dangerous, as it characterizes the growing process of criminalization and drug addiction of the population, more open drug use and distribution. Drug use is becoming part of youth communication and a means of leisure. The drug market is looking for consumers mainly in the youth environment, constantly improving the production of drugs, offering more affordable and cheap synthetic drugs.

Drug use among young people is becoming fashionable, prestigious and often mandatory. His specific rituals appear, such as one syringe for everyone, sharing a dose of the drug with a friend, adding his own blood to clean and test the drug, which seems to connect all members of such a group by blood.

One of the indicators of health status is treatment or registration in a particular medical institution [10]. Comparing the data of the responses of the control group with the responses of "consumers", it can be concluded that the share of drug users is significantly higher in the number of those who are registered for health reasons.

Thus, the individual problems and mechanisms of determination discussed above at various social levels act as factors that can influence the narcogenic antisocial behavior of adolescents and young people. They can, by their very nature, quickly form a person focused on drug use, committing offenses and crimes, and contribute to the development of social and biological pathologies.

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THE EFFICACY OF SEED PROTECTANTS AGAINST ALTERNARIOSIS DISEASE OF VEGETABLE CROPS

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Article DOI: <https://doi.org/10.36713/epra5963>

ABSTRACT

Vegetable crops make up the bulk of the world's agricultural crops. Currently, the gross yield of vegetables in the world is 560-570 mln. tons, and in developed countries, per capita consumption of vegetables corresponds to 100 kilograms per year. From ancient times, one of the main conditions for ensuring high and quality yields of vegetable crops is the protection of crops from diseases. To meet the needs of the population and industry of the republic, about 1.9 mln. tons of potatoes and 5.9 mln. tons vegetable and melon products are required. In order to increase the yield and quality of vegetable crops grown in the country, the use of modern technology in their cultivation, the introduction of productive and local varieties, as well as a number of factors play a special role in effective protection of vegetables from various diseases.

KEYWORDS: *Alternaria, seed protectants, potato seed, tomato seed, disease, pathogen, seed infection.*

INTRODUCTION

Alternariosis diseases of vegetable crops grown in the country have not been studied on a regular basis yet. A.M Muminov, V.I Pestsov and others have studied the occurrence of alternariosis in cabbage, potatoes and tomatoes. In Tashkent region, insufficient research has been conducted on the study of alternariosis in vegetables grown and the development of effective control measures in recent years [13].

Therefore, today, a great attention is paid to conduct thorough research to determine the prevalence and damage of alternariosis in vegetable crops and to study the effect of fungicides against the disease on the yield and quality of vegetable crops.

According to B.A. Khasanov et al, the morphological features of the four informal species-groups of small spore representatives of the Alternaria family, most commonly found in food products, including cereals, have given presented below [15].

MATERIALS AND METHODS

The collection of materials was carried out during a route survey on sowing of agricultural crops in farms and in vegetable stores of Tashkent region.

The identification practices were conducted according to the monographs by M.B. Ellis, L.M. Levkina, F.B. Hannibal [9,10, 6, 5]. Reconciliation was done according to the work of M.Sh. Sagdullaeva et al [7].



RESULTS AND DISCUSSION

One of the research tasks is to test modern and used preparations against alternariosis. As we know, alternariosis diseases have the property of being transmitted by seeds, so the possibilities of spreading diseases by seeds have been studied.

During the study, seed dressing agents recommended and giving good results on the control of fungal diseases and alternariosis were tested. To do this, 1 month before sowing tomato and potato seeds were treated by sprayig with a suspension against fungus *Alternaria alternata*, and 10 days before sowing the seeds were again sprayed with Raxil 60 FS 6% WSS (Water soluble suspension) (0.4 and 0.5 l/t, Topsin -M 70% WP (Wettable powder) (1.0 and 1.5 kg/t), Maxim 2.5% SC (Suspension concentrate) (0.4 l/t), Vitavaks 200 FF 34% WSC (Water soluble concentrate) (3.0 and 4.0 l/t), Baraka 60% P (Paste) (1.0 and 2.0 kg / t); Celest Top 312 FS SC (0.4 l/t) and then planted in pots.

A number of experiments were performed to study the effects of the treatment agents within 7 days, 15 days, and 25 days. Based on the experiments conducted, we can say that seed treatment is a highly effective method in disease prevention (Table 1, 2).

As can be seen from Table 1, with the effect of seed dressing agent Topsin M 70% w.p. at a rate of 1.5 kg / t, high biological efficiency was achieved after 15 days.

When seed dressing agent Topsin M 70% w.p. was applied against alternariosis in potatoes, 80.3% biological efficacy was observed after 15 days. It is obvious from Table 2, under the impact of seed dressing agent Vitavax 200 FF 34% aq.sus.c., at a rate of 4.0 l / t, high biological efficiency was achieved after 15 days. When the preparation Vitavaks 200 FF 34% aq.sus.c. was used against alternariosis in tomatoes, the biological efficacy was 82.6% after 15 days.

As far as we know, representatives of the genus *Alternaria* mainly cause plant leaf spot disease, and under the influence of the disease, the process of photosynthesis in plants is disrupted. As a result, when the plant is severely damaged, it leads to a decrease in yield, which is especially strong in the varieties which are not resistant to diseases.

Literature sources have reported a 78% decrease in tomato yield in India as a result of alternariosis. Studies in Germany have shown a 50% decrease in rape yield as a result of alternariosis [8]. Infestation of vegetables with alternariosis reduces the effectiveness of mechanization in harvesting. Representatives of the genus *Alternaria* are widespread in nature, developing in many plant species, some of them are saprotrophic, many are necrotrophic in parasitic conditions and have different nutritional characteristics and parasitic levels (from facultative parasitic to facultative saprotrophic).

The genus *Alternaria* representatives have been reported to be abundant in plant seeds. Such damage does not show a specific sign of disease in the seeds. It may not affect seed quantity and quality (1000 seed weight, germination). In some cases, it can adversely affect seed germination and quality [4].

During the development of diseased seeds, the existing fungal species in it reduce seed germination due to the release of toxins, such seed infection in some cases leads to damage and death of seedlings.

Maudy, Humpherson Jones, Evans et al., Coles, Wicks, Vakhrusheva presented data in their works about seed infection of carrot, flax and other farm crops from Brassicaceae family by representatives of the *Alternaria* genus [12, 11, 3]. Symptoms of alternariosis as a result of seed infection in Brassicaceae family representatives initially appear in the flower peduncle and flower buds, and seed formation may be reduced by 25–80% [5].



Table 1
The efficacy of seed protectant agents against alternariosis in potato plant
 ("Temir Kadam farm", Kibray district, Tashkent region, 2015)

Treatments	Applica- tion rate, l/t, kg/t	Number of seed- lings, pcs/m ²	Incidence of diseases, pieces	Severity of diseases, %	Biological efficiency, %	Number of seed- lings, pcs/m ²	Incidence of diseases, pieces	Severity of diseases, %	Biological efficiency, %	Number of seed- lings, pcs/m ²	Incidence of diseases, pieces	Severity of diseases, %	Biological efficiency, %
			7 days				15 days				25 days		
Raxil 60 FS 6% WSS	0,4	84	5	6,0	69,4	76	7	9,2	76,8	82	8	9,8	70,0
	0,5	76	3	3,9	72,1	78	5	6,4	79,1	84	7	8,3	71,3
Topsin-M 70% WP	1,0	87	6	6,9	68,1	79	5	6,3	79,1	82	8	9,8	70,0
	1,5	86	4	4,7	70,7	84	4	4,8	80,3	77	7	9,1	71,3
Maxim 2.5% SC (standard)	0,4	88	5	5,7	69,4	78	6	7,7	77,9	84	9	10,7	68,8
Not treated control	-	76	68	89,5	-	85	71	83,5	-	80	74	92,5	-
LSD ₀₅ =				1,7				1,9				1,1	

Table 2
The efficacy of seed protectant agents against alternariosis in tomato plant
 ("Nosirov Abdiraym" farm, Kibray district, Tashkent region, 2015)

Experiment options	Applica- tion rate, l/t, kg/t	Number of seed- lings, pcs/m ²	Incidence of diseases, pieces	Severity of diseases, %	Biological efficiency, %	Number of seed- lings, pcs/m ²	Incidence of diseases, pieces	Severity of diseases, %	Biological efficiency, %	Number of seed- lings, pcs/m ²	Incidence of diseases, pieces	Severity of diseases, %	Biological efficiency, %
			7 days				15 days				25 days		
Vitavaks 200 FF 34% WSC	3,0	86	8	9,3	73,4	78	3	3,8	81,5	84	6	7,1	73,6
	4,0	83	8	9,6	73,4	79	2	2,5	82,6	74	6	8,1	73,6
Baraka 60% P	1,0	85	10	11,8	71,0	84	7	8,3	76,8	81	11	13,6	67,4
	2,0	82	11	13,4	69,7	86	7	8,1	76,8	83	10	12,0	68,7
Celest Top 312 FS SC (standard)	0,4	80	10	12,5	71,0	81	10	12,3	73,2	82	13	15,9	65,0
Not treated control	-	83	71	85,5	-	85	69	81,2	-	81	73	90,1	-
LSD ₀₅ =				1,7				1,9				1,1	



According to Ya. Van der Plank, it is important to achieve a reduction in the population by reducing the source of the initial infection or slowing the rate of disease development in the prevention of the diseases [1].

Based on this, D.A.Roberts stated that it is important to plan protective measures considering the criteria of economic damage based on the stage of development of the disease [14].

In this regard, experts say that firstly, phytosanitary measures can reduce the sources of infection, i.e ensuring nonoccurrence of development of the pathogen during the growing season, and secondly, limiting the growth of pathogens during the growing season, for example, the use of protective fungicides.

CONCLUSION

When the preparation Vitavax 200 FF 34% WSC from seed dressing agents was applied at a rate of 4.0 l/t against tomato alternariosis, it showed a biological efficiency of 82.6%.

At the application of seed dressing agent Topsin M 70% WP at a consumption rate of 1.5 kg/t against potato alternariosis, it showed a biological efficiency of 80.3%.

Before sowing vegetable crops, the seed dressing with the application of preparations Vitavaks 200 FF 34% WSC at a rate of 4.0 l/t or Topsin M 70% WP at a rate of 1.5 kg/t is recommended against alternariosis diseases.

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HEAT CONDUCTED THROUGH FINS OF VARYING CROSS-SECTIONS VIA ROHIT TRANSFORM

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ABSTRACT

The conduction of heat takes place through the fins or spines from particle to particle due to temperature gradient in the direction of decreasing temperature. Heat is not lost equally by each element of the fin but is lost mostly near the base of the fin. Thus there would be wastage of the material if a uniform fin is used. These aspects demand the construction of the fins of varying cross-sections like triangular fin, hyperbolic fin and the parabolic fin. The triangular and parabolic fins of varying cross-sections are usually analyzed by ordinary calculus approach. The paper analyzes triangular and parabolic fins of varying cross-sections to find the rate of conduction of heat through them via the new integral transform called Rohit Transform.

INDEX TERMS: Triangular fin, Parabolic fin, Rohit Transform, Temperature Distribution, Rate of Conduction of Heat.

I. INTRODUCTION

The conduction of heat takes place through the fins or spines from particle to particle due to temperature gradient in the direction of decreasing temperature [1, 2]. Fins or spines are the extended surfaces which are mostly used in the devices which exchange heat [3-8] like computer central processing unit, power plants, radiators, heat sinks, etc. The triangular and parabolic fins of varying cross-sections are usually analyzed by ordinary calculus approach [4-7]. The paper analyzes triangular and parabolic fins of varying cross-sections to find the rate of conduction of heat through them via the new integral transform called Rohit Transform. This Transform has been put forward by the author Rohit Gupta in recent years [8] and is not widely known. The Rohit Transform has been applied in science and engineering to solve most of the initial value problems in science and engineering [9-16]. The Rohit Transform comes out to be very effective tool to find the temperature distribution

along a triangular fin, and a parabolic fin and hence the rate of conduction of heat through them.

Basics of Rohit Transform:

The Rohit Transform [10, 11, 12] of $g(y)$, $y \geq 0$ is defined as

$R\{g(y)\} = r^3 \int_0^\infty e^{-ry} g(y) dy = G(r)$, provided that the integral is convergent, where r may be a real or complex parameter.

The Rohit Transform of some derivatives [7, 13, 14, 15] of $g(y)$ is given by

$$R\{g'(y)\} = rR\{g(y)\} - r^3g(0)$$

Or

$$R\{g'(y)\} = rG(r) - r^3g(0),$$

$$R\{g''(y)\} = r^2G(r) - r^4g(0) - r^3g'(0),$$

$$R\{yg(y)\} = \frac{3}{r}R\{g(y)\} - \frac{d}{dr}R\{g(y)\},$$



$$R\{yg'(y)\} = 2R\{g(y)\} - r \frac{d}{dr} R\{g(y)\},$$

$$R\{yg''(y)\} = rR\{g(y)\} + r^3 g(0) - r^2 \frac{d}{dr} R\{g(y)\}$$

II. MATERIAL AND METHOD

Case I: Triangular Fin

The differential equation for analyzing a triangular fin [5, 8] (assuming that heat flow pertains to one - dimensional conduction of heat) is given by

$$\theta''(x) + \frac{1}{x} \theta'(x) - \frac{D^2}{x} \theta(x) = 0 \dots \dots (1),$$

where $D = \sqrt{\frac{2hL}{tk}}$, L is the length of the fin between the base at $x = L$ and the tip at $x = 0$, t is the thickness of the fin which increases uniformly from zero at the tip to t at the base, k is thermal conductivity, h is the coefficient of transfer of heat by convection, $\theta(x) = T(x) - T_s$, T_s is the temperature of the environment of the fin and T_0 is the temperature at the base $x = 0$ of the fin.

Multiplying both sides of (1) by x , we get

$$x \theta''(x) + \theta'(x) - D^2 \theta(x) = 0 \dots \dots (2)$$

The Rohit Transform [10, 11, 12, 13] of (2) gives

$$\left[-p^2 \frac{d}{dp} \theta(p) + p^3 \theta(0) + p \theta(p) \right] + p \theta(p) - p^3 \theta(0) - D^2 \theta(p) = 0 \dots \dots (3)$$

Put $\theta(0) = b$ and $\theta'(0) = a$, and simplifying and rearranging (3), we get

$$\frac{\theta'(p)}{\theta(p)} = \left[\frac{2}{p} - \frac{D^2}{p^2} \right] \dots \dots (4)$$

Integrating both sides of (4) w.r.t. p and simplifying, we get

$$\log_e \theta(p) = \left[2 \log_e p + D^2 \frac{1}{p} + \log_e c \right] \dots \dots (5)$$

Simplifying (5), we get

$$\theta(p) = cp^2 e^{\left(\frac{D^2}{p}\right)}$$

Expanding the exponential term, we get

$$\theta(p) = cp^2 \left[1 + D^2 \frac{1}{p} + \frac{\left(\frac{D^2}{p}\right)^2}{2!} + \frac{\left(\frac{D^2}{p}\right)^3}{3!} + \frac{\left(\frac{D^2}{p}\right)^4}{4!} \dots \dots \right]$$

or

$$\theta(p) = c \left[p^2 + D^2 p + \frac{D^4}{2!} + \frac{D^6}{3!} \frac{1}{p} + \frac{D^8}{4!} \frac{1}{p^2} \dots \dots \right] \dots \dots (6)$$

The inverse Rohit Transform [8] of (6) provides

$$\theta(x) = c \left[1 + D^2 x + \frac{D^4 x^2}{2! 2!} + \frac{D^6 x^3}{3! 3!} + \frac{D^8 x^4}{4! 4!} \dots \right]$$

or

$$\theta(x) = c \left[1 + \frac{1}{4} (2D\sqrt{x})^2 + \frac{1}{2! 2!} \left(\frac{2D\sqrt{x}}{2}\right)^4 + \frac{1}{3! 3!} \left(\frac{2D\sqrt{x}}{2}\right)^6 + \frac{1}{4! 4!} \left(\frac{2D\sqrt{x}}{2}\right)^8 \dots \right] \dots \dots (7)$$

The modified Bessel function [17] of the first kind of order n and its first order derivative are given by

$$I_n(z) = \sum_{r=0}^{\infty} \frac{1}{r!(n+r)!} \left(\frac{z}{2}\right)^{n+2r} \dots \dots (8)$$

$$\text{Also } \frac{d}{dx} (I_n(z)) = I_{n+1}(z) \frac{d}{dx} (z) \dots \dots (9)$$

Put $z = 2D\sqrt{x}$ and $n = 0$, we get

$$I_0(2D\sqrt{x}) = \sum_{r=0}^{\infty} \frac{1}{r! r!} \left(\frac{2D\sqrt{x}}{2}\right)^{2r}$$

Or

$$I_0(2D\sqrt{x}) = 1 + \frac{\left(\frac{2D\sqrt{x}}{2}\right)^2}{2! 2!} + \frac{1}{2! 2!} \left(\frac{2D\sqrt{x}}{2}\right)^4 + \frac{1}{3! 3!} \left(\frac{2D\sqrt{x}}{2}\right)^6 + \frac{1}{4! 4!} \left(\frac{2D\sqrt{x}}{2}\right)^8 \dots \dots$$

Hence (7) can be rewritten as

$$\theta(x) = c I_0(2D\sqrt{x}) \dots \dots (10)$$

To find the constant c , at $x = L$, $\theta(L) = \theta_0$, therefore, $c = \frac{\theta_0}{I_0(2D\sqrt{L})}$

Hence (10) can be written as

$$\theta(x) = \frac{\theta_0}{I_0(2D\sqrt{L})} I_0(2D\sqrt{x}) \dots \dots (11)$$

The equation (11) gives the temperature distribution along the length of the triangular fin.



The heat conducted through the triangular is given by the Fourier's Law [18, 19, 20] of heat conduction as

$$H = kA (\Theta'(x))_{x=L} = kbt (\Theta'(x))_{x=L}$$

Using (11), we get

$$H = kbt \frac{\Theta_0}{l_0(2D\sqrt{L})} I_1(2D\sqrt{L}) \left(\frac{d}{dx} (2D\sqrt{x}) \right)_{x=L}$$

On simplifying, we get

$$H = kbtD \frac{\Theta_0}{\sqrt{L} l_0(2D\sqrt{L})} I_1(2D\sqrt{L}) \dots (12)$$

Put the value of D, we get

$$H = b\sqrt{2hkt} \frac{\Theta_0}{l_0(2D\sqrt{L})} I_1(2D\sqrt{L}) \dots (13)$$

This equation (13) gives the expression for the rate of conduction of heat through the triangular fin.

Case II: Parabolic fin

The differential equation for analyzing a parabolic fin [5, 9] (assuming that heat flow pertains to one dimensional conduction of heat) is given by

$$x^2 \theta''(x) + 2x\theta'(x) - M^2 l^2 \theta(x) = 0 \dots (14),$$

where $M = \sqrt{\frac{2h}{tk}}$, l is the length of the fin between the base at $x = l$ and the tip at $x = 0$, t is the thickness of the fin which increases uniformly from zero at the tip to t at the base, k is thermal conductivity, h is the coefficient of transfer of heat by convection, $\theta(x) = T(x) - T_s$, T_s is the temperature of the environment of the fin and T_0 is the temperature at the base $x = 0$ of the fin.

Substituting $x = e^z$, the equation (14) can be rewritten into a form:

$$\theta''(x) + \theta'(x) - M^2 l^2 \theta(x) = 0 \dots (15) \quad \theta' \equiv \frac{d}{dz}$$

The Rohit Transform [13, 14, 15, 16] of (15) gives

$$[p^2 \theta(p) - p^4 \theta(0) - p^3 \theta'(0)] + p \theta(p) - p^3 \theta(0) - M^2 l^2 \theta(p) = 0 \dots (16)$$

Put $\theta(0) = P$ and $\theta'(0) = Q$, and simplifying and rearranging (16), we get

$$\theta(p) = \frac{p^3(p+1)P + p^3Q}{p^2 + p - M^2 l^2}$$

Or

$$\theta(p) = \frac{p^3[pP + (P+Q)]}{(p-c_1)(p+c_2)} \dots (17)$$

$$\text{where } c_1 = \frac{-1+(1+4M^2l^2)^{1/2}}{2} \text{ and } c_2 = \frac{-1-(1+4M^2l^2)^{1/2}}{2}.$$

This equation (17) can be rewritten as

$$\theta(p) = \frac{c_1 P + P + Q}{c_1 + c_2} \frac{p^3}{(p-c_1)} + \frac{c_2 P + P + Q}{c_2 - c_1} \frac{p^3}{(p+c_2)} \dots (18)$$

The inverse Rohit Transform [8] of (18) provides

$$\Theta(x) = \frac{c_1 P + P + Q}{c_1 + c_2} e^{c_1 z} + \frac{c_2 P + P + Q}{c_2 - c_1} e^{-c_2 z}$$

Or

$$\Theta(x) = \frac{c_1 P + P + Q}{c_1 + c_2} x^{c_1} + \frac{c_2 P + P + Q}{c_2 - c_1} x^{-c_2} \dots (19)$$

As

$\Theta(0)$ is finite [4-7], therefore, the term $\frac{c_2 P + P + Q}{c_2 - c_1} x^{-c_2}$ is equated to zero

i.e. $\frac{c_2 P + P + Q}{c_2 - c_1} x^{-c_2} = 0$, which gives $c_2 P + P + Q = 0$ or $Q = -(c_2 P + P)$.

From (19), we have

$$\Theta(x) = \frac{c_1 - c_2}{c_1 + c_2} P x^{c_1} \dots (20)$$

To find the constant P, at $x = l$, $\Theta(l) = \Theta_0$, therefore from (20), $P = \frac{c_1 + c_2}{c_1 - c_2} \Theta_0 l^{-c_1}$

Hence (20) can be rewritten as

$$\Theta(x) = \Theta_0 l^{-c_1} x^{c_1}$$

Or

$$\Theta(x) = \Theta_0 (x/l)^{c_1} \dots (21)$$

The equation (21) gives the temperature distribution along the length of the parabolic fin.

The heat conducted through the parabolic fin is given by the Fourier's Law of heat conduction [19, 20] as

$$H = kA (\Theta'(x))_{x=l} = kbt (\Theta'(x))_{x=l}$$



Using equation (21), we get

$$H = kbt \Theta_0 c_1 / l$$

Or

$$H = kbt \Theta_0 \frac{-1+(1+4M^2l^2)^{1/2}}{2l} \dots (22)$$

This equation (22) gives the expression for the rate of conduction of heat through the parabolic fin.

III. RESULT AND CONCLUSION

We have found the temperature distribution along the lengths of the triangular fin as well as parabolic fin and hence the rate of conduction of heat through them via Rohit Transform means. It is found that with the increase in the length of the triangular fin or parabolic fin, temperature increases and hence the rate of conduction of heat at any cross-section of the triangular fin or parabolic fin increases. The method has come out to be a very effective tool to find temperature distribution along the lengths of the triangular fin as well as parabolic fin and hence the rate of conduction of heat through them.

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THE VALUE OF THE COLLATERAL IN THE EXCLUSIVE RIGHT AND THE PROBLEMS OF LEGAL SUPPORT OF THE CREDITOR'S CLAIMS TO IT

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Doctor of Philosophy in Legal Sciences (PhD)

СТОИМОСТЬ ЗАЛОГА В ИСКЛЮЧИТЕЛЬНОМ ПРАВЕ И ПРОБЛЕМЫ ПРАВОВОГО ОБЕСПЕЧЕНИЯ ТРЕБОВАНИЯ КРЕДИТОРА К НЕМУ

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Аннотация

одно из условий, обеспечивающих развитие исключительных прав залога, определяется тем, что лица рассматривают интеллектуальную собственность как действительно ценную собственность. Именно за счет правильного и целевого использования нематериальных объектов модернизируются экономические отношения. В статье анализируются некоторые аспекты этих договорных отношений в рамках настоящего исследования. В частности, исследование оценки товарного знака, законодательство и практика зарубежных стран в области регистрации права залога, условий и методов осуществления мониторинга в отношении товарного знака в качестве залога, основания взыскания и механизма принудительного исполнения относительно товарных знаков. По результатам исследования будут разработаны рекомендации и предложения по применению права залога.

Ключевые слова: кредитор, должник, товарный знак, исключительное право, оценка, мониторинг, регистрация, Германия, США, Великобритания, ответственность.

В настоящее время стратегическими и наиболее подходящими клиентами-заемщиками для банков (долгосрочными потенциальными партнерами) являются компании со своими уникальными технологиями и методами. В условиях современной экономики любое производство, способное создавать и реализовывать инновационные идеи, способно конкурировать на рынке.

Высокий уровень рыночной конкуренции в настоящее время, отражается, прежде всего, в глобализации экономики, концентрации частной собственности и производства, а также в слияниях и поглощениях компаний. Компании обеспечивают свое конкурентное преимущество,

обладая уникальными методами, технологиями, исследовательскими разработками, изобретениями, полезными моделями, промышленными образцами, товарными знаками, ноу-хау, которые относятся к категории интеллектуальной собственности.

Стоимость интеллектуальной собственности может быть выше стоимости собственного оборудования предприятия, сырья, текущих запасов готовой продукции, а в некоторых случаях равна стоимости компании. Во многих странах с развитой инновационной экономикой стоимость компаний может зависеть от стоимости нематериальных активов, которые



они предлагают в качестве обеспечения по кредитным обязательствам.

Право залога на исключительные и другие объекты интеллектуальной собственности - это новые правовые отношения для законодательства Узбекистана, которые ставят достаточные теоретические и практические вопросы при применении закона. Основной задачей настоящего исследования – является разработка обоснованных предложений по изучению нематериальных активов в применении исключительных прав по залогу, обеспечение стабильности стоимости залога, страхование исключительных прав, порядок и методы контроля залогодателем стоимости залога, взыскание и принудительное исполнение залога.

Требования договора о залоге исключительных прав обычно регулируются на основании правил, установленных Гражданским кодексом Республики Узбекистан и Законом о залоге. По общему мнению, предметом договора залога исключительных прав является не результат интеллектуальной деятельности или средство персонализации, а применимое право к нему. Стоимость вещи, юридически гарантированной по договору залога (товарный знак, название компании, доменное имя, знак обслуживания и т.д.), должна быть соразмерна с исполнением обеспеченного залогом обязательства. То есть стоимость залога должна быть оценена, а залогодатель должен иметь возможность беспрепятственного взыскания в случае неисполнения обязательств залогодателя. Условия и порядок уступки прав по обращению взыскания на предмет залога осуществляются по взаимному соглашению сторон.

Ответственность должника за неисполнение обязательства определяется на основании факта регистрации права залога. Залог исключительных прав должен пройти государственную регистрацию и быть оформлен в письменной форме.

Практически во всех странах регистрация залога осуществляется через ведомства интеллектуальной собственности [1]. В частности, в Узбекистане залог исключительных прав регистрируется в Агентстве интеллектуальной собственности. Однако, в исключительных случаях права на незарегистрированные товарные знаки также могут быть переданы в залог. Это положение закреплено в Законе о частной собственности Великобритании 1994 года. Согласно закону, при заключении договора ипотеки, залогодатель должен гарантировать, что право интеллектуальной собственности принадлежит только ее владельцу, что залог защищен от

внешних рисков и что это право не подлежит взысканию за долги [2]. Кроме того, необходимо указать согласие залогодателя на передачу незарегистрированных прав интеллектуальной собственности третьему лицу в случае неисполнения обязательства, указанного в договоре. Последующая передача прав без этого согласия осуществляется только в судебном порядке [3].

Согласно п. 395 английского Закона о юридических лицах 1985 г. все юридические лица Великобритании обязаны регистрировать залог любых объектов, находящихся в их собственности (залог земельных участков, гудвилл, обязательственных прав, а также интеллектуальных прав в любой из предусмотренных английскими законами форм – fixedcharge или floatingcharge), в Палате по регистрации юридических лиц (Companies House) [4].

Наряду с Реестром заложенного имущества юридических лиц в Великобритании существуют так называемые специальные залоговые реестры (Specialistregistries) для некоторых видов имущества (земельные участки, морские, воздушные суда, а также зарегистрированные патенты, товарные знаки и полезные модели). В отношении интеллектуальных прав таким реестром является Реестр Службы по интеллектуальной собственности (Intellectual Property Office).

Такая двойная регистрация залога интеллектуальных объектов специалистами расценивается как серьезная проблема для право применения. Предлагается создать единый реестр на основе реестра залога имущества юридических лиц, в котором необходимо указывать все данные о заложенных правах на объекты интеллектуальной собственности [5].

В США регистрация залога исключительных прав осуществляется в Службе по регистрации патентов и товарных знаков США (the United States Patent and Trademark Office), при этом не имеет значения, зарегистрированы товарные знаки или нет, залог права на товарный знак обязателен для государственной регистрации.

В США также имеется удвоение регистрации залога исключительных прав, так как стороны в отношении одного и того же объекта могут зарегистрировать залог в федеральном реестре либо реестре штата. В связи с этим для большинства специалистов является спорным вопрос о приоритете законодательства о регистрации. Для решения данного вопроса американские специалисты предлагают регистрировать залог исключительного права



одновременно путем подачи заявления Секретарю штата и в Службу по регистрации патентов и товарных знаков США [6].

Согласно немецкому Закону о товарных знаках договор залога интеллектуального права на товарный знак может быть зарегистрирован в государственном реестре Органа по товарным знакам и патентам (Deutsches Patentund Markenamt) по соглашению сторон.

Таким образом, действительность договора залога не связывается с фактом его регистрации. Основной практической целью регистрации договора залога исключительного права по смыслу законодательства Германии является упрощенный порядок последующей передачи права при неисполнении правообладателем основного обязательства, который называется «добросовестным» приобретением права [7].

Однако гарантия исполнения обязательства должником не вытекает из условий, связанных с установлением его подлинности. Предмет залога должен быть в первую очередь сбалансирован с обязательством, полученным должником. Для этого в договоре может быть установлена компетенция залогодержателя требовать от залогодателя контроля за реализацией залоговых исключительных прав.

Важным условием договора залога исключительных прав является оценка предмета залога и его устойчивость гарантированы должником. Определение стоимости предмета залога должно быть определено по соглашению сторон. В связи с этим, соглашаясь с мнением О. Окюлова, конкретные критерии денежной оценки интеллектуальной собственности не ясны. Рынок - главный арбитр стоимости. Однако на рынке интеллектуальной собственности и продавец - собственник, и покупатель - потребитель должны исходить из научных и экономических критериев, а не с их собственной субъективной точки зрения. По мнению О. Окюлова критерием оценки интеллектуальной собственности является:

- стоимость затраты создание интеллектуальное собственности;

- способность правовой защиты объектов интеллектуальной собственности (патентован, зарегистрирован);

- эффект от применения объекта интеллектуальной собственности (включая качество товара, повышение конкурентоспособности, экономия затрат и т.п.);

- рыночная стоимость аналогичных объектов того же типа;

- социальная выгода, которая может быть получена при использовании, применении

объекта интеллектуальной собственности (экологические, эргонометрический и т.п.);

- дополнительные расходы, связанные с применением объекта интеллектуальной собственности, в том числе премии, подлежащие выплате авторам [8]. Данные критерии оценки рассматриваются сторонами договора залога отдельно и устанавливаются на договорной основе.

В отличие от Узбекистана в Российской Федерации Министерством экономического развития 22 июня 2015 года принят Федеральный стандарт «Оценка интеллектуальной собственности и нематериальных активов». Данный стандарт применяется в отношении оценки нематериальных активов, не имеющих материально-вещного характера, которые по своей экономической эффективности приносят его владельцу материальную выгоду. В частности, при оценке товарного знака в качестве предмета залога также действуют правила данного стандарта.

При оценке в Российской Федерации как предмета залога исключительного права на товарный знак по стандарту «Оценка интеллектуальной собственности и нематериальных активов» предусматриваются:

- анализ рынка оценки товарного знака и рынка производства и реализации продукции с его использованием, а также других внешних факторов, влияющих на стоимость товарного знака;

- анализ экономического состояния региона и других факторов, влияющих на рынок оценки товарного знака;

- экономическая эффективность при оценке товарного знака, преимущество на право пользования;

- состояние текущего использования товарного знака, анализ показателей производства и реализации продукции с его использованием в будущем. Также в дополнение к этим критериям также можно включить:

- объем правовой охраны товарного знака, срок, круг охраняемых территорий, режим случая ограничения использования исключительных прав в отношении товарного знака;

- объем оценки права на товарный знак;

- совокупный комплекс объектов, входящих в состав оценки товарного знака.

Оценка товарного знака в качестве предмета залога по стандарту Российской Федерации «Оценка интеллектуальной собственности и нематериальных активов» осуществляется по трем подходам:



- 1) доходный подход;
- 2) сравнительный подход;
- 3) затратный подход.

Использование доходного подхода осуществляется при условии возможности получения доходов (выгод) от использования товарного знака. Доходом от использования товарного знака является разница за определенный период времени между денежными поступлениями и денежными выплатами (далее - денежный поток), получаемая правообладателем за предоставленное право использования товарного знака.

Доходный подход к оценке товарных знаков промышленных предприятий основан на расчете экономических выгод, связанных с получением прибыли за счет рассматриваемых нематериальных активов, не отраженных на балансе предприятия и обеспечивающих прибыль на активы или собственный капитал выше среднеотраслевого уровня [9].

В доходном подходе основными формами денежных поступлений являются платежи за предоставленное право использования товарного знака. Исходя из этого основными формами выгод от товарного знака являются экономия затрат на производство и реализацию продукции (работ, услуг) и/или на инвестиции в основные и оборотные средства, в том числе фактическое снижение затрат, отсутствие затрат на получение права использования товарного знака (например, отсутствие лицензионных платежей, отсутствие необходимости выделения из прибыли наиболее вероятной доли лицензиара); увеличение цены единицы выпускаемой продукции (работ, услуг); увеличение физического объема продаж выпускаемой продукции (работ, услуг); снижение выплат налогов и (или) иных обязательных платежей; сокращение платежей в счет обслуживания долга; снижение риска получения денежного потока от использования объекта оценки; улучшение временной структуры денежного потока от использования объекта оценки; различные комбинации указанных форм.

В доходном подходе определение рыночной стоимости товарного знака, основанное на дисконтировании, включает основные процедуры как определение величины и временной структуры денежных потоков, создаваемых использованием товарного знака; определение величины соответствующей ставки дисконтирования; расчет рыночной стоимости товарного знака путем дисконтирования всех денежных потоков, связанных с использованием товарного знака.

Использование сравнительного подхода осуществляется при наличии достоверной и

доступной информации о ценах аналогов объекта оценки и действительных условиях сделок с ними. При этом может использоваться информация о ценах сделок, предложений и спроса. Определение рыночной стоимости товарного знака с использованием сравнительного подхода осуществляется путем корректировки цен аналогов, сглаживающей их отличие от оцениваемого товарного знака. Определение рыночной стоимости с использованием сравнительного подхода включает основные процедуры как определение элементов, по которым осуществляется сравнение товарного знака оценки с аналогами; определение по каждому из элементов сравнения характера и степени отличий каждого аналога от оцениваемой товарного знака; определение по каждому из элементов сравнения корректировок цен аналогов, соответствующих характеру и степени отличий каждого аналога от оцениваемой товарного знака; корректировка по каждому из элементов сравнения цен каждого аналога, сглаживающая их отличия от оцениваемой товарного знака; расчет рыночной стоимости товарного знака путем обоснованного обобщения скорректированных цен аналогов.

К элементам сравнения относятся факторы стоимости оценки товарного знака (факторы, изменение которых влияет на рыночную стоимость оценки товарного знака) и сложившиеся на рынке характеристики сделок с товарного знака. Наиболее важными элементами сравнения, как правило, являются объем оцениваемых имущественных прав на товарный знак; изменение цен на товарный знак за период с даты заключения сделки с аналогом до даты проведения оценки; отрасль, в которой были или будут использованы товарные знаки; территория, на которую распространяется действие предоставляемых прав; физические, функциональные, технологические, экономические характеристики аналогичных с оцениваемым объектом; спрос на продукцию, которая может производиться или реализовываться с использованием товарного знака; наличие конкурирующих предложений; относительный объем реализации продукции (работ, услуг), произведенной с использованием товарного знака; срок полезного использования товарного знака; уровень затрат на освоение товарного знака; условия платежа при совершении сделок с товарной знака; обстоятельства совершения сделок с товарного знака.

Затратный подход к оценке товарного знака на определении затрат, необходимых для восстановления или замещения объекта оценки с учетом его износа. Определение рыночной



стоимости с использованием затратного подхода включает основные процедуры, как определение суммы затрат на создание нового объекта, аналогичного объекту оценки; определение величины износа объекта оценки по отношению к новому аналогичному объекту оценки; расчет рыночной стоимости объекта оценки путем вычитания из суммы затрат на создание нового объекта, аналогичного объекту оценки, величины износа объекта оценки.

Методы затратного подхода достаточно универсальны, то есть практически всегда могут быть применены на практике. Основное их достоинство – достаточно точное определение совокупных затрат [10].

В немецком законодательстве существует три основных метода экономической оценки интеллектуальных прав. Рыночный метод (Vergleichspreismethode) состоит в том, что кредитор определяет стоимость интеллектуального права путем сравнения со стоимостью данного права в аналогичных сделках. По другому методу (Lizenzgebührenvergleich) за стоимость интеллектуального права принимается стоимость использования этого права, которую оплачивает правообладателю третье лицо по лицензионному договору. Согласно третьему методу оценки интеллектуального права (Ergebnisbeitragsmethode), в Германии оценивается вклад интеллектуального права в деятельность организации, т.е. несколько возросла стоимость предприятия благодаря использованию интеллектуального права [11].

Модели и методы оценки стоимости бренда, применяемые в зарубежной практике, могут быть систематизированы в две группы – это методы экономического прогнозирования и методы непосредственно оценки стоимости бренда. Методы экономического прогнозирования основаны на использовании следующих основных инструментов:

- 1) многофакторный анализ развития бренда на разных этапах жизненного цикла;
- 2) специальные программы компьютерного моделирования.

В результате агрегирования всех показателей, участвующих в капитализации (характеризующих ценность и качественное состояние капитала бренда), формируется своеобразный индекс развития бренда (BrandDevelopmentIndex, BDI), используемый многими компаниями в стратегическом управлении. Наибольшее развитие за рубежом получили следующие модели экономического прогнозирования ценности бренда:

- модель Brand Equity Ten Дэвида Аакера;

- модель Brand Dynamics;
- модель Brand Assets Valuator;
- конверсионная модель компании Taylor Nelson Sofres (TNS);
- метод Brand Z;
- метод Brand Capital;
- метод Imager Power [12].

Модели Brand Equity Ten и Brand Assets Valuator отражают подход, называемый Brand Equity, основанный на понятиях «активы и пассивы бренда», которые должны быть связаны с именем и/или символами бренда. Изменение имени или символов бренда, по мнению сторонников данного подхода, затрагивает некоторые или даже все активы и обязательства, которые или переходят (частично или полностью) к новым имени и символам, или уничтожаются.

Модель Brand Assets Valuator (BAV), разработанная компанией Young & Rubican, основана на мультикритериальной оценке стратегического развития бренда. Данная модель описывает размещение на рынке какого-либо бренда, независимо от товарной категории, страны производителя и «возраста», на основе четырех основных критериев, которые тесно связаны с возможностью обеспечить рост прибыли компании и, соответственно, повысить ценность продукта для владельца.

Конверсионная модель компании (conversion model) компании Taylor Nelson Sofres (TNS) основана на выявлении потребительских предпочтений по четырем параметрам:

- 1) соответствие бренда потребностям, или степень удовлетворенности брендом (NeedsFit);
- 2) вовлеченность потребителя в принятие решения о покупке, или насколько существен выбор марки (Involvement);
- 3) отношение к альтернативам, или насколько привлекательны для потребителя конкурирующие бренды (DispositiontoAlternatives);
- 4) противоречивость выбора, или насколько потребители «разрываются» между привлекательностью аналогичных брендов в категории (Ambivalence).

Метод BrandZ разработан специалистами группы компаний WPP Group и также служит для измерения силы и потенциала бренда. Он основан на глубинных интервью с респондентами, изучение ответов которых позволяет определить основные причины лояльности к бренду, а также отказа от его приобретения. Полученные данные используются для корректировки стратегий брендов в портфеле компании, в том числе коммуникационных.

Метод Brand Capital также основан на глубинных интервью с респондентами, на основе которых оценивается отношение потребителей к бренду и его способность усиливать взаимоотношения



между потребительскими аудиториями, своеобразное «притяжение» бренда (brandmagnetism). Метод позволяет выявить отношение потребителей к бренду как лидеру категории, рост его популярности и степень уникальности в категории и служит основой для принятия стратегических решений [13].

Метод ImagePower предложен компанией LandorAssociates, позволяет выявить параметры, определяющие силу бренда, в частности такие, как функциональность бренда, культура бренда, позиционирование бренда, атрибуты бренда.

В зарубежной практике значение мониторинга кредитного риска в последнее время постоянно возрастает в связи с увеличением концентрации кредитных рисков [14].

Мониторинг залога — это комплекс мероприятий, направленных на обеспечение контроля за количественными, качественными и стоимостными характеристиками предмета залога, а также за его правовой принадлежностью, условиями его хранения и содержания с целью минимизации залоговых рисков.

Основной целью мониторинга залога исключительного права на товарный знак является определение соответствия параметров залогового имущества, условий его содержания и эксплуатации тем требованиям, которые указаны в договоре о залоге. Основопологающей задачей мониторинга залогового имущества является своевременное выявление каких-либо фактов или предпосылок снижения количественных и качественных параметров товарного знака, а также иных нарушений условий договора о залоге, с целью формирования комплекса мероприятий по защите интересов банка в области залогового обеспечения кредита.

Мониторинг залога исключительных прав осуществляется независимо от того, установлен или не установлен договором по требованию залогодателя. В ходе мониторинга будут изучены требования внутренних потребителей и внешних потребителей к товарному знаку, являющемуся предметом залога. По результатам изучения требования залогополучателем уточняется, что стоимость товарного знака на рынке падает или увеличивается в обратную сторону. По результатам мониторинга, если стоимость предмета залога падает, кредитор вправе требовать от должника дополнительного залога иного имущества или расторгнуть договор.

Мониторинг проводится на постоянной основе или периодически залогополучателем или по соглашению третьими лицами. Не требуется предупредить залогодателя о проведении мониторинга. На наш взгляд, при мониторинге

товарного знака, в котором находится предмет залога, залогодержатель должен обратить внимание на следующие аспекты:

- состояние повышения или снижения качества продукции под товарным знаком;
- потребность потребителей на товарные знаки;
- затраты на реализацию мер (рекламы), направленных на повышение имиджа товарного знака;
- обновление техники и технологии, используемые в производстве продукции;
- круг лиц, использующих товарный знак по лицензионному договору;
- сравнение с качеством продукции владельца товарного знака идентичности продукции лиц, производящих продукцию с использованием того же товарного знака;
- снижение или повышение цены продукции;
- объем экспорта продукции под товарным знаком;
- увеличение или уменьшение продукции-конкурента на продукцию под товарным знаком;
- расширение или уменьшение территории реализации продукции под товарным знаком и др.

По результатам мониторинга залогодатель приобретает право требования к залогополучателю, так как залогодержатель должен в первую очередь обезопасить себя от угрозы причинения вреда. Это напрямую связано с предметом залога. Именно мониторинг способствует выявлению негативных факторов, влияющих на падение стоимости предмета залога.

По результатам мониторинга заложник вправе требовать от заложника предотвращения выявленных недостатков. А должник обязан выполнить эти требования, если это возможно. Однако некоторые требования залогодержателя не должны выполняться залогодателем, если эти требования не повлияют на снижение стоимости предмета залога. К примеру, если бренд не рекламируется и его репутация на рынке стабильна, товар может храниться как товар без изменения технологии производства, объема экспорта из других источников, даже если объем экспорта сокращается, служит для поддержания стоимости залога и т.д.

По договору залога должник должен выполнить обязательства по договору перед кредитором. Стоимость предмета залога служит гарантией обеспечения залога. Взыскание на заложенное имущество для удовлетворения требований залогодержателя (кредитора) может



быть обращено в случае неисполнения или ненадлежащего исполнения должником обеспеченного залогом обязательства по обстоятельствам, за которые он отвечает (статья 26 Закона о залоге).

Соответственно, в случае неисполнения должником (залогодателем) принятого на себя обязательства, залогодержатель вправе удовлетворить денежное требование посредством реализации исключительных прав. Таким образом, происходит реализация имущества, залогодержатель получает возможность исполнения обязательства, оставшаяся сумма после реализации имущества передается залогодателю. Стоит отметить, что залогодержатель наделен преимущественным правом удовлетворения требований перед иными кредиторами.

Отсутствие единого правила исчисления ущерба, причиненного установлению гражданско-правовой ответственности за ущерб, причиненный исключительно правообладателю, и взыскания его с должника на счет кредитора вызывает некоторые проблемы правоприменительной практики. О. Окюлов оценивает данную ситуацию, в случае, если оценить объект так сложно, то можно представить, насколько сложно подсчитать ущерб, причиненный в результате правонарушения, связанного упущенной выгодой [15].

В настоящее время, с целью более эффективного применения залога исключительных прав как способа обеспечения обязательств, требуется более детальная разработка целого ряда вопросов. К ним можно отнести отсутствие детальной регламентации процедуры реализации предмета залога, то есть, исключительных прав. На сегодняшний день, действует общий порядок, применяющийся к реализации иного имущества (торги). При отсутствии четкого законодательного регулирования в юридической литературе высказывались противоположные точки зрения в отношении договора, которые должны быть оформлены в форме обращения взыскания на заложенное исключительное право и соответственно переход указанного права залогодержателю. При этом большинство авторов отрицали возможности применения в данном случае конструкции договора купли-продажи. Так, например, А.В. Латынцев указывал, что «по результату публичных торгов заключается договор уступки права требования, а не договор купли-продажи» [16]. В.В. Ветринской отмечал, что «применительно к залому прав «товарность» означает возможность реализации залога путем

уступки соответствующего требования» [17]. Действительно, имущественные исключительные права не могут выступать объектом договора купли-продажи, направленного на передачу правомочий собственности, поскольку указанные правомочия не применимы в отношении имущественных прав. Как верно отмечал Е.Н. Васильева, «исключительное право в корне отличается от других видов имущественных прав, которые могут быть предметом залога. Оно является исключительным правом, а не относительным правом обязательственного характера, каким является, в частности, право лицензиата, т.е. содержит права требования к конкретному должнику». В этой связи переход к другому лицу, в том числе в порядке обращения взыскания на него как на предмет залога, не может осуществляться на основании сессионного соглашения [18].

Таким образом, в результате обращения взыскания на заложенное исключительное право, его реализация должна быть осуществлена путем заключения договора об отчуждении исключительного права. При этом залогодатель должен совершить все необходимые юридические и фактические действия по передаче или предоставлению права залогодержателю или иному лицу, в том числе регистрацию соответствующего договора.

Заключение.

В период развития современных экономических отношений конфликт взаимных интересов происходит больше в виртуальном мире, чем в материальном. Реализация прав на нематериальные объекты носит несколько более сложный характер, чем материальные. В частности, реализация права залогодателем и залогодержателем в отношении залога исключительных прав отличается от реализации права на обычное материальное имущество. В рамках этих регулируемых отношений необходимо оценивать предмет залога, обращение взыскания на предмет залога, одновременно пользование предметом залога залогодержателем, залогодателем и третьими лицами и т.п. Каждое отношение имеет специфический регулируемый характер.

До настоящего момента в Узбекистане не применен залог исключительных прав. Однако в практике иностранных государств значительно развиты гражданско-правовые отношения данного типа.

Исходя из вышеупомянутого исследования, можно выдвинуть следующие предложения по совершенствованию отношений применения залога исключительных прав:



1. Оценка товарного знака при залоге исключительных прав должна основываться в соответствии с рыночными требованиями. Основные моменты, которые следует учитывать в данном процессе:

- соотношение между стоимостью товарного знака в случае залога и стоимостью следующей оценки;

- затраченные денежные средства на проделанную залогодателем работу по повышению репутации бренда;

- разница между продукцией с товарным знаком и другим аналогичным товаром на рынке;

- соответствие качества продукции актуальным требованиям;

- производственный объем продукта под торговым знаком и др.

2. Залогодатель не должен препятствовать обращению взыскания на предмет залога. В случае неисполнения залогодателем залогового обязательства переход товарного знака на имя залогодержателя или третьего лица осуществляется в форме передачи прав, а не на основании договора купли-продажи.

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A STUDY ON CUSTOMER SATISFICATION TOWARDS DIO SCOOTY (HONDA) WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Customer satisfaction is defined as an overall evaluation based on the total purchase and consumption experience with the good or service over time. The data was collected by issuing questionnaire for 120 respondents. The respondents are satisfied with the mileage. The respondents suggested that the dealer and company should ensure availability of flagship brand Honda Dio. Efforts have to be taken to ensure no stock outs for honda dio , unicorn and shine.

KEY WORDS: *Mileage, perception, service quality*

INTRODUCTION

Customer satisfaction has been one of the top tools for a successful business. Customer satisfaction is defined as an overall evaluation based on the total purchase and consumption experience with the good or service over time. With marketing customer satisfaction also come along with it which means it ascertains of the customer on how the good and service are being facilitated by the companies. Customer satisfaction is influenced by specific product or service features and perception of quality, satisfaction is also influenced by customer's emotional responses, their attributions nether perception of equity.

STATEMENT OF THE PROBLEM

Customer Satisfaction is based on the Expectation of the customers who purchase and use the Dio Scooty manufactured by Honda. To offer essential and customized products and services, it is essential to understand the expectations and perceptions of the customers with regard to the quality of the product and

services offered by Honda. This study would help Honda to understand the real expectation and satisfaction level of the consumer. It makes easy access of their spare parts which is unique in nature and service station follow their promise for future reference.

SCOPE OF THE STUDY

The study is mainly focused on the expectation and satisfaction level of the customers from the product 'Dio scooty' and services offered by Honda. Every aspect related to the same such as product price availability, design, features, safety, service facilities, quality of staff, etc. and specifically focused towards the product and services provided in Coimbatore city. Besides, an attempt has been made to elicit the feelings and suggestions of the customers to improve the product 'Dio scootey' and services offered by Honda therein.

**OBJECTIVES OF THE STUDY**

- ❖ To analyse the customer satisfaction level of Dio scooty.
- ❖ To identify the factors influencing the product and service quality of Dio scooty.
- ❖ To evaluate the customer satisfaction of the various services offered by Dio scooty.

RESEARCH METHODOLOGY

The data used in the study are primary as well as secondary data. The method which is used to collect the data for this study is issuing well structured questionnaire to 120 respondents by adopting convenient sampling method. Percentage analysis, Ranking analysis and Likert scale method were used to analyse the data.

REVIEW OF LITERATURE

Padmasani, Remya. V, M. Ishwarya (2014) in their study, “Brand preference towards scooters among women consumers in Coimbatore City” The purpose of this study is to ascertain the key factors influencing the

women respondents brand preference in selection of their scooter. The result of Exploratory Factor Analysis revealed five factors namely Comfort, Efficiency, Affordability, Familiarity and Quality of Service as the determinants of preference.

Kannusamy (2010) in his study, “Brand Preference of Two Wheelers: Problems and Satisfaction Level of Consumers” made an attempt to study Brand preference of two wheelers, problems and satisfaction level of consumers and identified that consumers prefer their favourable brand in two wheeler on the basis of price, quality, advertisement, style, color and resale value.

Jatinder Chhabra (2003) had done a research on the factors affecting the purchase behavior of motorcycle and the results revealed that the motorcycle market in India is increasing and Hero Honda had been mainly selling on the economy platform. Hero Honda introduced a number of models, with high fuel efficiency. For the person who was looking for a light blend of power, style and economy the right brand was Bajaj.

DATA ANALYSIS & INTERPRETATION PERCENTAGE ANALYSIS**TABLE 1****TABLE SHOWING RESPONDENTS PREFERENCE TOWARDS FACTOR INFLUENCE TO BUY DIO SCOOTY**

S. No	Categories	No. of Respondents	Percentage
1	Quality	7	6%
2	Prices	33	27%
3	After sales service	18	15%
4	Facilities	62	52%
		120	100

(Source: Primary data)

INTERPRETATION

The table shows that 52% of the respondents preferred facilities factor influenced to buy dio scooty, 27% of the respondents preferred prices factor influenced to buy dio scooty, 15% of the respondents preferred after sales service factor influenced to buy dio

scooty, 6% of the respondents preferred Quality factor influenced to buy dio scooty.

INFERENCE

Majority of 52% of the respondents preferred facilities factor influenced to buy dio scooty.

**RANK ANALYSIS****TABLE 2****TABLE SHOWING DISTRIBUTION OF RANKING FOR THE FACTORS WHICH INFLUENCE TO PURCHASE THE DIO SCOOTY**

S.No	Factors	1	2	3	4	5	Total	Rank
1	Mileage	77(5)	27(4)	10(3)	4(2)	2(1)	533	1
2	Brake	34(5)	64(4)	13(3)	5(2)	4(1)	479	2
3	Tyre	56(5)	46(4)	8(3)	7(2)	3(1)	505	3
4	Electrical problem	35(5)	38(4)	9(3)	17(2)	21(1)	409	4
5	Post sale service	40(5)	14(4)	14(3)	13(2)	39(1)	363	5

*(Source: Primary Data)***INTERPRPETATION**

From the table, it is understood that mileage is ranked 1, tyre is ranked 2, Brake is ranked 3, Electrical problem is ranked 4, Post sales service is ranked 5.

INFERENCE

Mileage during purchasing dio scooty have been ranked 1st by the Customers.

TABLE 3**TABLE SHOWING DISTRIBUTION OF RANKING FOR THE DESIGN OF THE DIO SCOOTY**

S.No	Particulars	1	2	3	4	5	Total	Rank
1	Excellent	50(5)	22(4)	18(3)	16(2)	14(1)	438	1
2	Good	16(5)	30(4)	22(3)	25(2)	27(1)	343	3
3	Average	19(5)	26(4)	35(3)	20(2)	20(1)	364	2
4	Fair	25(5)	18(4)	20(3)	27(2)	30(1)	341	4
5	Poor	10(5)	24(4)	25(3)	32(2)	29(1)	314	5

*(Source: Primary Data)***INTERPRPETATION**

From the table, it is understood that Excellent is ranked 1, Average is ranked 2, Good is ranked 3, Fair is ranked 4, Poor is ranked 5.

INFERENCE

Excellent for design of dio scooty have been ranked 1st by the respondents.

LIKERT SCALE**Table 4****TABLE SHOWING INDICATION OF LEVEL OF AGREEMENT OR DISAGREEMENT**

Note: Likert Scale = $\sum fx / \text{Total number of respondents}$ f = Number of respondents

S.No	Factors		5	4	3	2	1	TOTAL	Likert Scale
	Likert Scale value (x)								
1	Price	f	1	0	13	73	33	120	1.85
		fx	5	0	39	146	33	223	
2	Quality	f	2	2	33	67	16	120	2.22
		fx	10	8	99	134	16	267	
3	Style, Design	f	3	5	31	48	33	120	2.14
		fx	15	20	93	96	33	257	
4	Performance	f	2	11	29	33	45	120	2.1
		fx	10	44	87	66	45	252	
5	Mileage	f	2	7	36	43	32	120	2.2
		fx	10	28	108	86	32	264	



INTERPRETATION

The likert scale value is less than the mid value (3), thus the respondents are not satisfied with the factors.

INFERENCE

The respondents are not satisfied with the factors.

FINDING FROM SIMPLE PERCENTAGE ANALYSIS

- 53% of the respondents are male.
- 35% of the respondents are in the group of 21 to 30 years.
- 57% respondents are unmarried.
- 50% of respondents are at UG level.
- 45% of the respondents are unemployed..
- 45% of the respondents having monthly income of Rs.10,000 to 20,000.
- 45% of the respondents are preferred mileage on dio scooty are between 45-49km/litre.
- 58% of respondents preferred authorized selling dealer.
- 58% of the respondents preferred to buy another dio scooty in future.
- 52% of respondents says after sales service factor created brand awareness towards dio scooty.
- 52% of the respondents preferred facilities factor influenced to buy dio scooty.
- 58% of the respondents recommended to buy dio scooty to others.
- 52% of the respondents says other factor in dio scooty are important in dio scooty.
- 44% of the respondents buys dio scooty on festival discounts/offers.
- 44% of the respondents buys yellow color dio scooty.
- Mileage during purchasing dio scooty have been ranked 1st by the Customers.
- Excellent for design of dio scooty have been ranked 1st by the respondents.
- The respondents are not satisfied with the factors.

SUGGESTIONS

Regular availability of all method be ensured. Efforts have to be taken to ensure no stock outs for honda dio , unicorn and shine. Dealer has to put efforts to improve quality of after sales services as majority obtained that they would not prefer the dealer after free services. Delar and company should ensure availability of flagship brand honda dio. Due to non availability,

majority of the prospectives are shifting to other company brands.

CONCLUSION

It has been undoubtedly proven that retaining customers is the only way to succeed. The study on the customers satisfaction of honda two wheeler among the customers within the coimbatore district was conducted in the am wings honda, a well know dealer in the coimbatore districts. The study tries to reveal the factors responsible for preferring a particular brand. The sample was collected from the customers who owned the honda two wheeler and to know about the satisfaction level of the honda two wheelers. The study tries to identify the extent of influence of various informational sources in customer satisfaction. In this study most of the respondents are having a good opinion about the honda two wheelers and the findings and suggestions of this study will support the company in an effective and better way.

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QUALITATIVE STUDY OF METHAMPHETAMINE USERS' PERSPECTIVES ON DRUG ABSTINENCE BARRIERS AND FACILITATORS

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ABSTRACT

This study aims to investigate the lives of adult methamphetamine users in Germany. This qualitative research focuses on how people become addicted to methamphetamine, what are the key harmful effects of the substance on various fields of life. The available literature on this topic analysed nine studies on methamphetamine use. Extensive study has been performed to clarify the impact of methamphetamine. A US research on the neurophysiological and compartmental effects of misuse of crystal methamphetamine found these abuses cause damage to brain regions associated with social cognition and could thus contribute to social cognitive disability. Although methamphetamine is a desire for socialization, the findings indicate that chronic use is associated with depression, violence, and social isolation.

KEYWORDS: *methamphetamine, drug abuse, HIV, experience, abstinence, narrative study*

INTRODUCTION

The most frequently consumed illegal drugs in Germany are amphetamines after cannabis (Degenhardt, Barker & Topp, 2004, cited in Stough et al., 2012). Crystal methamphetamine is a powerful psychostimulant (also known as "ice" or "crystal meth") that can cause irreversible physical and psychological harm to users (Halkitis, 2009). Crystal methamphetamine is used to cope with long working hours, improve efficiency and enhance social and sexual interactions due to its calming properties (McKenna, 2013). Increased sex drive and increased self-esteem are described as some immediate subjective effects of its implementation (Rawson, Sodano, & Hillhouse, 2013). Increasing anxiety, depression, aggressive behaviour, and psychosis have long-term adverse consequences (Buxton & Dove, 2008) as well as high sexual behaviour and increased risk of HIV, hepatitis, and tuberculosis (Brecht, O'Brien, Mayrhauser, & Anglin, 2004).

Another research conducted by Sommers, Baskins and Baskin-Sommers (2006) in the United States explored methamphetamine use health and social effects in 106 students between the ages of 18 and 25. Some participants received little to no treatment and others were from the public. For at least three months all participants used crystal methamphetamine. Many participants identified serious mental health symptoms, including anxiety, hallucinations, and depression, while one in two reported negative interpersonal ties. However, 19 per cent of participants did not mention social implications or minimal repercussions on jobs, training, or finance. These results indicate although methamphetamine use is related to adverse psychological effects, it cannot have adverse social effects for all users. However, the results do not justify why there were no detrimental social consequences in 19% of the participants.



The methamphetamine use and development in methamphetamine hazards were investigated in an epidemiological analysis in Germany. The study found that in the past decade in Australia the supply of stronger types of methamphetamine has increased. There were notable rises in amounts of methamphetamine users in Australia, whereas the standard group has risen with crystal methamphetamine. The findings show methamphetamine users who injected crystals had greater intake and risk of violent activity, antisocial behaviour, and crime than non-injecting users. The study also pointed out that consumers who in the previous six months had employed crystal methamphetamine for over 3 months were more likely than non-users to be homeless last year. The research did not explore participants' life experiences before addiction, violence, or homelessness.

In addition to the risks reported in the above analysis, a prospective 1837 cohort study by the injection of methamphetamine in Canadian users found that eight per cent of people of different sexualities, age groups and ethnicity reporting attempted suicide correlated injecting methamphetamine with an increased risk of suicide (Marshall, Galea, Wood & Kerr, 2011). Although these findings show that suicide is a major risk for users of methamphetamine, the risk cannot be generalized for all client classes. Similar studies into the population of Australia will help investigate in similar ethnic groups the possibility of suicides of non-injecting and injecting users. It will also be necessary to analyse whether other factors, in addition to drug use, can increase the risk.

Violence is another major social consequence, often associated with using methamphetamine. In a longitudinal study in Australia, 400 daily users of methamphetamine and heroin compared how much violent crime and victimization (Darke, Torok, Kaye, Ross & McKetin, 2010). Methamphetamine users have been more vulnerable than heroin users over the past 12 months. Nevertheless, in the past 95% of users of methamphetamine and heroin have reported becoming victims of violent crime. That is why, relative to heroin users, however, methamphetamine users have a growing risk of violent growth. There was a clear correlation between the outcome of a future longitudinal study in Australia and methamphetamine use, with 10% of participants reporting aggression during abstinence, compared to 60% during heavy use (McKetin et al., 2014). However, neither research addressed the violence context and we

Uninhibited sexual activity is one of the most common side effects of using methamphetamine (Rawson et al., 2013). The findings of Shoptaw and Reback's (2007) study indicate a clear connection among homosexual male users between using

methamphetamine and the transmission of HIV-related sexual diseases. The findings of the study indicate that crystalline methamphetamine induces euphoria, improves libido and concentration, decreases fatigue, and encourages behaviours, which may contribute to HIV and another infectious disease transmission. But it was only gay male methamphetamine who was the subject of this study. The chances of sexually transmitted infections in other consumer groups continue to be important to remember.

All the above reports have concentrated on methamphetamine-related side effects. But one study in the United States carried out in 2014, found that participants as children and adults experienced mental and physical wellbeing, perceived dangers and benefits of crystal-methamphetamine and family history as well as neglect and violence. The goal of this research was to identify the particular need for additional resources including trauma counselling, gender-based consultation and social cognitive skills training. 222 (119 female and 103 male) users were treated for this report. Crystal Methamphetamine. Results revealed 40% of participants have been sexually exploited in infancy, 41% have been physically abused and 59% have been unloved. 95% of participants reported having an alcohol addiction and 91% reported having an emotional or psychological problem in a family member. Consequently, it was clear to many participants that

The latest methamphetamine literature review in crystals finds nine research studies most applicable to the subject of research of the current report. Merely one (Maxwell, 2014) of the nine studies analysed explored the susceptible factors for methamphetamine users in their lives. The eight remaining experiments were designed to detect the physical, psychological, and social implications of drug use. All the studies analysed were also quantitative. There are no applicable qualitative studies. The purpose of this qualitative study was, therefore, to fill the void in the existing literature and to deepen our understanding of adult methamphetamine users' personal and ecological characteristics. The research focused on giving voice to the participants' lived experiences.

Design

For this analysis, a qualitative design has been adopted since the study is of an exploratory type. This method was considered appropriate to communicate the participants' experiences and research the significance and importance of their experiences (Lapan, Quartaroli, & Reimer, 2011). A qualitative methodology allows one to study participant interactions richly and extensively. Basic theory informs data analysis to organize various data categories using free, axial, and selective data coding



(Boeije, 2009). Instead of offering an evolving hypothesis, findings were thematically presented. The themes analysed were done following the phases mentioned by Braun and Clarke (2006), in which initial codes from the data were created, sorted, and collected to establish themes, and finally, the key themes analysed to find subthemes.

The analysis was inductive, and the conclusions were based on the data obtained. However, the research approach departed from the ground-breaking principle, as there were many participants in the study and an effective sampling method was used for recruitment.

Participants

Six participants have been recruited for this study. Despite the relatively small number of participants, the data obtained was rich, in-depth, and detailed. Purpose sampling was introduced to allow for the strategic inclusion of those participants with appropriate expertise (Polkinghorne, 2005); that is, participants had to be over 18 years of age and had to use crystal methamphetamine to participate in the research. Although it was not intended to recruit participants from a particular client community, all participants were Caucasian men who were in care at a residential drug abuse treatment facility in a rural area of Australia. The age of the participants was between 31 and 39 years of age. Three of the six participants identified as gay and two of them had a positive HIV diagnosis. The length of use of crystal methamphetamine among participants ranges from 4 to 22 years. Drug consumption strategies for all six participants include SM.

Procedure

In the reception area of a local therapy agency and a residential restoration centre, the project was publicized by supplying information fliers on the study. Interested individuals were asked to e-mail expressions of interest to the researcher, after which a detailed information package was sent to them. Upon receipt of their informed consent and after verifying that they met the eligibility requirements, a mutually suitable period for performing semi-structured interviews, which were audio-recorded and lasted 50 to 60 minutes, was scheduled. Records were transcribed verbatim, after which transcripts were submitted to the participants for clarification and consent to using transcribed interviews for this study. Participant names and other identification details have not been used at any point of the research to protect the identity of the participants and to make them feel confident about sharing their life stories.

These questions have driven the half-structured interviews: (1) When and how have you started using crystal methamphetamine first? (2) What was going on at that point in your life? ; (3)

How did the methamphetamine obtain access?; (4) Can you tell me about your drug experience? ; (5) What has been the effect on your life on crystal methamphetamine? (6) Have any other substances ever been used? ; (7); How started your use of the substance? ; (8) Was there any discrepancy between crystal methamphetamine effects and other substances? ; (9) Can you say something to me about the family and social setting you grew up in? ; (10) So far, what assistance did you have for your restoration? ; (11) Was the helpful support? ; (12) What motivates you to stop taking advantage and to create meaningful life changes? ; (13) What do you expect would allow you to sustain recovery after the therapy program has been completed?; and, (14) What sort of support services can be offered.

RESULTS

The data analysis culminated in three main themes: meaning, post-math, and recovery. The first theme, meaning, sheds light on the history of reliance on family roots, social factors, and others. The second thread, afterwards, explains the major adverse effects on participants' physical and mental health, their work/study capacities, and their critical relationships of using crystal methamphetamine. The third and final subject, rehabilitation, outlines the participant's experience during the recovery process and their view on accessible and appropriate community support. There are also various sub-themes for each theme, listed below.

Theme 1: Context

It was found that all six participants had a significant role to play in the production and maintenance of the dependency on drugs, the social context, and certain individual elements together. Five participants first used alcohol, while one participant began using LSD (Lysergic acid diethylamide). For all six participants, using drugs began between 12 and 16 years of age, and experimented with various forms of substances. At around 14 and the age of 18, two participants began using crystal methamphetamine, and three began at the beginning of 20. As a participant said:

When I was about 16, I started to have alcohol and marijuana. When I was eighteen, I first considered crystal meth. It was used only from time to time. When I started using crystal meth, I used other drugs, primarily pace.

1.1 Family of Origin

The families of both parents were brought up in three participants and the households of the single parent in three participants. When they grew up, all six participants were living with their siblings. In their families of origin, five out of six respondents



identified the community as "dysfunctional" while still young. The participants said parental conflict marked their family environment, aggression, physical and/or emotional abuse, and dependency. The sixth participant said his immediate family is "functional," as its parents are not addicted and violent. He identified however that his extended family had an addiction, aggression, and abuse. Also, the four interviewees who suffered physical abuse said their father was physically abusive. One participant recalled, "if his father was angry, he'd take something and rock us up.

At least one parent with a drug problem had five participants. One participant said that although his parents had no problem with addiction, his brothers, and grandparents on the side of his father were significantly dependent. In parents and siblings and intergenerational concerns, including abuse, suicide, and mental illness, five participants reported mental health problems. Typical for these encounters was the following quotation:

I had an abusive alcoholic parent, my uncles were all alike, and they did horrible things. They were terrible men. They were awful men. Our family was devastated by alcohol. I had cousins who murdered, robbed money and gameplay.

In the emotional distress of the rejected, abandoned or ignored parents, five interviewed respondents believed that one of the key reasons they began using the drugs was because. Two of the three gay research participants were refused homosexual treatment by their families. As explained by one of these men,

Nobody knew what homosexual was. All were once secret. My dad told me just how mad I was, and just how perfect my older brother was. I've been the gay one, he's the right one. He truly made me feel like as a person, I was nothing.

1.2 Social Influences

In addition to the family's origins, the six participants have suggested they wanted to fit in with friends or colleagues as one of the key reasons why they started to take drugs. You experimented with substances that belong to a social group and that people like them. All three gay participants said they would feel comfortable if included in a social group because they had been persistently abused and humiliated for their childhood and adolescence sexuality. One student said:

I became the party boy and fitted into the group because I had alcohol and drugs. I felt like people like me. I felt like people like me. I have more attention; the validation has been granted. I have not been selected or bullied. I was not picked. I've been safeguarded.

In the protection of addiction, financial independence also played a significant part. At the age of 14, four people began working, so they were able to buy their alcohol and drugs. After they got their job, they began to socialize with older workers who drank and drank heavily. They attended parties and nightclubs where the use and availability of drugs and alcohol was a normal occurrence. One of these participants explained how his work contributed to an educational breakup:

On weekends, I began working part-time with people over 18. And in this new life, they had a wonderful time. I ended up with some ecstasy dealers to make friends. I chose not to think about school at 14 or 15 years of age. It was much more acceptable and fun to go to night clubs and sell drugs and dance parties.

All respondents said crystal methamphetamine was readily accessible in or with their social groups. They weren't afraid to try this medicine because it was a trend between peers. The gay participants claim that crystal methamphetamine is a common drug for improved, intense and severe sexual encounters in gay social environments.

1.3 Individual Elements

Some specific personal variables, according to the respondents, have contributed to their Independence. Their drug use began when their identity was complicated, and for those circumstances, they felt insecure and uncertain about themselves. One participant said that the transition to high school was difficult for him and that at this point he lost his desire to learn and began cutting himself off:

It was much more acceptable and exciting to go out to nightclubs and sell drugs and partying. I was diagnosed with depression and anxiety and put-on antidepressants at 14 or 15 years of age, I guess. I started self-harming around the time

The difficulty of dealing with severe physical injuries and experiencing mentally unsupported were significant factors leading to the initiation of crystal methamphetamine usage in two participants. Physical injury has marked the end of a promising career in sports for one of them:

I was physically injured for the first time. And I realized that I can't do that anymore. I've been trying to get on with it for six months or so, but I haven't been able to get there physically. It was terrible. My coach would scream at me, and I was constantly in tears. I felt like I was a big disappointment. There was a great deal of remorse and guilt.

Four participants correlated substance use with adulthood. Speaking of the beginning of his crystal



methamphetamine use after moving out of the family home at the age of 15, one of the participants said:

I only wanted to be an adult, and I had no idea what it was like to be gay. The first people around me were all criminals, intravenous drug users, prostitutes, and I completely correlated it with being an adult.

Theme 2: Aftermath

All participants indicated that when they first began using crystal methamphetamine, they played with the substance and only used it on weekends and parties. Then they began to like its extreme effects, built an increased tolerance, and became "heavily dependent" on it. Immediately after ingestion, the drug made them feel heightened, strong, controlled, and highly confident in their sexual behaviour. As defined by one participant,

Extreme behaviour, extreme mental states. All have been heightened. Feelings, touch, it's all fake, but it's so powerful it makes you forget about anything else. You can create something... some type of feeling. You may have the most horrible person in front of you, and after a clip, they're going to be the most brilliant thing in the world, and you want to do something to them.

Three participants possessed the "mental chaos" and the simulated environment they encountered while they ingested crystal methamphetamine. One participant described the experience as follows:

I loved being in psychosis. It was like being in nature and observing things, and only being in this artificial land, which is nothing but, you know, it's so complete together.

However, each of the participants said that as a consequence of using crystal methamphetamine, they have had many long-term adverse effects in various aspects of their lives, including physical and mental wellbeing, occupation, and relationships. All six respondents explained that, compared to other drugs they had used, crystal methamphetamine had by far the worst effect on their lives. One of the participants said:

In my head, when I think about meth, I see the darkness. It brings out my shadow side, the darkest aspect of which I might be. I almost found myself possessed. Often, I felt like I was putting poison in my body to change who I was. Often when I had meth, the sex freak came out and sometimes I just went nuts.

2.1 Health

All six participants reported that crystal methamphetamine harmed their physical and mental wellbeing. Weight lack, loss of appetite, visual disturbances, and severe fatigue were some of the

most widely recorded effects on physical and physical health. One participant remembered, "My skin was getting weak, I was losing weight. You can convince yourself that you look all right, but you don't." Participants spoke of not having the physical strength to work due to extreme withdrawal symptoms. Two of the three gay participants contracted HIV during their use of crystal methamphetamine.

Both participants reported effects on their mental health, psychosis, hysteria, and hallucinations. Respondents experienced heightened mental states, high irritability, delirious thought, and intense mood swings. Most of the participants isolated themselves through their paranoia and believed they had lost their relation to reality, as shown in the following the quote:

It was paranoiac and I felt like I was the king of the universe. Stuff so happened I stayed in a hotel room and shot meth after shot. I couldn't have stopped. I don't remember much but I remember hunting around the area. I figured there was a gang after me. I went to kill myself because I realized people chasing me.

All six participants described the worst impact on their mental wellbeing when they began to inject crystal methamphetamine. Four participants said that they had recurring thoughts of self-destruction. During their use of crystal methamphetamine, they attempted suicide many times and frequently were hurt. As defined by one participant:

I figured the best way to avoid permanently doing it was to kill myself. I tried it several times. Because it got too harsh to stay. That's my preference, therefore. It was either killing me, or it was doing anything to avoid.

However, when he began injecting crystal methamphetamine, only one participant described a rise in his aggression and aggressive conduct.

2.2 Occupation

For a brief period after beginning crystal methamphetamine use, five participants were able to fulfil work or research commitments. But in the long term, they could not support this capacity. They spent all their time working for longer weekends, losing their professional registrations, resigning, stopping operating companies, becoming bankrupt and even homeless. Experiences like these have been common:

I resigned that. I resigned. I was going to meetings until that day, and then I would go back and forth to work or use in the car. In my arm, I'd put an armchair. The other ends were full. I lost my desire to continue to do so. And that career I gave up work and. I was offered chances, but I just couldn't function.



2.3 Relationships

All six participants confirmed that using crystal methamphetamines broke their important relationships with family members, friends, and partners. As the following quote indicates, participants said they had relationships "toxic" and "co-reliant."

I've been so bad about myself in the past five years that I've put crystal meth in my system that I've lost communication capacity, become like a doormat, and just let someone go around me and do something for me.

In their sexual interactions, the six respondents have witnessed insufficient boundaries while using crystal methamphetamine. They said that this medication eliminated all the inhibitions and sex beliefs. Participants clarified that they appeared fascinated with sex, experienced hourly pornography, and violent sexual fantasies, and participated in unhealthy, abusive sexual practices with several partners. All three gay people reported having a sexual attitude of prostitution and "manic" under the impact of crystal methamphetamine. Experiences like these have been common:

I had this sexual confidence, which I never had before when crystal meth was introduced. And without any doubt about my actions, I could be forceful and violent and rebound from person to person. I'm not scared about how many people I'd have relationships with what it looks like, whether it's protected or not, behind temples, in sex clubs, in toilets at the train station.

A gay participant was a "sexual slavery" victim:

I could get meth on tap so that I became a friend of a girl that was a gang member. She dealt most meths and that's when my world changed. It was utter chaos. She fed me one gram a day to keep my habit alive, and then I had to pay for myself by estimating people in her circle what I call sex slavery.

Theme 3: Recovery

This last theme discusses the participants' perceptions of rehabilitation, as well as their perspectives on the community resources available to users of crystal methamphetamine. Recovery meant abstinence from all medications and alcohol for all participants. As one student said:

I know it's not going to be manageable to get anything and to be OK if we use alcohol or some other drug. I can't even have one drink, and I know it because drinking will bring me drugs. I know that.

3.1 Experiences

Participants described Recovery as a "prolonged and demanding" phase, which suggested that factors like insufficient support nets, unresolved disputes between families, and drug use by others may contribute to recurrence. Both participants felt it

was necessary not to be complacent about rehabilitation and to become "work addicted" after completing the recovery program. They clarified that doing so could take away the emphasis from working towards the maintenance of recovery. One participant defined the situation as follows:

The last time I finished this program, I got clear of myself. So focused on work, so focused on money that I didn't care about my recovery and stuff. An opportunity came, and I picked up the ice, and I went paranoiac.

The respondents assumed that a combination of internal and external factors would lead to a sustainable recovery. Internality, resilience, good internal drive, and better self-awareness were the reasons found, while external factors include peer reinforcement, stable relationships, longer-term advice and family and friends' support. Since healing, respondents have gained compassion for themselves and developed a new sense in their lives. They also researched restructuring unhelpful understandings, emotional acceptance and healthy contact and issues. All understood that healing gave them hope and helped them relate to their beliefs. As one student said:

I'm able to find a girlfriend, a puppy, a home, etc. This is part of my belief system. I believe I can do better for myself, and I can do better for myself. I know that I can be a consistently good friend, a good uncle to my nieces and nephews, and a supportive person.

3.2 Support

The participants believed there is a need for more tailored treatment for users of crystal methamphetamines, even though there are several community services to help rehabilitation. There were also initiatives to mitigate damage, to concentrate on behaviour programs and to create long-term recovery centres. The respondents felt they needed more 'detox' services and more help for people on waiting lists and those in custody or on probation. As one student said:

When they come out of prison other than using, they know little else. And needles are only a huge mess. They go to crime, then. I got friends who are a rung the police to ask for assistance because they want to help get rid of drugs. You don't know how to handle your life.

The study participants also said an integrated service model was required. You guessed that many programs, like accommodation, wellness, therapy, financial aid, schooling, and employment opportunities, should be offered for all rehabilitation support services. In the context of other issues which



contribute to the maintenance of addiction, participants believe it is necessary to address addiction.

Four respondents also envisaged a decriminalized approach to using crystal methamphetamines is important in addition to the need for more services. They claimed that using crystal methamphetamine as a "problem for society, and not simply the problem of an individual," would enable more people to seek support. This was pointed out by one participant:

Meth needs to become more of a public health concern, and there need to be more public health campaigns about stigma and success stories instead of simply being demonized all the time because then it causes internal stigma and isolation. People don't reach out because people are scared to get assaulted and go to prison for all this. It's a problem with drug abuse, not a problem with an individual.

The proposal for a change in strategy also included a suggestion to teach young children about the risks of substance use:

They should be learning about these topics because children are young, and their mentalities are different. It's a matter of young people learning to say, 'now and 'stop.'

DISCUSSION

This research looked at the experiences of six adult users of crystal methamphetamine. The main objective of this research was to gain a better understanding of the participants' experiences about the context of their use of crystal methamphetamine, the factors that sustained or exacerbated opioid dependency, as well as the experiences during the recovery phase. Three key themes (i.e., context, follow-up, and recovery) emerged from the results.

Respondents addressed not only their dependency on crystal methamphetamine, but also their dependence on other drugs including alcohol, marijuana, pace, ecstasy, and heroin. It was noticed that for all participants, crystal methamphetamine began to be used after strong and frequent usage of other substances. One of the main results of this study is that the addiction background for all respondents included a weak family atmosphere and negative social effects in their formative years. In the Maxwell study (2014), 40 per cent of participants are battered, 41 per cent beaten and 59 per cent felt unloved and abandoned in their childhood, while in the current study, five of the six (or 83 per cent) participants had experienced persistent violence, neglect, and alienation from their families. Therefore, the results of both studies have shown that a high percentage of consumers of crystal methamphetamine has been exploited and neglected

as children and have grown up in an unhealthy family setting.

Unpleasant social factors have also been established as a significant factor in why respondents began using drugs. They also established low self-esteem and negative images of themselves and the environment. Participants did not feel welcomed or emotionally embraced during puberty when they discovered their sexual orientation and went through various stages of physical and psychosocial development. Respondents began experimenting with alcohol and drugs to self-medicate and "fit" their peer groups. A significant benefit for using crystal methamphetamine was it could make them feel strong and in charge due to its extreme effects, one of which was to numb their painful thoughts and feelings.

Moreover, this study found that the social functioning of all six participants was greatly affected by using crystal methamphetamine after using crystal methamphetamine. It had a detrimental effect on their physical and mental health, occupation/education, and interpersonal relationships. However, this result is inconsistent with the results of the Sommers et al. (2006) report, in which 19 per cent of participants find no social consequences of crystal methamphetamine use and only a marginal impact on their study or function. Also, 50 per cent of participants were confirmed to have had no adverse effects on their relationship. However, the age of the participants in the Sommers et al. study was between 18 and 25 years, while the participants in the present study were between 31 and 39 years of age. This also poses the question if the social consequences of using crystal methamphetamine differ according to era. There is also a need for more studies on different and larger demographic groups among the German population.

This research showed that crystal methamphetamine had a significant effect on people's mental wellbeing, in line with results of the study by Sommers etc. (2006). The hallucinations, anxiety and hysteria occurred in all 6 respondents, which further affected their social functioning. They were alienated from relatives, friends, and others relevant, and some began to damage themselves and to suicide. Participants believe that as they started to inject crystal methamphetamine, their suicidal actions became more serious. This is consistent with Marshall et al. (2011)'s study, which found the risk of suicide is high to users of crystal methamphetamine.

According to McKetin et al. (2014), using crystal methamphetamine is a major risk factor and rises with heavy use. Aggressive behaviour. In this study, however, only one of the six participants indicated his attacks and aggressive actions increased during using this medication. Interestingly, it will be



to research this from a family, friends, and external viewpoint.

One of the main results of this study was dangerous, uninhibited, and hypersexual activity triggered by using crystal methamphetamine. All six people indicated insufficient sexual boundaries while using crystal methamphetamine. Both gay participants were involved in prostitution and during this time two of them contracted HIV. This is consistent with the findings of the 2007 Shoptaw and Reback study which found the use of crystal methamphetamines and HIV among was in stark relation.

The third main topic in this study, i.e., recovery) indicates respondents found a combination of internal and external factors to be important to the recovery process. It was not only the rehabilitation from using crystal methamphetamine that gave participants its significance, but also the absolute abstinence from all drugs, including alcohol. Both respondents viewed the adoption of a healthier lifestyle as a necessity to recover. The study showed that participants improved physical, mental, psychological, and social wellbeing during their rehabilitation. In psychosocial causes, including abuse, unresolved conflicts of birth, fundamental values, and dysfunctional relationships, they have been better able to accept their addiction. These outcomes of the participant interactions during rehabilitation were unique to this research and thus the findings of other studies analysed could not be compared.

In analysing the participants' views on the availability of community recovery resources, this study found respondents emphasize the need for an integrated, family-centred, and decriminalized recovery strategy. The results of the current study back Maxwell (2014)'s guidelines for trauma treatment, family therapy and gender-oriented procedures. The research also aims to provide better care and educate young children on the risks of substance use to clients with various and diverse needs.

CONCLUSION

This study analyses the experiences of adult methamphetamine users with crystalline materials. Although it is a small study, it provides a comprehensive account of the complex and multiple factors that lead to the use and utilization of methamphetamine. To understand their perspectives and their particular treatment needs, it aims to further research different population groups of Germans, for example, young adults, women and homosexual men and women. Further, studies will lead to reinforced, concrete approaches in the areas of prevention, harm reduction and maintenance of rehabilitation. This study strongly supports people and their families in

working together to help them cope with complex problems including difficulties with relationships, parenthood, violence, trauma, and mental health problems, as these factors can make an important contribution to maintaining or reducing dependence.

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FORMULATION AND EVALUATION OF DABIGATRAN ETEXILATE MESYLATE CAPSULES

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ABSTRACT

Dabigatran etexilate mesylate is a drug used as anti-coagulant in deep vein thrombosis. Dabigatran etexilate mesylate has less solubility in order to increase the solubility of Dabigatran etexilate mesylate was formulated as pellets by taking tartaric acid pellets as a core pellets (tartaric acid pellets create acid environment which initiates drug to dissolve). The present study was under taken to design the formulation and evaluation of the Dabigatran etexilate mesylate immediate release pellets by fluid bed technology. The present invention of Dabigatran etexilate mesylate capsules provides pellets in capsules and its compositions containing Dabigatran etexilate mesylate and excipients. Drug and excipient studies were done at $40 \pm 2^\circ\text{C}$ and $75 \pm 5\%$ RH for 30 days with Drug : Excipient ratio 1:1 for different excipients by FT-IR Spectroscopy and no characteristic change was observed. Various formulations were formulated with different polymers like hydroxyl propyl cellulose, povidone k30 and Formulations were analyzed for different parameters like UV absorption studies, Drug content estimation, In-vitro drug release profile and Formulation F6 was optimized based on comparative In-vitro dissolution profiles and by statistical evaluation (similarity and dissimilarity) with that of innovator product PRADAXA. For optimized Formulation F6 accelerated stability studies were done for three months at 40°C & 75% RH no significant change with respect to physical appearance, disintegration time, assay and dissolution.

KEY WORDS: *Dabigatran Etexilate Mesylate, Immediate Release Pellets, Fluid Bed Technology, Povidone K30, Hydroxy Propyl Cellulose*

INTRODUCTION

Dabigatran etexilate is a pro-drug of dabigatran, a representative of a new therapeutic class of direct thrombin inhibitors. Thrombin is a serine protease produced by the proteolytic cleavage of prothrombin. It is a final mediator in the formation of fibrin in the coagulation cascade and a potential platelet activator. As a specific and reversible inhibitor of thrombin, dabigatran has a potential to improve the management of thromboembolic disorders. The structure of dabigatran molecule was designed to improve the in vivo potency of binding with thrombin.[1,2,3]

The chemical name (IUPAC) of dabigatran etexilate mesylate is ethyl N-{{2-({4-((E)- amino {{(hexyloxy) carbonyl] imino} methyl) phenyl} amino} methyl)-1-methyl-1H- benzimidazol- 5-yl} carbonyl}-N-pyridin-2-yl-β-alaninate methanesulfonate corresponding to the molecular

formula C35H45N7O8S. The CAS number of dabigatran etexilate mesylate is 593282-20-3. The molecular mass is 723.86 for the salt and 627.75 for the free base.[1,2,3]

Dabigatran etexilate mesylate is a yellow-white or yellow non-hygroscopic crystalline powder. The apparent partition coefficient of the neutral form (free base) is $\log P = 3.8$, and the dissociation constants are $pK_{a1} = 4.0 \pm 0.1$ (benzimidazol moiety) $pK_{a2} = 6.7 \pm 0.1$ (carbamaic acid hexyl ester moiety). Solubility is strongly pH dependent with increased solubility at acidic pH. A saturated solution of the drug substance in pure water was found to have a solubility of 1.8 mg/ml. Because of the low solubility of dabigatran etexilate mesylate in water (pH 3 to pH 7.5) and the high intrinsic passive permeability, dabigatran etexilate mesylate is considered to be a Class II drug substance according to the Biopharmaceutical Classification System and



selected for present investigation as a model drug.[1,2,3,4,5]

Preformulation Studies

Preformulation involves the application of biopharmaceutical principles and physicochemical parameters of drug substance were characterized with the goal of designing optimum drug delivery system. It is important part in drug development process. The information relating to drug development acquired during this phase is used for making critical decisions in further stages of development. Characterization of drug is very important step at preformulation phase of product development followed by studying the properties of excipients and their compatibility.

Drug-Excipients compatibility Studies

FT-IR studies: In this study, potassium bromide disc method was employed. IR studies of pure drug and physical mixtures of drugs and excipients were done. The powdered sample was intimately mixed with dry powdered potassium bromide. The mixture was then compressed into transparent disc under high pressure using special dies. The disc was placed in IR spectrophotometer (Schimadzu FT IR – 8700) using sample holder and spectrum was recorded.

Stability studies: The drug and excipient compatibility study was done at accelerated conditions for short period of time ($40 \pm 2^\circ\text{C} / 75 \pm 5\%$ RH) with periodic observation and physical evaluation. Samples of dabigatran etexilate mesylate and individual excipients were intimately mixed in equal parts (1:1) ratio by weight and filled in glass vials. Samples were physically observed at the end of 15days and 30days. Result were shown in Table. No.7.4.

Standard Calibration Curve

Identification of Identification of λ_{max} of Dabigatran Etexilate Mesylate by Uv-Spectroscopy:

Ultraviolet Absorption:

Wavelength Range: 200–400 nm

Standard Solution: 0.1 mg/mL of USP Dabigatran Etexilate Mesylate in methanol. Use sonication to dissolve.

Sample Solution: Transfer the contents of capsules, equivalent to 100 mg of Dabigatran Etexilate Mesylate, to a 100mL volumetric flask, add about 75 mL of methanol and sonicate for about 5 min with intermittent shaking. Cool, dilute with methanol to volume, further dilute with methanol to obtain a solution containing 0.1 mg/mL of Dabigatran Etexilate Mesylate, and pass through a nylon filter of 0.45 μm pore size.

Acceptance Criteria: Meet the requirements:
The retention time of the major peak of the Sample

solution corresponds to that of the standard solution, as obtained in the assay.

Preparation of 0.01 N HCl (pH 2.0) Buffer:

About 0.085 ml of hydrochloric acid was dissolved in 100ml purified water. Later it was made up to volume with water in 1000ml volumetric flask.

Preparation of standard stock solution:

50 mg of pure Dabigatran etexilate mesylate was accurately weighed and transferred to 50ml of volumetric flask containing 0.01N HCL.

Procedure for plotting calibration curve of pure drug:

From the standard stock solution 0.5ml, 1ml, 1.5ml, 2ml, 2.5ml dilutions were made in 10ml volumetric flask and volume was made up to the mark with 0.01N HCl (pH 2.0) buffer to obtain concentration in range of 5-25 $\mu\text{g/ml}$. The spectra were recorded, absorbance were measured at 224nm and calibration curve was plotted.

Manufacturing Procedure for Dabigatran Etexilate Mesylate Immediate Release Pellets by Fluid Bed Technology:

Preparation of Seal Coating Solution:

Step 1: Take required quantity of isopropyl alcohol and acetone in beaker to it add accurately weighed povidone K-30 under continuous stirring.

Step 2: To the solution from step 1 add accurately weighed quantity of polyethylene glycol under continuous stirring and stirring was continued to 30minutes.

Preparation of Drug Loading Solution:

Step 1: Take required quantity of isopropyl alcohol and acetone in beaker to it add accurately weighed povidone K-30 under continuous stirring.

Step 2: To the solution from step 1 add accurately weighed quantity of polyethylene glycol under continuous stirring.

Step 3: To the solution from step 2 add accurately weighed quantity of Dabigatran Etexilate Mesylate under continuous stirring and stirring was continued to 30minutes.

Step 4: Solution from step 3 was passed through ASTM # 40 sieve.

Seal Coating Manufacturing Process for Dabigatran Etexilate Mesylate IR Pellets by Fluid Bed Technology:

Step 1: Tartaric acid pellets were loaded in fluid bed chamber

Step 2: Seal coating solution was sprayed under controlled process parameters

Step 3: Check the weight of the pellets after attained required weight gain drying was done for 15minutes

**Table 1. FORMULATION TABLE FOR DABIGATRAN ETEXILATE MESYLATE IR PELLETS (F1-F7):**

Formulation Code	F1 (mg/cap)	F2 (mg/cap)	F3 (mg/cap)	F4 (mg/cap)	F5 (mg/cap)	F6 (mg/cap)	F7 (mg/cap)
Seal Coating							
Tartaric acid Pellets 500	203.629	0	0	0	0	0	152.63
Tartaric acid Pellets 700	0	203.629	203.629	152.63	152.63	152.63	0
Povidone K-30	9.697	9.697	0	7.268	0	7.268	7.268
HPC	0	0	9.697	0	7.268	0	0
PEG 400	0.485	0.485	0.485	0.363	0.363	0.363	0.363
IPA	67.631	67.631	67.631	50.69	50.69	50.69	50.69
Acetone	67.631	67.631	67.631	50.69	50.69	50.69	50.69
Drug Loading							
Seal Coated pellets	213.811	213.811	213.811	160.261	160.261	160.261	160.261
Dabigatran etexilate mesylate	172.95	172.95	172.95	172.95	172.95	172.95	172.95
Povidone K-30	30	30	0	30	0	30	30
HPC	0	0	30	0	30	0	0
PEG-400	1.5	1.5	1.5	1.5	1.5	1.5	1.5
IPA	408.9	408.9	408.9	499.1	499.1	499.1	499.1
Acetone	408.9	408.9	408.9	499.1	499.1	499.1	499.1
ProtectiveCoating							
Opadry white	10.289	10.289	10.289	10.289	10.289	0	0
Lubrication							
SLS	0	0	0	0	0	8.289	8.289
Talc	0	0	0	0	0	2	2

**Table 2. No Seal Coating Manufacturing Process Parameters of Dabigatran Etxilate Mesylate Immediate Release Pellets by Fluid Bed Technology**

Time (mins)	Inlet temperature (°C)	Product temperature (°C)	Outlet temperature (°C)	Atomization air (bar)	Blower drive speed (%)	Air flow (cfm)	Spray pump speed (rpm)	Inlet RH (%)
05	60	43	40	1.0	55	46	2	14
30	60	39	39	1.0	55	43	9	12
60	60	47	41	1.0	58	45	12	10
120	60	48	43	1.0	59	47	12	10
180	60	42	40	1.0	57	46	9	10

Table. No-3 Drug Loading Manufacturing Process Parameters of Dabigatran Etxilate Mesylate Immediate Release Pellets by Fluid Bed Technology

Time (mins)	Inlet temperature (°C)	Product temperature (°C)	Outlet temperature (°C)	Atomization air (bar)	Blower drive speed (%)	Air flow (cfm)	Spray pump speed (rpm)	Inlet RH (%)
05	60	43	40	1.0	55	46	2	14
30	60	39	39	1.0	55	43	6	12
60	60	47	41	1.0	58	45	9	10
120	60	48	43	1.0	59	47	15	10
180	60	42	40	1.0	57	46	12	10

Step 1: Seal coated pellets were loaded in fluid bed chamber

Step 2: Drug loading solution was sprayed under controlled process parameters

Step 3: Check the weight of the pellets after attained required weight gain drying was done for 15minutes

Lubrication: Drug loaded pellets were lubricated with accurately weighed required quantities of sodium lauryl sulphate and talc.

Capsule Filling: Required quantity of lubricated pellets were filled in capsule size '1' cellulose capsules.

Weight of empty size '1' cellulose capsule = 75mg

Fill weight for each capsule = 375mg

Target weight of the capsule = 450mg

Evaluation Parameters

Disintegration Test:^[50]

Six capsules were taken randomly from each batch and placed in USP disintegration apparatus baskets, which is repeatedly immersed 30 times per minute into a thermostatically controlled fluid at 37°C and observed over the time described in the individual monograph. To fully satisfy the test the capsules disintegrate completely into a soft mass having no palpably firm pellets. Results were shown in Table. No-7.9.

Particle size:^[50]

Particle size analysis is a technical procedure which determines size range or mean size of particles in the powder. A typical sieve analysis involves the nested column of sieves with wire mesh cloth. The individual sieve weight is noted. A representative weighed sample is poured into the top sieve which has the largest screen openings. Each lower sieve in the column has smaller openings than the one above. At the base is a round pan, called the receiver. The column is typically placed in a mechanical shaker. The shaker shakes the column, usually for some fixed amount of time. After the shaking is complete the material on each sieve is weighed. The weight of the sample of each sieve is then divided by the total weight to give a percentage retained on each sieve. The size of the average particle on each sieve is then analyzed to get a cut-off point or specific size range, which is then captured on a screen. Results were shown in Table. No-7.7.

Assay Procedure

Preparation of mobile phase: Methanol and water were mixed in the ratio of 70:30 and filtered through 0.45µm membrane filter and degassed in a sonicator for 10 minutes.

Preparation of Standard solution

The stock solutions of Dabigatran etexilate mesylate (1000µg/ml) was prepared by dissolving appropriate amount of analyte in diluent. Working standard solution was prepared by mixing above stock



solution of Dabigatran with final concentration of 20µg/ml, respectively.

Preparation of Test Solution:

Sample solution of a concentration of 20µg/ml of Dabigatran Etxilate Mesylate was prepared by using diluents from stock solution (1000µg/ml).

Water content by KF:

The Water Determination Test (Karl Fischer Method) is designed to determine water content in substances, utilizing the quantitative reaction of water with iodine and Sulphur dioxide in the

presence of a lower alcohol such as methanol and an organic base such as pyridine.

Take 20ml of methanol for water determination in the dried titration vessel, and titrate with water determination TS. Weigh accurately a suitable quantity of the sample containing 10–50 mg of water, transfer the sample quickly into the titration vessel, add an excessive and definite volume of water determination TS, stir for 30 min, protecting from atmospheric moisture, and then titrate the solution with Water Methanol Standard Solution under vigorous stirring. Results were shown in Table. No-7.8.

Formula

$$F = \frac{\text{Weight of water taken in g} \times 1000}{\text{Volume of KF reagent consumed in mL}}$$

Acceptance criteria: Not more than 4.0% (w/w)

Dissolution:

The dissolution studies of the prepared capsules were carried using Electro lab apparatus I (basket). Dissolution was performed in 900 ml 0.01 N HCl (pH 2.0) Buffer in at 37 ±0.5°C at 100 rpm. An auto sampler, coupled to the dissolution apparatus was programmed to withdraw and replace 10 ml of the dissolution media at 10, 20, 30 and 45minutes

Independent Model Method (Data Analysis)

Similarity Factor (f2):

As the name specifies, it stresses on the comparison of closeness of two comparative formulations. Generally similarity factor in the range of 50-100 is acceptable according to US FDA. It can be computed using the formula

$$f2 = 50 \times \log \left\{ \left[1 + \frac{1}{n} \sum_{t=1}^n (R_t - T_t)^2 \right]^{-0.5} \right\} \times 100$$

Where, n is the number of dissolution sample times,

R_t and T_t are the individual or mean percent dissolved at each time point, t, for the reference and test dissolution profiles, respectively.

The similarity factor should be between 0 and 100. It is 100 when two comparative groups of reference and test are identical and approaches 0 as the dissimilarity increases.

Difference Factor (f1):

Difference factor focuses on the difference in percent dissolved between reference and test at various time intervals. It can be mathematically computed by using

$$f1 = \left\{ \frac{\sum_{t=1}^n |R_t - T_t|}{\sum_{t=1}^n R_t} \right\} \times 100$$

Therefore the factors directly compare the difference between percent drug dissolved per unit time for a test and a reference product.

Similarity factor of 50-100 ensures sameness of two products

Difference factor of 0-15 ensures minor difference between two products.

Prior to in vivo study, comparison of in vitro dissolution profiles using similarity and difference factors may be the promising surrogate.

Stability Studies:^{[51][52]}

Table. No-4 Storage Conditions in Stability Studies

Study	Storage condition	Minimum time period covered by data at submission
Accelerated	40°C ± 2 °C/ 75% RH ± 5% RH	30, 60 and 90 days

**RESULTS****Preformulation Studies: Evaluation of Drug Characterization of Dabigatran Etexilate Mesylate****Table. No- 5.Evaluation of Drug Characterization Dabigatran Etexilate Mesylate**

S. No	Test	Specifications	Result
1	Description	Yellow white to yellow powder	Yellow white
2	Organoleptic Properties Color Odour	Yellow white Odourless	Yellow white Odourless
3	Physical characteristics Solubility Loss on drying(LOD) Water content by KF Related substances(RS) ✓ Individual impurity ✓ Total impurity	Freely soluble in methanol and slightly soluble in ethanol and isopropanol Not more than 1.0%w/w Not more than 1.0%w/w Not more than 0.15 Not more than 0.15	Complies 0.17%w/w 0.28 0.14 0.13
4	Identification by HPLC	The retention time of major peak in the chromatogram of the sample preparation shall correspond to standard preparation	Complies
5	Heavy metals	Not more than 10ppm	7ppm
6	Assay	NLT 98.0%w/w & NMT 102%w/w	99.25%w/w

Evaluation of Micromeritic properties of Dabigatran Etexilate Mesylate (API)**Table. No- 6. Micromeritic Properties of Dabigatran Etexilate Mesylate (API)**

S. No	Parameters	Average ± S.D
1.	Angle of repose	50° ± 1
2.	Bulk density (BD)	0.77 ± 0.05 g/ml
3.	Tapped density (TD)	1.04 ± 0.72 g/ml
4.	Hausner's ratio (HR)	1.35±0.023
5.	Result	Very poor flow

Marketed Product Characterization

The marketed sample studied on the bases of physical characterization, its drug release pattern in the dissolution, was replicated in our formulation. The main criterion is to replicate the dissolution

profile of the marketed sample so that there will be a proper correlation between ours and marketed product.

**Table. No- 7. Marketed Product Characterization and Physical Evaluation:**

Formulation Parameters	
Name of the Product	PRADAXA 150mg
Distributed By	Boehringer Ingelheim Pharmaceuticals
Dosage Form	Capsules
Route of Administration	Oral
Label Claim	150mg
Shelf Life	3years

Drug & Excipient Compatibility Studies of Dabigatran Etxilate Mesylate IR Pellets

It was determined as as per procedure given in

experimental session. The following table illustrates results.

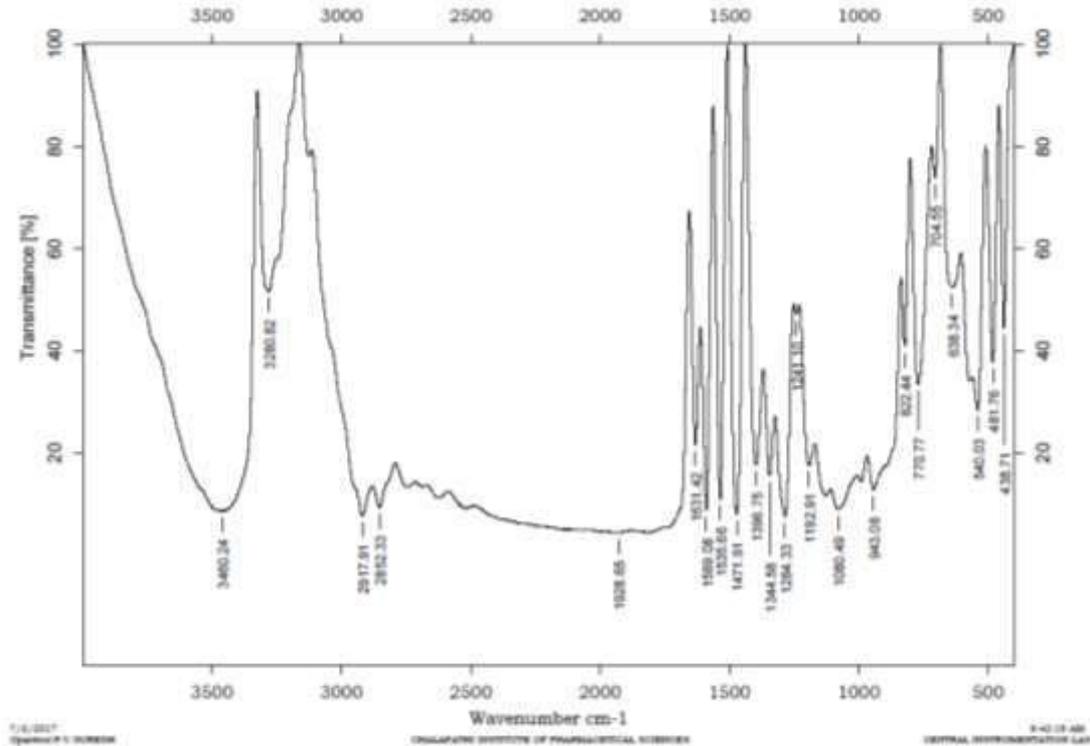
Table No-8. Drug & Excipient Compatibility Studies of Dabigatran Etxilate Mesylate IR Pellets:

S. No	API & EXCIPIENTS	Ratios	40°C/75%RH		Conclusion
			15 days	30 days	
1	Dabigatran Etxilate Mesylate +	1:1	NC	NC	Compatible
2	Dabigatran Etxilate Mesylate + Tartaric Acid Pellets	1:1	NC	NC	Compatible
3	Dabigatran Etxilate Mesylate + Polyvinylpyrrolidone (Povidone K-30)	1:1	NC	NC	Compatible
4	Dabigatran Etxilate Mesylate + Hydroxy Propyl Cellulose	1:1	NC	NC	Compatible
5	Dabigatran Etxilate Mesylate + Polyethylene Glycol 400	1:1	NC	NC	Compatible
6	Dabigatran Etxilate Mesylate + Sodium Lauryl Sulphate	1:1	NC	NC	Compatible
7	Dabigatran Etxilate Mesylate + Talc	1:1	NC	NC	Compatible
8	Dabigatran Etxilate Mesylate + Opadry white	1:1	NC	NC	Compatible

NC- No change



Fig. no-1 FT-IR Spectrum of Physical Mixture



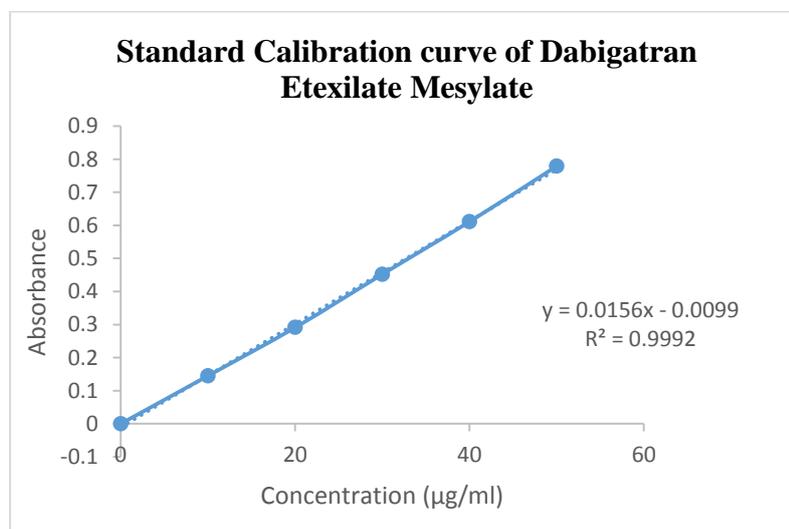
Inference: FT-IR SPECTRUM of Dabigatran etexilate mesylate pure drug and combination with excipients were concordant. So, polymers were found to be compatible with the drug.

Identification of λ max of Dabigatran Etexilate Mesylate: The λ max of Dabigatran Etexilate Mesylate by UV-spectroscopy was found to be 220nm.

Standard Calibration curve of Dabigatran Etexilate Mesylate pH 2.0 0.01N HCL Buffer:

The absorbance was measured in a UV visible spectrophotometer at 224nm against pH 2.0 0.01N HCL Buffer as a blank. The absorbance's so obtained was tabulated as in table (7.6) and calibration curve was plotted and shown in figure (7.1)

Fig. No-2. Standard Calibration curve of Dabigatran Etexilate Mesylate



**Evaluation of Micromeritic Properties of Dabigatran Etxilate Mesylate IR Pellets**

The Dabigatran Etxilate Mesylate IR Pellets of different formulation (F1-F7) were evaluated for bulk density (BD), tapped density (TD), Hauser's ratio and angle of repose. The results of these evaluations are as follows: -

Bulk Density and Tapped Density: Bulk and tapped densities are used for the measurement of Compressibility index. The BD and TBD ranged

from 0.716 ± 0.023 to 0.843 ± 0.062 g/ml and 0.782 ± 0.056 to 1.112 ± 0.010 g/ml respectively.

Hauser's Ratio: Hauser ratio ranged from 1.03 ± 0.15 to 1.46 ± 0.01 . The result indicates the good flowing properties of the pellets

Angle of Repose: Angle of repose ranged from $29^\circ \pm 3$ to $48^\circ \pm 2$. The results of optimized formulation was found to be $29^\circ \pm 3$ and hence pellets was found to have good flow ability.

Table. No-9. Micromeritic Properties of Dabigatran Etxilate Mesylate IR Pellets (F1-F7)

Sl.no	Formulation Code	Bulk density \pm SD (g/ml)	Tapped density \pm SD (g/ml)	Hausner's ratio \pm SD	Angle of Repose $\theta \pm$ SD ($^\circ$)
1	F1	0.793 ± 0.051	0.924 ± 0.003	1.17 ± 0.05	34 ± 2
2	F2	0.752 ± 0.002	0.853 ± 0.010	1.13 ± 0.01	32 ± 3
3	F3	0.768 ± 0.023	0.848 ± 0.036	1.10 ± 0.19	30 ± 4
4	F4	0.719 ± 0.009	0.805 ± 0.015	1.12 ± 0.05	31 ± 1
5	F5	0.765 ± 0.052	0.834 ± 0.023	1.09 ± 0.10	27 ± 3
6	F6	0.821 ± 0.062	0.847 ± 0.009	1.03 ± 0.12	28 ± 3
7	F7	0.816 ± 0.078	0.924 ± 0.069	1.13 ± 0.15	31 ± 2

Particle size distribution of Dabigatran Etxilate Mesylate IR Pellets for Optimized Formulation (F6):

Particle size distribution for Dabigatran Etxilate Mesylate IR pellets optimized formulation (F6) was

done. Cumulative percentage retained on ASTM sieve (#) number 14 and 25 were found to be 0 and 97.67% respectively.

Table. No-10. Particle size distribution of Dabigatran Etxilate Mesylate IR Pellets for Optimized Formulation (F6)

S. No	# Sieve No	Initial Weight of # sieve (g)	Final weight (g)	Blend Weight (g)	% Retained	Cumulative % Retained
1	14	340.5	340.5	0	0	0
2	25	299.8	312.7	12.9	43	97.67
3	B Plate	376.4	377.3	0.9	3	100.00

Results of Assay and Water Content by Karl Fisher Method for Dabigatran Etxilate Mesylate IR Pellets Formulations (F1-F7):

Assay (%): Assay was done for formulations F1-F7. The results were found to be ranged from $97.36 \pm 0.265\%$ to $101.5 \pm 0.058\%$ respectively. From formulation F1 to F7 assay was found to be

within limits (Not less than 95% and not more than 105%).

Water Content by KF (%): Water Content by KF (%) was done for formulations F1-F7. The results were found to be ranged from $1.0 \pm 0.023\%$ to $2.6 \pm 0.123\%$ respectively.

**Table. No- 11. Results of Assay and Water Content by Karl Fisher Method for Dabigatran Etextilate Mesylate IR Pellets Formulations (F1-F7)**

S. No	Formulation Code	Assay (%)	Water by KF (%w/w)
1.	F1	99.78±0.012	1.0±0.023
2.	F2	100.0±0.095	1.9±0.075
3.	F3	98.65±0.235	2.4±0.029
4.	F4	101.5±0.058	3.0±0.024
5.	F5	97.36±0.265	1.6±0.056
6.	F6	100.1±0.084	1.8±0.245
7.	F7	99.87±0.045	2.6±0.123

Evaluation of Parameters of Dabigatran Etextilate Mesylate IR Capsules (F1-F7):

The prepared capsules were evaluated for various physical parameters namely– Weight variation, lock length and disintegration.

Weight Variation Test: The average weights of capsules for all formulations are present in Table. No-7.1.10 All the formulations (F1-F12) passed weight variation test as per the Pharmacopoeial limit of 5%.

Lock Length: The lock lengths of capsules were ranged from 18.73 ± 0.21 to 19.31 ± 0.011 mm (Table. No-7.1.10). Capsules mean lock lengths were uniform in all formulations.

Disintegration Time: The disintegration time of capsules from all formulations (F3-F12) were ranged from 6.12 ± 0.754 to 8.12 ± 0.478 mins.

Table. No-12. Evaluation of Parameters of Dabigatran Etextilate Mesylate IR Capsules (F1-F7)

S.No	Formulations	Average Weight (mg) (±SD)	Lock Length (mm)	Disintegration Time (min)
1	F-1	455 ± 1.28	18.98 ± 0.12	6.23 ± 0.012
2	F-2	446 ± 1.15	18.96 ± 0.26	6.42 ± 0.452
3	F-3	468 ± 1.32	18.89 ± 0.18	6.12 ± 0.754
4	F-4	443 ± 1.56	18.73 ± 0.21	7.11 ± 0.561
5	F-5	454 ± 1.45	18.95 ± 0.15	7.42 ± 0.651
6	F-6	453 ± 1.36	19.01 ± 0.11	6.55 ± 0.014
7	F-7	438 ± 2.98	18.91 ± 0.24	8.12 ± 0.478
8	Innovator	445 ± 1.28	19.31 ± 0.11	7.13 ± 0.029

Table. No-13. Comparative *In-vitro* Dissolution profiles of Dabigatran Etextilate Mesylate IR Pellets (F1-F7)

Time (min)	Cumulative % Drug Release						
	F1	F2	F3	F4	F5	F6	F7
0	0	0	0	0	0	0	0
10	65	40	50	68	70	75	78
20	75	73	71	85	79	91	94
30	96	100	95	98	96	99	96
45	101	101	95	99	98	100	99



Fig. No-4. Comparative *In-vitro* Dissolution Profile of Dabigatran Etexilate Mesylate IR Capsules (F1-F7)

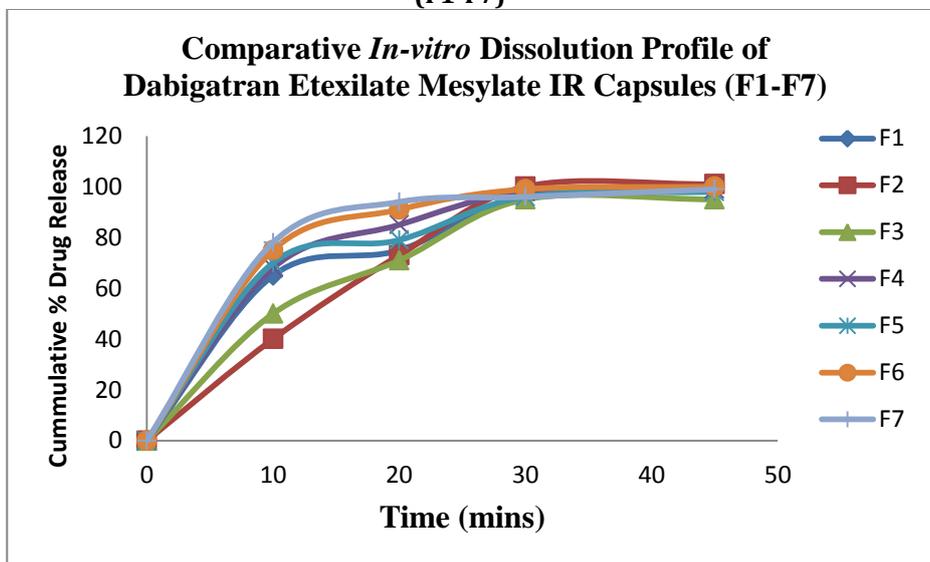


Table. No-14. Comparative *In-vitro* Dissolution profiles of optimized batch(F-6) with innovator:

Time(min)	Cumulative % Drug Release	
	Innovator	F6
0	0	0
10	81	75
20	92	91
30	100	99
45	100	100

Fig. No-5. Comparative *In-vitro* Dissolution Profile of Innovator & Optimised Formulation of Dabigatran Etexilate Mesylate IR Capsules (F6)

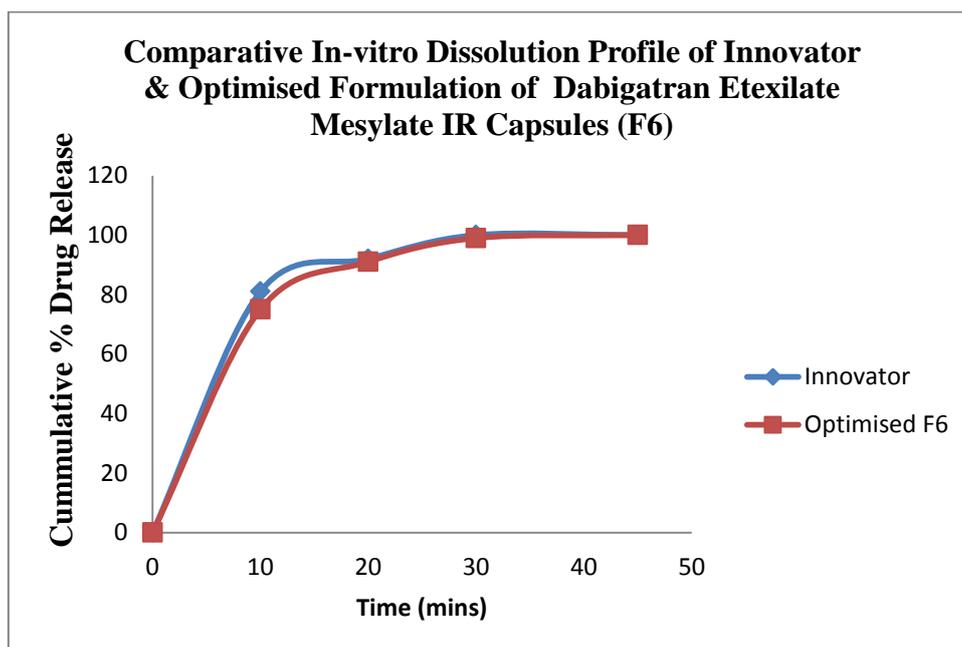
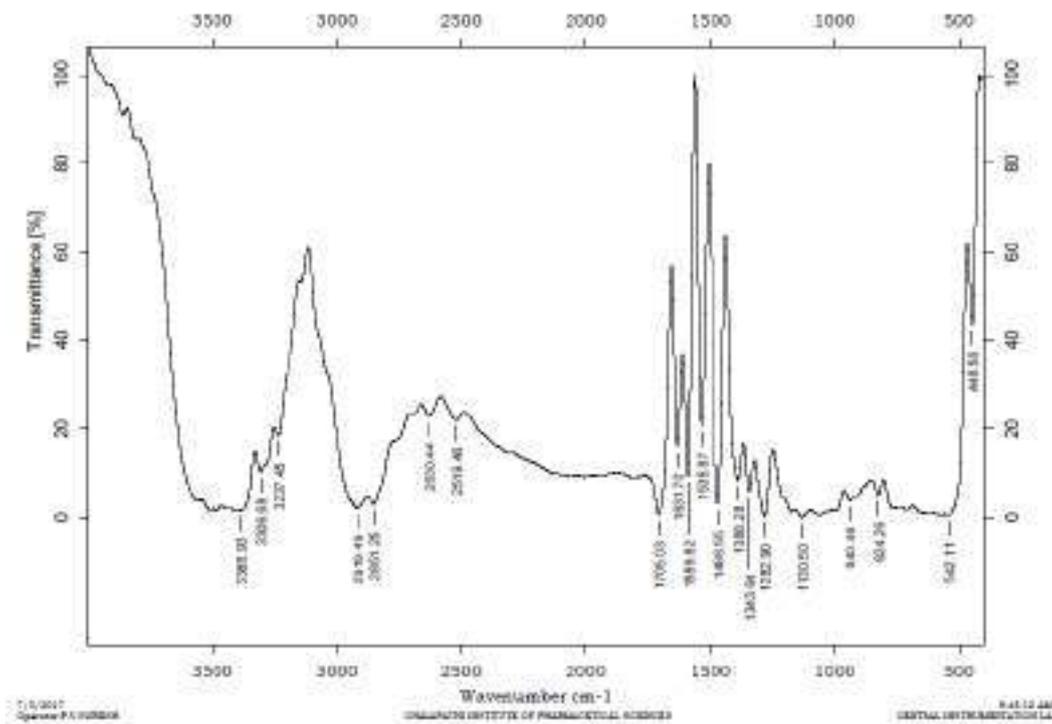




Figure 6.FT-IR SPECTUM OF OPTIMISED FORMULATION



Statistical Evaluation between F6 and Marketed Product

The relevance of difference in the *in-vitro* dissolution profile of optimized formulation (F6) with that of marketed formulation was evaluated statistically.

Table. No-15. Statistical Evaluation of Optimized Formulation F6 and Marketed Product: Similarity and Difference Factors

Time	Innovator (R)	F-6 (T)	D=(Rt-Tt)	(Rt-Tt) ²	$\frac{1}{\sqrt{1 + \frac{\text{Sum}(R \sim T)^2}{n}}}$
0	0	0	0	0	
10	81	75	6	36	
20	92	91	0	0	
30	100	99	1	1	
45	100	100	1	1	

Table. No-16. Similarity and Difference Factors of Optimized Formulation F6 and Marketed Product

Parameter	Time point (5)	Limit
f1 Value	2.14	0-15
f2 Value	76.64	50-100



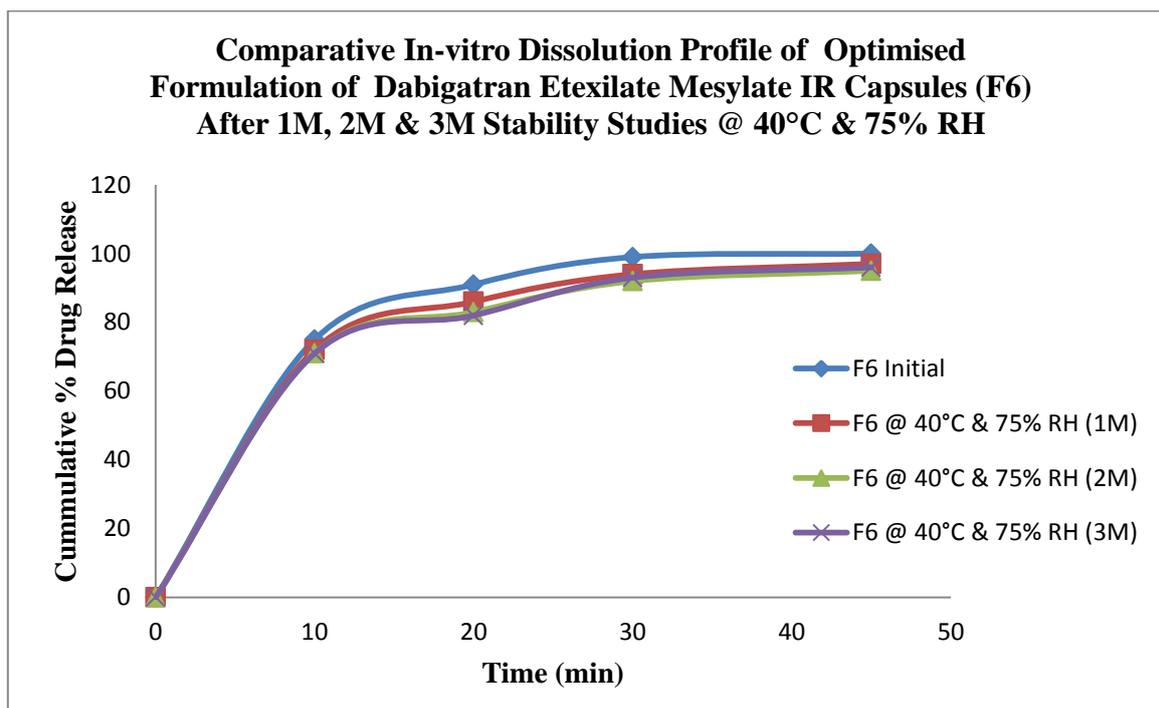
Table. No-17. Stability Studies of Optimized Formulation F-6

S.No	Formulation Code	Stability Conditions			
		Assay @ Initial	Assay (%) @ 40°C & 75% RH		
		0 Day	1 month	2month	3month
1	F-6	100.1	99.4	98.8	98.0

Table. No-18. In-vitro Dissolution Profiles Data of Dabigatran etexilate mesylate IR Capsules Optimized formulation (F6) after 1M, 2M & 3M Stability Studies @ 40°C & 75% RH

Time (min)	Cumulative % Drug Release			
	F6 Initial	1 st month	2 nd month	3 rd month
0	0	0	0	0
10	75	72	71	71
20	91	86	83	82
30	99	94	92	93
45	100	97	95	96

Fig. No-7. Comparative In-Vitro Dissolution Profile of Optimized Formulation of Dabigatran Etexilate Mesylate IR Capsules (F6) After 1M, 2M & 3M Stability Studies @ 40°C & 75% RH



DISCUSSION

In formulation F1 Tartaric acid pellets of 500 micron size were taken, Povidone was used as binder and lubrication wasn't done. The pellets were small in size, due to this there poor flow and sticking of pellets was observed. In formulation F2 Tartaric acid pellets of 700 micron size was taken, Povidone as binder and no lubrication was done. The pellets were observed to be brittle. Hence binder was changed. In formulation F3, Hydroxy propyl cellulose was taken as binder. The pellets were found to be brittle. Hence

trial has to be taken by reducing the concentrations of povidone K30 and PEG 400. In formulation F4, Tartaric acid pellets of 700microns were taken. Povidone K30 and PEG 400 concentrations were reduced by 2%. Pellets were good and no sticking was observed. But flow of pellets need to be increased. Trail with another binder was done. In formulation F5, Tartaric acid pellets of 700microns were taken. Hydroxy propyl cellulose and PEG 400 concentrations were reduced by 2%. Flow of pellets need to be increased. Hence lubrication of pellets was



done. In formulation F6, Povidone K30 as binder and lubrication was done with SLS and Talc. Flow of pellets was good. A trial with HPC was taken by the addition of SLS and Talc. In formulation F7, HPC as binder and SLS and Talc was taken for lubrication. Flow of pellets was good.

Evaluation tests of capsules were done for all the formulations. Average weight for formulations (F1- F7) was in the range from 438 ± 2.98 to 468 ± 1.32 . Lock length for formulations F1- F7 was in the range from 18.73 ± 0.21 to 19.01 ± 0.11 . Disintegration time for formulations F1- F7 was in the range from 6.12 ± 0.754 to 8.12 ± 0.478 . *In-vitro* dissolution studies were performed for formulations F1- F7. The % drug release for formulations F1- F7 was in between 95-101%. Similarity and difference factor were done for all formulations. The F6 formulation showed similarity value 76.64 close to the innovator. Stability studies were done for optimized formulation for 3 months at 40°C & 75% RH. *In-vitro* dissolution was performed after 3 months. The % drug release was in between 95-100%.

The current investigation was predominantly founded on the "Detailing and Evaluation of Dabigatran Etexilate Mesylate Immediate Release Pellets 150mg" (Anti-coagulant) by liquid bed innovation. Different definitions of Dabigatran etexilate prompt delivery pellets were set up by utilizing diverse extent and mix of excipients. The aftereffects of the examination demonstrated that there was no physical change in drug excipient powder combinations. Pellets were readied and micromeritic reads were done for those, for example, point of rest, mass thickness, tapped thickness and Hauser's proportion for definitions (F1 – F7) were assessed and results were accounted for in Table. No-7.1.7. From the outcomes got by HPLC, the alignment bend was developed having relapse estimation of 0.999. Test estimations of the details were seen in the scope of 98 to 102%. Similarity examines were performed and it was seen that all the fixings utilized were viable with the medication. Definition (F6) was detailed by including Povidone K-30. The outcomes indicated 100% medication discharge was found in 45 min. In this way, detailing (F6) was taken as advanced plan. Quickened steadiness reads were performed for improved cluster (F6). Measure and Dissolution reads were performed for the upgraded detailing (F6) at 40°C and 75% RH for 1M and 2M. All the boundaries were discovered to be agreeable disintegration considers were performed and it was discovered that definition F6 have demonstrated best outcomes and equivalent with the trend-setter.

CONCLUSION

From the above experimental results it can be concluded that immediate release capsules of Dabigatran etexilate can be prepared by using different proportion & combination of excipients and we selected F6 as best formulation based on dissolution profile and physical characteristics. Formulation (F6) showed cumulative drug release in 45 min and showed good flow properties when compared to other formulations. Finally I conclude the optimized batch (F-6) having similar drug release with the innovator similarity factor (f2) was found to be within limits 76.64 and Accelerated stability studies were performed. Assay and Dissolution studies for the optimized formulation (F6) at 40°C & 75% RH for 1M and 2M were found to be 99.4, 98.8 & drug release was 97, 95% at 45 mins respectively.

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STUDY OF VARIOUS PROTOCOLS OF IPv6

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ABSTRACT

Currently, there are various Internet routing Protocols available over the Internet network. However, the data of these different types of mobile routing protocols are not sufficient. Moreover, the design of network topology for these mobile routing protocols are least developed. Having known these issues, this research aims to investigate the performance of different types of mobile routing protocol namely; mobile Internet Protocol version 6 (MIPv6), Fast Handover Mobile Internet Protocol version 6 (FMIPv6), Hierarchical Mobile Internet Protocol version 6 (HMIPv6) and Fast Handover with Hierarchical Mobile Internet Protocol version 6 (FHMIPv6) in Distributive Mobility Management(DMM) environment. A topology for all the mobile routing protocols is proposed to be designed and developed. At the end of this survey, it is believed that the design and development of all protocols performs better as compare to the others routing protocols over the Internet.

INDEX TERMS— IPv4, IPv6, MIPv4, MIPv6, FMIPv6, HMIPv6, PMIPv6, DHMIPv6, FHMIPv6 and DMM.

1. INTRODUCTION

The technology of wireless communication is increasingly utilized by the Internet users. Gradually, more and more users connect wireless devices to the Internet. These cause lots of and disconnection because of the huge number of users. Therefore, lots of researches have been conducted to solve the congestion and disconnection issues over the wireless communication.

In all-IP mobile networks, IP mobility is a crucial concept to meet the demand of ubiquitous Internet connectivity as well as new service requirements such as seamless handover across heterogeneous networks, consistent quality of experience and stringent delay constraints. Considering conventional IP mobility management (e.g., Mobile IPv6, Proxy Mobile IPv6(PMIPv6) [1]), which leverages on the centralize mobility management approach in a flat architecture, it raises several issues for the network operator like inefficient use of network resources, poor performance, and scalability issues [2].

A novel concept, the so-called distributed or dynamic mobility management (DMM) [3] has been introduced to overcome the limitations of the centralized mobility management. The key concepts of DMM are: **i)** the mobility anchors are placed as close as possible to the mobile nodes(MNs); **ii)** the control and data plane are distributed among the network entities located at the edge of the access network; and **iii)** the mobility support is provided dynamically to the services/MNs which really need it. While DMM is expected to be an effective solution in terms of IP

mobility management. To deal with a huge number of devices and traffic, IP multicast can be considered as a valuable solution from service point of view. In some cases, IP multicast can provide significant advantages compared to unicast regarding overall resources consumption (e.g., bandwidth, server load and network load)and deployment cost to deliver the traffic, especially video traffic [4][5].

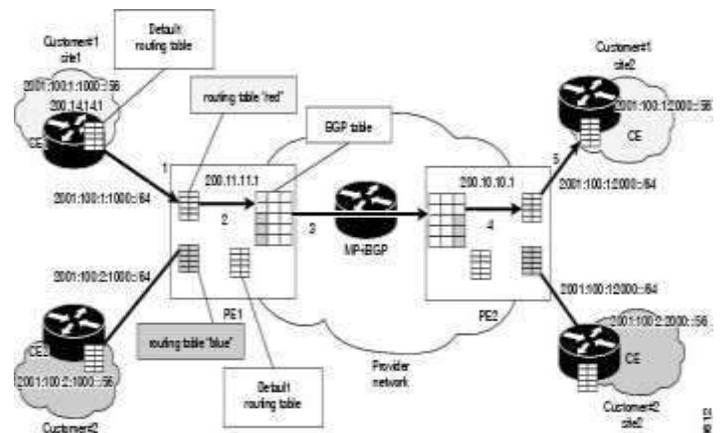


Figure 1

2. Overview of Ipv4

Internet Protocol Version 4 (IPv4) is the fourth revision of the IP and a widely used protocol in data communication over different kinds of networks. **IPv4** is a connectionless protocol used in packet-switched layer networks, such as Ethernet. The address space is of 32 bits or 4 bytes. The length of IP header is 20–60 bytes depending on IP option Self-Configuration Manual or use DHCP based IP configuration Broadcast Technique to transfer the address to all nodes on its networks. Fragmentation Applied by host and router (destination) and used the following fields for fragmentation ID, flag and offset Map Addresses. To use node addresses recorded in Dynamic Network Services (DNS) for mapping node names securely an IP security (IPsec) header is used as an optionally service for protecting the packets. Lifetime of datagram uses time to live (TTL) which is used to determine the lifetime of datagram on the network. Furthermore, IPv4 does not support packet identification. To overcome this problem IPv6 had introduced.

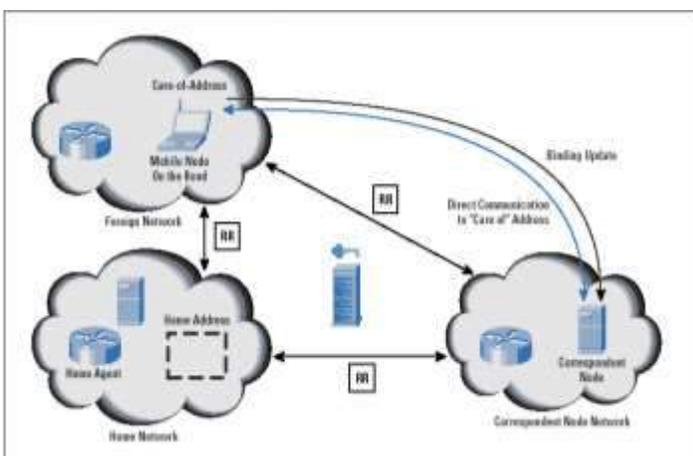


Figure 2

3. Overview of IPv6

IPv6 is an updated version of IPv4, proposed by IETF. IPv6 improves several features of IPv4, such as extend the address range, provides support for real-time application (e.g., audio/video streaming), more control on level of QoS, and integrating IP security (IPsec) and support the mobility through the mobile. IPv6 uses the term packet rather than datagram. The meaning is the same, although the formats are different. IPv6 uses the term node for any system that runs IPv6, that is, a host or a router. An IPv6 host is a node that does not forward IPv6 packets that are not explicitly addressed to it. A router is a node that forwards IP packets not addressed to it. The IP addressing model requires unique network numbers that can be assigned to all IP networks, while they are connected to the Internet. The growth of TCP/IP usage into new areas outside the traditional connected PC will shortly result in a rapid explosion of demand

for IP addresses. For example, widespread use of TCP/IP for interconnecting hand-held devices, electronic point-of-sale terminals, or web-enabled television receivers (all devices that are now available) will enormously increase the number of IP hosts. The address space of IPv6 is 128 bits or 16 bytes' length size of address. The length of IP header Fixed length, which is 60 bytes and did not include IP. It uses Multi-cast ad (link-local scope) technique. It Use AAAA (Quad A) record in Domain Name System (DNS) to map node names to IPv6 addresses. Instead of TTL mechanism, hop limit used to determine the limit number of routers that must cross by the packet before it considered an invalid packet. Despite all the benefits of IPv6, it still has a critical issue with respect to the actual deployment in complete. This is correlated to the time needed for mapping IPv4 to IPv6 which is largely attributed to the incompatibility with the old generation devices, for instance, the old generation infrastructure such as routers works on IPv4, which required changing their routing table.

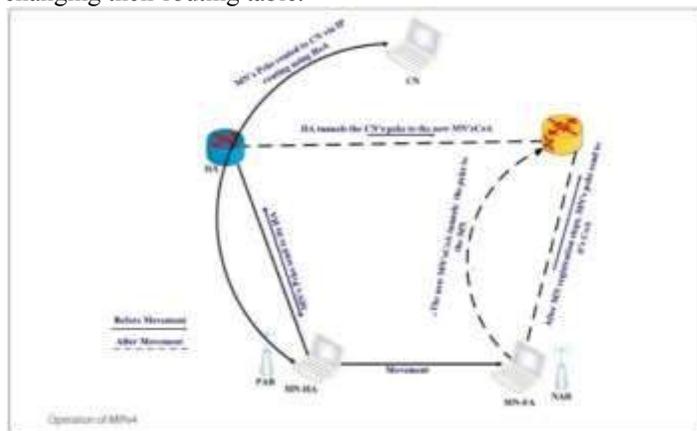


Figure 3

3.1 MIPv4

The MIPv4 architecture is the first breakthrough to address, the IP management, and was designed and produced by the IETF. The main aim of developing this protocol is to make the nodes continue connecting to the networks, even when they are in movement mode. The HA, FA, CoA, CN, MN, MBT, and VL are new terminologies introduced by MIPv4 which are already stated in the previous section as shown in Fig. 2

Despite there are benefits occurring as a result of using the MIPv4, however, there exist several drawbacks, such as long communication routing protocol (triangular routing) due to the dependency on the HA to send and receives the packets through it between MN's CN and MN. Therefore, extra time is needed to deliver the packets to their destination, due to the triangular routing problem, putting extra burden on the network entities. Furthermore, all the packets on-the-fly will be lost during the handover process because the new visited network cannot inform the old visited network about the movement of the MN.



3.2 MIPv6

MIPv6 protocol, developed by the IETF working group [6], helps to resolve the issues that arise in MIPv4. MIPv6 is derived from MIPv4 architecture. The functionality of IPv6 is more capable and easier to implement and solves numerous limitations existing in MIPv4 limitations, supporting the efficient mobility management for MN. MIPv6 allows a MN to roam within the MIPv6 domain without losing or corrupting any of its connections with CN, whereas MIPv4 protocol suffers from the long routing protocol due to the dependency on the HA and FA to deliver the datagram between the MN and its CN. This is due to the fixed address home of address (HoA) given by the HA to the MN, to maintain the MN accessible by its CN at anytime, anywhere. Moreover, all the packets will reach to the MN by the normal routing protocol without any modification if the MN is still in its home network.

The MN will be reachable by the provisional CoA given by the new visited network that MN moves to, and the MN will not be accessible any more by the HoA. Moreover, in the MIPv6 the HA intercept all the flying packets to the MN's HoA and redirects the packets to the current MN's CoA. Thus, the MN must update its HA on its current visited network (CoA). Accordingly, all the MN's packets which are received by the HA are redirected via tunnel to the MN's HoA to its visited network (CoA). Therefore, directly tunnel ends are used to transfer the data between the MN and the MN's HA, unlike the MIPv4 that used the FA. Additionally, the MIPv6 solve several limitations in MIPv4 such as a triangular routing problem and enhance the performance of the network by introducing route optimization scheme. This can be done through exchange message query response between the MN and its CN, to establish a secure and direct connection, to improve the routing between the MN and its CN in the MIPv6. Thus, no more interception is experienced by the packets traveling between the MN and its CN by the HA. This improvement makes the network more secure and reliable and

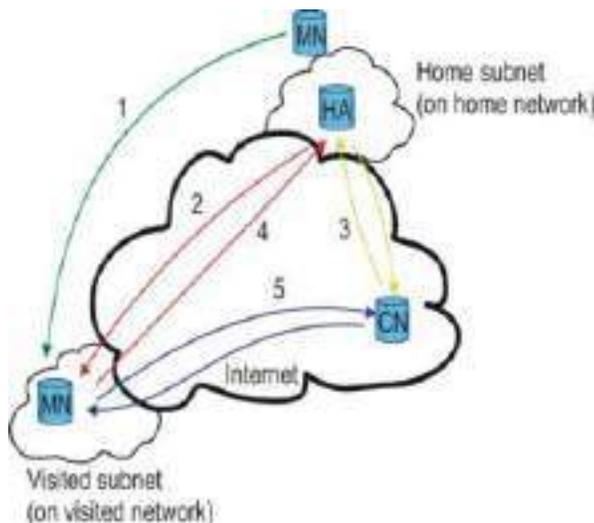


Figure 4

minimizes the network load [6]. Furthermore, the packets that are sent by the MN to its CN are delivered to the MN's CN address directly. In spite of the benefits associated with this protocol, it is still not appropriate and desirable to be deployed in real implementation due to the following factors, including intense packet loss, intense signaling, and long handover latency. Furthermore, every time the MN moves to a new sub-domain, it must update its CoA to its HA and MN's CN without any consideration to the mobility if its local or global. Moreover, building an IPv6 tunnel cause extra overhead and as a result requires an additional IPv6 header [7]. Due to these limitations, that make the users dissatisfied, especially for the real-time applications such as VoIP and audio /video streaming, so several investigations [8] and mobility enhancement protocol appeared such as FMIPv6 [9] and HMIPv6 [10] to improve the MIPv6 performance.

3.3 FMIPv6

To overcome the weaknesses of MIPv6, an enhanced protocol was introduced by [9] and named as Fast handover for MIPv6. This protocol prevents the service disruption when the MN in motion and also helps to minimize the needed time for MN to move between the sub-domains during the handover associated with MIPv6 (handoff operation time). In the FMIPv6, the MN's are relieved from any mobility signaling by carrying out the handoversignaling burden through the FMIPv6 entities which are previous/old access point (PAR), new access point (NAR), and HA. The FMIPv6 have two kinds of handover operation, namely, Predictive handover and Reactive handover. In predictive handover, when the MN's change the link layer of attachment between the two access points, they are triggered by the link layer, whereas reactive handover is triggered by the network layer and it happens when the MN's moved out the current access network range (L3handover). In general, the main idea behind the development of FMIPv6 protocol is that when the MN initiates the L2 handover with NAR, the NAR will initiate the L3 handover with PAR. So, a bidirectional tunnel will be established between the NAR and PAR before completion of the L2 handover between the MN and the NA. This reduces significant time in the handover process. In the latter, a bidirectional tunnel will be established between the NAR and PAR, but this will happen after the completion of handover between the MN and NAR. In addition, to reduce the packet loss during the handover operation, buffering technique is used in either NAR or PAR or both of them together. Thus, after completion of handover rprocess, the buffered packets are forwarded into the MN. Despite all the issues related to MIPv6 which are resolved by the FMIPv6, the FMIPv6 still suffers from some limitations such as reordering the packets due to using multi-paths to forward the packets into the MN. Despite the fact that packet tunneling and buffering techniques minimize the packet loss during MN's movement, particularly for constant bit rate (CBR) services, however, they add extra processing and increases the load on the network link between NAR and PAR. This is due to the consecutive tunneling and de-tunneling of the

buffered packets. The reliable and accurate tunneling between the NAR and PAR is dependent on the availability of a trigger and the appropriate handover decision timing. Some other well-known problems associated with this protocol include high handover latency and intense signaling. NEMO is another protocol that extends the MIPv6 [11]. The main objective of this protocol is to support the mobility for all MNs in the mobile network, by the mobile router (MR), as well as keep the MN's in the mobile network continuity accessible even when they are in movement. So, all the signaling and tunnel configuration related to mobility management is taken care by the MR instead of the MNs. The nodes have their IP addresses associated with the Mobile Network Prefix (MNP) of the NEMO which is located at the home agent of the mobile router. For route optimization support, NEMO basic support (B.S) has no specific standards. With respect to mobility, the NEMO B.S is based on mobility functionality comprised in the mobile node which is a router in this scenario. In order to minimize the signaling cost between the 6LoWPAN MR and the 6LoWPAN access gateway, a compressed mechanism used by the Lightweight NEMO protocol was introduced by [12] to compress the mobility header. Nested [13] has been introduced to solve the MN movement, where it moves to another mobile or static network.

3.4 HMIPv6

A new scheme protocol called the HMIPv6 local mobility management was proposed by [10]. The aim of this protocol is to enhance the MIPv6 architecture so as to reduce

continuously. Two CoAs associated with the MN in the HMIPv6 protocol: RCoA and Local Care of Address (LCoA). The RCoA address is used to make the MNs accessible, while MNs roam within the MAP network. On the other hand, the LCoA address is used to make the MNs accessible when the MNs are inside the visited network. Roams inside the MAP domain is called intracommunication (local mobility), whereas roams between different MAP domains is called the intercommunication (global mobility). The hierarchical addressing allows MNs to roam within the MAP domain, without the need to inform neither their HAs nor CNs. The sequence processes of the HMIPv6, are illustrated as follows. A handover process will be applied by a MN to disconnect from a previous AR (PAR) and connect to a new AR (NAR). The MN must send a binding update (BU) message to its HA and CN to inform them with its new CoA, this message will go through a MAP to reach the HA/CN. The response message of BU from the HA/CN also will go through the same way to reach the MN. If the MAP located far away from the HA/CN, this will definitely cause time delay that required to deliver the BU message in both directions between the MAP and HA/CN. Due to the aforementioned drawback, it is logical to have a provisional HA on the MAP. Thus, when the MN roams in the same MAP domain, it only needs to update the MAP, then the address of the MNs in this case is LCoA. The time that was needed for traveling a BU message between the MAP and HA/CN is eliminated. In general, the HMIPv6 is more efficient and more desirable for intracommunication than the MIPv6. Due to this, the hierarchical addressing handles the MN registration rather than the global IP communication in the MIPv6 network. In general, all the host-based protocols would not be a preference in selection for the IoT especially as the devices are highly constrained in terms of power, memory size, and the processor. The lack of preference comes as a result of the involvement of MN in the mobility process which leads to increase the MN complexity and waste on air resources. Furthermore, these protocols suffer from several issues such as intense signaling, long handover, and high packet loss

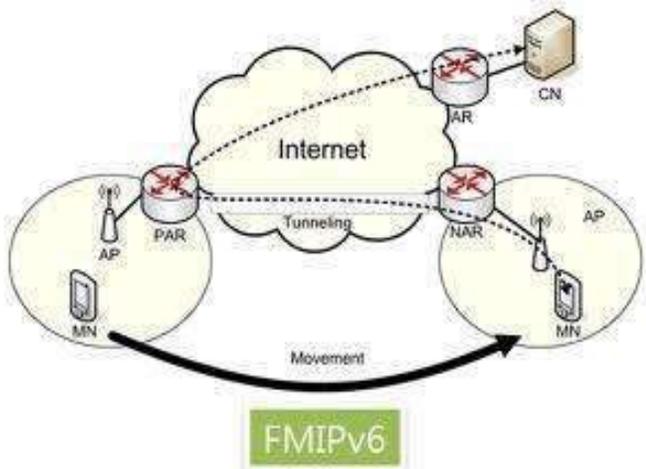


Figure 5

the signaling overhead and handover latency that occur during the handover mechanism. For this reason, the HMIPv6 architecture added a new entity named, Mobility Anchor Point (MAP). This new local entity which is addressed by a Regional CoA (RCoA) has the capability to support several Access Routers (ARs). These ARs are responsible for determining the coverage area of the MAP and using the broadcast mechanism to announce itself

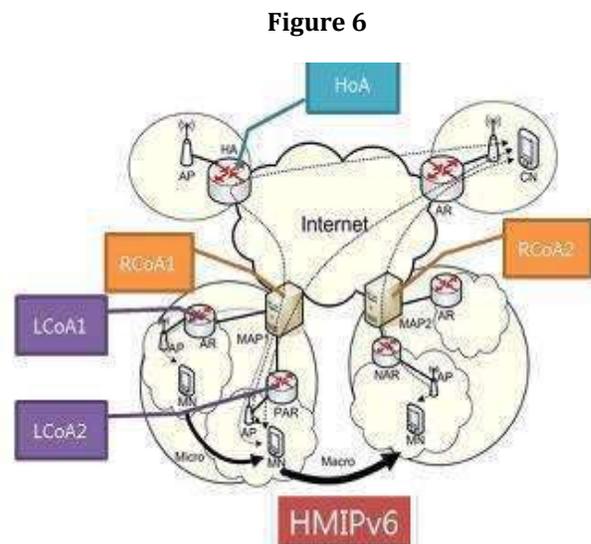


Figure 6



which lead to degradation in the level of QoS.

3.5 FHMIPv6

Fast Hierarchical Mobile Internet Protocol version 6 (FHMIPv6) comprises in two parts that are, Inter network and Intra network. This study combines both the technologies and produces an enhanced Mobile Internet Protocol (MIP). It is the combination of Fast Handover Mobile Internet (FMIP) and Hierarchical Mobile Internet Protocol (HMIP). This combination combines advantages from both the Internet Protocol (FMIP & HMIP) that generates lower packet losses, lower handover delays and better throughput. The FHMIPv6 operation begins with L2 handover anticipation where the MN sends RtSolPr message containing information of NAR to MAP. Next, MAP sends out PrRtAdv message to the MN, which contains information of New Link Care of Address (NLCoA) for MN to use in NAR region. Then, the MN sends out Fast Binding Update (FBU) to MAP, which encloses Previous Link Care of Address (PLCoA) and IP address of the NAR. Once MAP received FBU from MN, MAP sends out Handover Initiate (HI) to NAR. In response to the HI message, NAR sets up a host route for the MN's PLCoA and responds with a Handover Acknowledge (HACK) message. A bi-directional tunnel between MAP and NAR is established. After that, MAP sends out Fast Binding Acknowledgement (FBACK) toward MN over PAR and NAR. Then, MAP begins to forward data packets destined to MN to the NAR by using the established tunnel. Once the MN is in NAR, it sends out Fast Neighbor Advertisement (FNA) to the NAR and

NAR returns the FNA-ACK to the MN. Then, MN sends Local Biding Update (LBU) to MAP. Next, the HA performs Duplicate Address Detection (DAD) and updates the binding cache. Then, MAP sends a Binding Acknowledgement (BBack) to MN. After this process, MN sends binding update to its HA and active CN's with NLCoA as its source address and HA, CN's address as destination address. Next, inter network handover begins, that is allowing the data to flow through without having MN2 be in the radius of New Access Router (NAR). MN1 is able to reconfigure itself to be a mesh router and MN2 connects to MN1 as mesh client to be able to communicate with each other as a mesh network. By implementing this hybrid inter network connection, the data can reach the designated destination in less time compared to conventional wireless network method.

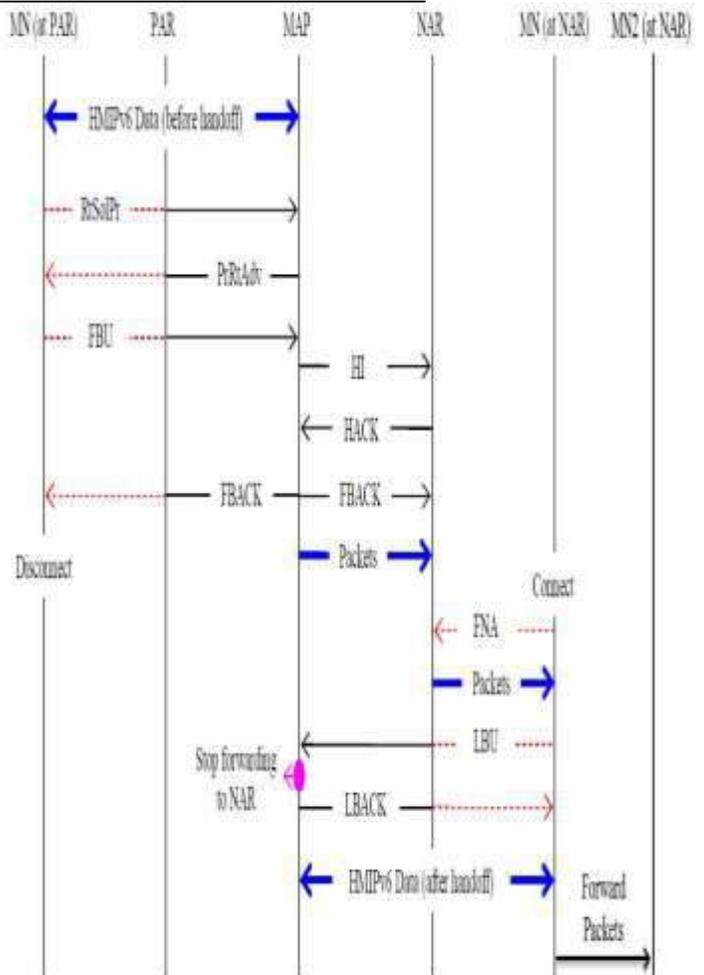


Figure 7

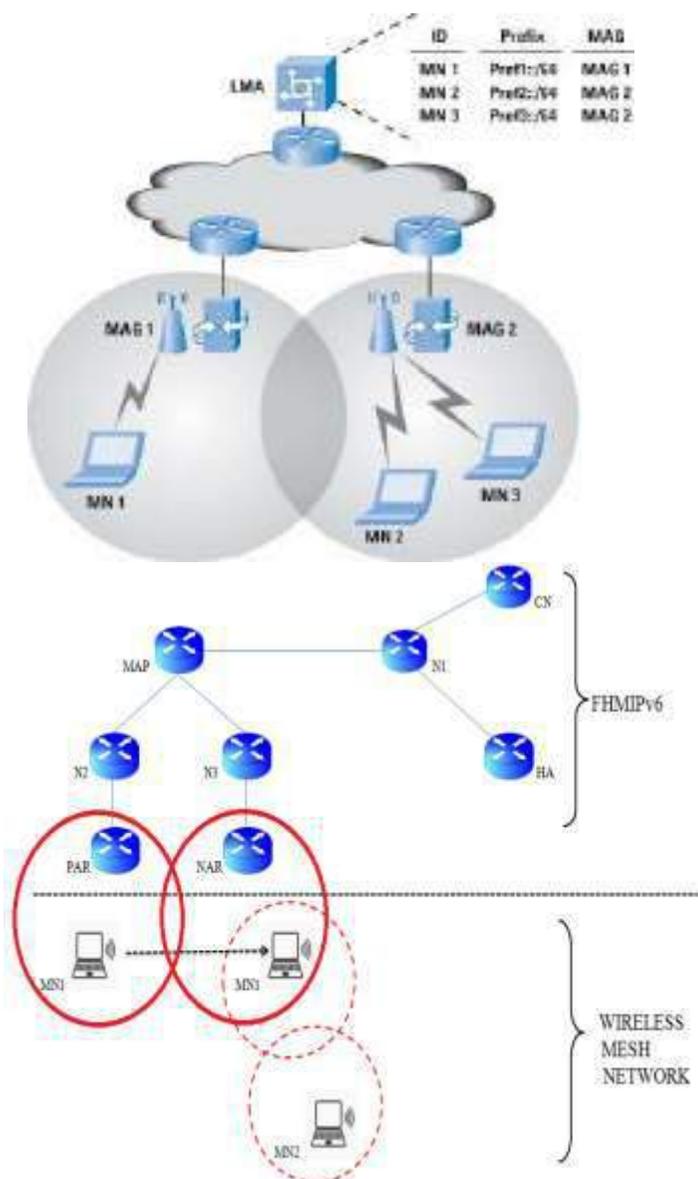


Figure 8

3.6 PMIPv6

To overcome the drawbacks associated with host-based protocols, proxy-based protocols are presented and proposed by the IETF working group such as PMIPv6 and its extension schemes and protocols such as SPMIPv6 and CSPMIPv6. To meet energy efficiency requirements, proxy-based protocols relieve the sensor nodes from any mobility-related management in handoff process, in order to reduce the signaling overhead, signaling costs, and handoff registration during the HO process. These protocols are covered in this section.

PMIPv6 is implemented and designed by IETF to settle mobility challenges associated with network management at the network layer [14]. The standardized protocol is created to support network-based localized mobility management, which

makes the MN free from any IP-mobility related signaling when the MN roams, hence, the proxy mobility functionality takes the burden of all the mobility related signaling instead of MN, unlike the MIPv6 protocol.

PMIPv6 is derived from MIPv6 by reusing some functionality (ex. HA) and extending the signaling. To make the MN free from any involvement in mobility related signaling when the MN is in motion, the PMIPv6 added two novel entities named, LMA and MAG. The key characteristic of LMA is to maintain the IP-interface of MN to continue connecting with the ongoing session even when the MN roams between sub-domains. From the viewpoint of MN, the PMIPv6 domain seems it as home network, while the key role of the MAG which has some capability is to support the interface connectivity in the PMIPv6 domain. Once the MN attaches the MAG domain to the PMIPv6 domain, the MAG (serving network) triggering the required signals to register and authenticate the MN and allocates a unique home network prefix (HNP) to every MN using per-MN-Prefix addresses model as illustrated in [14]. The good thing of using this prefix address is to make the MN feel always that the entire PMIPv6 domain is a home network and can get its home-of-addresses (HoA) on any access network.

This is achieved by making the MN prefix following the MN wherever the MN roams in the PMIPv6 domain. It is unlike the MIPv6 in which there is no need to configure the CoA in the MN. For more details about the PMIPv6 works and its terminologies the work by [14] can be reviewed.

Despite the benefits that the PMIPv6 gives, like reducing the handover and reducing the time needed for signaling update comparing to MIPv6, still, it suffers from several limitations due to the triangle routing protocol between the MN, LMA, and CN [15]. This centralization leads to degradation of the quality of services (QoS) that is a necessity for sensitive applications such as video/audio applications and VIOP. Furthermore, PMIPv6 suffers from another barrier which is the limitation of MN on its domain. This could be a problematic for IoT equipment which uses diverse applications [16, 17].

3.7 DHMIPv6

Hierarchical Mobile IPv6 management (HMIPv6) [18] divides mobile node's (MN) mobility [19] into micro-mobility and macro-mobility. When a MN moves within a particularly hierarchical domain, then micro-mobility; In this case, HMIPv6 utilize local mobility management to reduce the amount of signaling generated by the registration to the correspondent nodes (CNs) and to the home agent (HA). when the MN moves out to a new domain, then macro-mobility, the mobility of the MN will be managed by the standard

Mobile IPv6 management (MIPv6) [20]. Mobile Anchor Point (MAP) is a substitute of "Home Agent" (HA) in each domain of the network which hides user's mobility from the outer domain.

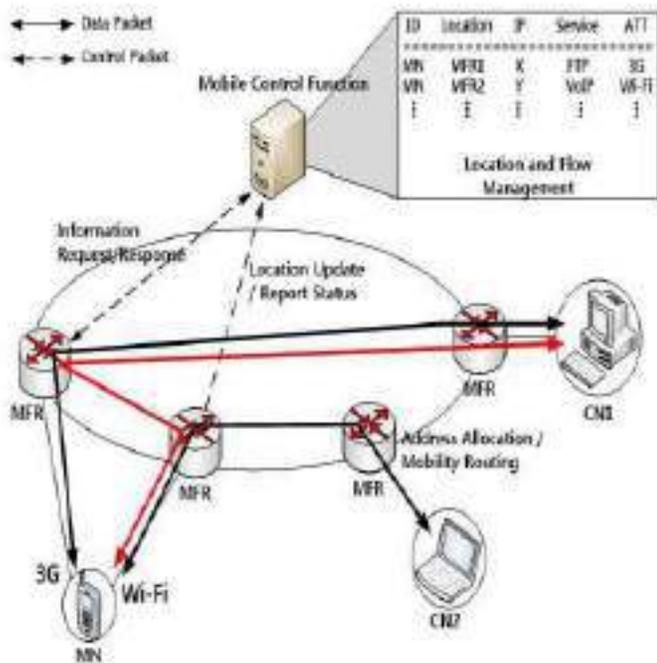


Figure 9

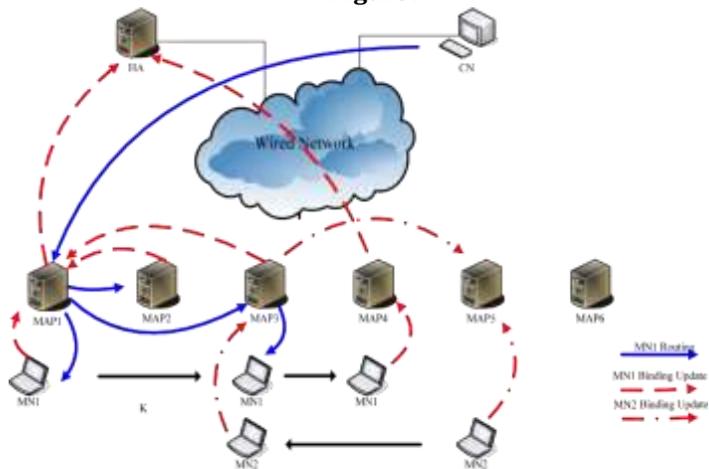


Figure 3. Position registration and packet routing in DHMIPv6

Figure 10

Then the binding updates are sent from MN directly to MAP rather than more distant HA or CNs when the MN stays in a specific region; meaning that MN's exact position is hidden from outer region and the signaling overhead is reduced. The MN needs to register its position to HA and CNs when it moves out of the specific region, just like the standard MIPv6.

Hierarchical Mobile IPv6 (HMIPv6) is an enhanced Mobile IPv6 for reducing signaling cost of location management. Multi-level Hierarchical Mobile IPv6 (MHMIPv6) can organize mobile region as a multi-level hierarchy architecture, which is more flexible to support scalable services. However, MHMIPv6 will bring additional packet processing overhead, and produce

negative impact especially on some mobile nodes (MNs) with relatively low movement characteristics. This paper proposes a dynamic hierarchical Mobile IPv6 (DHMIPv6) management, in which different hierarchies are dynamically set up to minimize the total cost for different MNs according to their movement characteristics respectively. Under such management MNs can select the monolayer or two-layer mobility anchor point(MAP) structure when they occur the handover at any time.

4DMM

Current packet-based mobile architectures, such as the 3GPP Evolved Packet System (3GPP EPS) and WiMAX, make use of IP as the enabling technology for both voice and data communications. This implies a key-role for IP mobility management in providing the ubiquitous always-on network access service. Even though today several applications do not require the network to provide IP mobility support (meaning IP address continuity), there are still many that do require it (e.g., voice or virtual private networking, to just mention a few of them). Unfortunately, current IP mobility protocols rely on these of a centralized and hierarchical architecture, which poses several critical issues as explained in more detail next. Mobility management schemes standardized by IETF for IPv6 networks are extensions to or modifications of the well-known Mobile IPv6 protocol (MIPv6) [21], and can be classified into two main families: client-based mobility protocols, and network-based mobility protocols.

Client-based mobility approaches, such as MIPv6 and Dual Stack Mobile IPv6 (DSMIPv6) [22], enable global reachability and session continuity by introducing the Home Agent (HA), an entity located at the home network of the Mobile Node (MN) which anchors the permanent IP address used by the MN, called the Home Address (HoA). The HA is in charge of defending the MN's HoA when the MN is not at home, and redirecting received traffic to the MN's current location. When away from its home network, the MN acquires a temporal IP address from the visited network – called Care-of Address (CoA) – and informs the HA about its current location. An IP bi-directional tunnel between the MN and the HA is then used to redirect traffic to and from the MN.

CONCLUSION

In this paper, MIPv4, MIPv6, FMIPv6, HMIPv6, PMIPv6, DHMIPv6, FHMIPv6 and DMM have been discussed in details. The aim of this paper is to compare all the above protocols to reduce the delay in wireless communication. Additionally, it aims to increase the throughput. Having decreased the delay and increased the throughput, these can provide better service quality to the wireless Internet users. Thus, we believe that having developed this proposed protocol, this enhanced protocol is able to improve the service quality of wireless communication. encouraged not to call out multiple figures or tables in the conclusion—these should be referenced in the body of the paper.

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CHEMICAL EVIDENCE SUPPORTING THE ICLUSION OF AMARANTHACEAE AND CHENOPODIACEAE INTO ONE FAMILY AMARANTHACEAE JUSS. (s.l.)

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Article DOI: <https://doi.org/10.36713/epra6001>

ABSTRACT

*In this study, separation of chemical compounds using Thin layer chromatography technique revealed close relationship between the studied members of the newly constructed family Amaranthaceae Juss. (s.l.). 68% of the calculated affinities between the studied species are above 50% which is an indication for close relationships. 90% is the chemical affinities reported between *Chenopodium murale* and three species of the genus *Amaranthus* despite of their great morphological diversity. Among the selected members of the chenopodiaceae, *Chenopodium murale* and *Suaeda monoica* are the most closely related species to all of the studied Amaranthaceae. 60%-88% and 54%-88% chemical affinities were reported for the two species with the Amaranthaceae members respectively. GC-Mass analysis of methanolic extracts of the studied species identified 20 compounds common between different species. 9,12-Octadecadienoic acid (Z,Z)-,2-hydroxy-1 and 7-Hexadecenal,(Z)- are the major components common between *Amaranthus graecizans*, *Digera muricata* *Aerva javanica* *Gomphrena celosioides* of the historical family Amaranthaceae and *Suaeda monoica* *Salsola vermiculata* *Chenopodium murale* *Cornulaca monocantha* of the historical family Chenopodiaceae. Most of the identified compounds are of pharmaceutical importance such as antioxidants, anti-inflammatory, and Anti-cancerous.*

KEYWORDS: *Chemical affinity; TLC; GC- Mass analysis; Amaranthaceae; Chenopodiaceae*

1. INTRODUCTION

The Chenopodiaceae and Amaranthaceae are morphologically related families of the order Caryophyllales. Plants of these families are characterized by free-central or basal placentation, curved embryos, presence of perisperm, beaked integuments, distinctive phloem plastid morphology,

and betalain pigmentation (Judd *et al.*, 2002). Amaranthaceae, and Chenopodiaceae were historically grouped by Bentham and Hooker (1880) in one subclass Monochlamydeae based on their panporate pollen grains while Engler and Prantl (1887;1898) grouped these families in Archichlamydeae based on some similar petals characters. Hutchinson (1926;



1959) placed Amaranthaceae, and Chenopodiaceae in the herbaceous group, the 'Herbaceae'; under the Order Chenopodiales. Takhtajan (1969) kept Amaranthaceae and Chenopodiaceae under Class Magnoliatae, Subclass Caryophyllidae and Super order Caryophyllanae in Order Caryophyllales.

Metcalfe and Chalk (1950) while reviewing the anatomical characters of these families and their taxonomic and phylogenetic positions reported that the Amaranthaceae and the Chenopodiaceae are alike in exhibiting similar anomalous secondary thickening. Similarities between these two families has been confirmed by molecular analysis (Manhart and Rettig 1994; Downie and Palmer 1994; Downie *et al.* 1997; Cuénoud *et al.* 2002). Recent molecular phylogenetic research strongly suggests the inclusion of Chenopodiaceae in Amaranthaceae to form the extended family Amaranaceae which contains 10 subfamilies, 180 genera, and approximately 2,500 species (APGII, 2003, APGIII, 2009).

In Sudan, Amaranthaceae is represented by 16 genera which are separately treated by Andrews (1952) as genera of the historical Amaranthaceae and Chenopodiaceae. Many species were reported as weeds of central Sudan (Braun *et al.*, 1991) and common species in northern Sudan (Bebawi and Neugebbohrn, 1991). Recently, (Darbyshire *et al.*, 2015) adopted the molecular classification of the extended family Amaranthaceae and reported their updated names in the annotated checklist for plants of Sudan and South Sudan.

The aim of this paper is to evaluate the significance of biochemical affinities between twelve selected species from the historical families Amaranthaceae and Chenopodiaceae which are recently grouped into one family Amaranthaceae Juss. (s.l.).

2. MATERIALS AND METHODS

Twelve plant species belonging to eight genera from the family Amaranthaceae Juss. (s.l.) were selected for this study. They were collected from their natural habitats in Sudan. These are *Amaranthus viridis*, *Amaranthus graecizans*, *Amaranthus spinosus*, *Amaranthus blitum*, *Digera muricata*, *Aerva javanica*, *Gomphrena celosioides* from the historical family Amaranthaceae and *Suaeda monoica*, *Salsola imbricate*, *Salsola vermiculata*, *Chenopodium murale*, and *Cornulaca monocantha* from the historical family Chenopodiaceae. Three grams of dried leaves of each

plant were extracted with aqueous methanol and kept for 24 hr in order to get concentrated extract. Three drops of the extracts were used for separation of compounds using Thin layer Chromatography (TLC) technique in which ethyle acetate-formic acid-glacial acetic acid-water (100:11:11:26) solvents system was used. Retention factors (R_f) values of the separated compounds were calculated. Biochemical affinities (PA) between the different species were calculated from the TLC plate following the method adopted by Ellison *et al.* (1962) as the ratio of the number of spots common in each pair of species to the total number of spots separated for the same pair. Three concentrated common spots were separately collected from the TLC plate using a spatula. Each spot was extracted with methanol and filtered to remove the silica. Extracts were subjected to Gas Chromatography and Mass Spectroscopy (GC-MS) analysis for the determination of bioactive volatile compounds. GC-MS analysis of the samples was carried out using Shimadzu Make QP-2010 with non-polar 60 M RTX 5MS Column. Helium was used as the carrier gas and the temperature programming was set with initial oven temperature at 40°C and held for 3 min and the final temperature of the oven was 480°C with rate at 100C [min.sup.1]. 2-μL samples were injected with split less mode. Mass spectra were recorded over 35 - 650 amu range with electron impact ionization energy 70 eV. The chemical components were identified by comparing the retention times of chromatographic peaks using Quadra pole detector with NIST Library to relative retention indices. Quantitative determinations were made by relating respective peak areas to TIC areas from the GC-MS.

3. RESULTS

Screening for compounds using TLC technique, resulted in many spots of different Retention Factor (R_f) values (plate1). Percentage of the paired affinity (PA) based on separated compounds are presented in (table1). 68% of the calculated affinities between the studied species are above 50%. The highest PA values (77% -90%) was recorded between *Chenopodium murale* and the Amaranthaceae species. 60%-88% and 54%-88% chemical affinities were reported between *Suaeda monoica* and the Amaranthaceae species respectively.

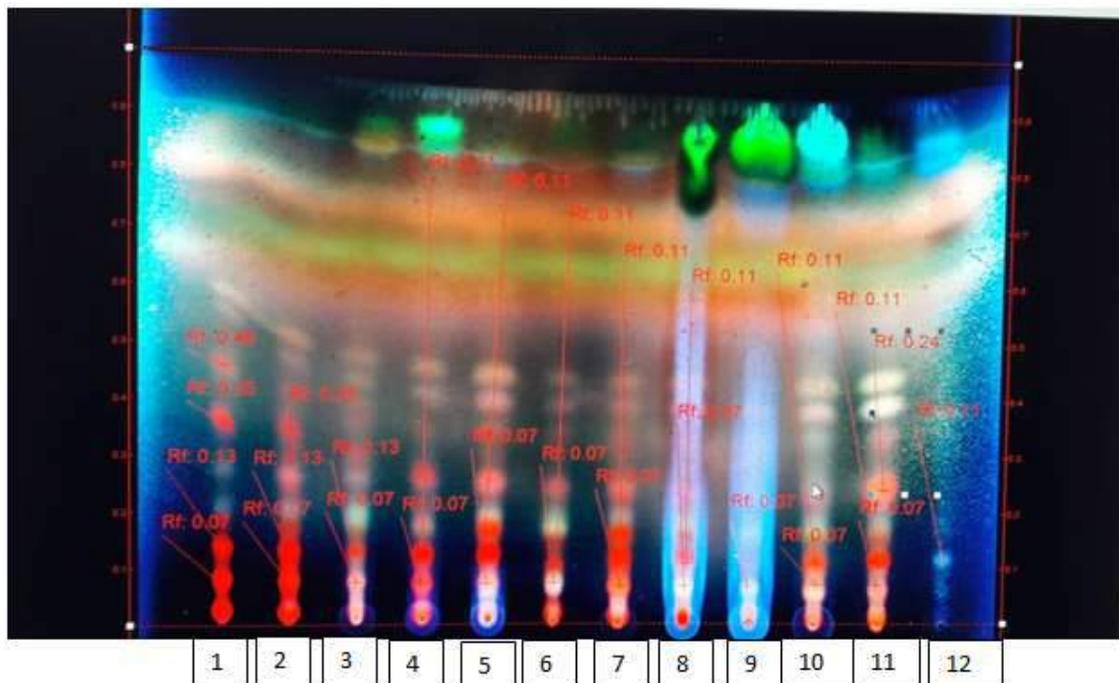


Plate 1. TLC chromatogram of methanolic extract of leaves of the studied species: (1) *Amaranthus viridis* (2) *Amaranthus graecizans* (3) *Amaranthus spinosus* (4) *Amaranthus blitum* (5) *Digera muricata* (6) *Aerva javanica* (7) *Gomphrena celosioides* (8) *Suaeda monoica* (9) *Salsola imbricate* (10) *Salsola vermiculata* (11) *Chenopodium murale* (12) *Cornulaca monocantha*

Table1. Percentage of the paired affinity (PA) based on all of the compounds separated on TLC for the studied species

Species	%age paired affinities											
	1	2	3	4	5	6	7	8	9	10	11	12
1	100	86	55	40	55	40	75	72	44	54	77	42
2		100	45	36	50	66	54	60	57	63	90	50
3			100	55	66	44	66	77	44	72	80	44
4				100	86	86	87	87	57	88	88	50
5					100	66	77	88	37	80	90	44
6						100	87	87	57	77	88	44
7							100	88	62	72	90	44
8								100	80	50	62	80



9									100	37	25	50
10										100	97	28
11											100	42
12												100

Key to the species: (1) *Amaranthus blitum* (2) *Amaranthus viridis* (3) *Digera muricata* (4) *Aerva javanica* (5) *Amaranthus graecizans* (6) *Gomphrena celosioides* (7) *Amaranthus spinosus* (8) *Suaeda monoica* (9) *Salsola imbricate* (10) *Salsola vermiculata* (11) *Chenopodium murale* (12) *Cornulaca monocantha*

Table 2 shows common concentrated spots separated from extracts of different plants. GC-Mass analysis of the common spots identified 20 organic compounds. GC-Mass chromatograms of the detected compounds were represented in figures 1, 2, and 3. *Aerva javanica*, *Amaranthus graecizans*, *Gomphrena celosioides*, *Digera muricata*, *Suaeda monoica*, *Salsola vermiculata*, *Chenopodium album*, and *Cornulaca monocantha* have a common spot of Rf value 0.011. GC-mass analysis of this spot identified nine compounds of which 9,12-Octadecadienoic acid (Z,Z)-

,2-hydroxy-1 and 7-Hexadecenal,(Z)- are the major components. 3-Cyclohexen-1-ol, 1-methyl-4-(1-methylethyl) represents the major component identified for the spot of the Rf value 0.13 which is separated for *Amaranthus blitum*, *Amaranthus viridis*, and *Amaranthus spinosus*. The spot of Rf value 0.35 is reported for both *Amaranthus blitum* and *Amaranthus viridis* 4-Hydroxy-2-methylbenzaldehyde represents the major component of this spot which contains 8 other compounds.

Table1. Concentrated spots selected for GC-Mass analysis

Plant species	R _f values of the separated compounds		
	0.11	0.13	0.35
<i>Amaranthus blitum</i>	-	+	+
<i>Amaranthus viridis</i>	-	+	+
<i>Amaranthus spinosus</i>	-	+	-
<i>Amaranthus graecizans</i>	+	-	-
<i>Digera muricata</i>	+	-	-
<i>Aerva javanica</i>	+	-	-
<i>Gomphrena celosioides</i>	+	-	-
<i>Suaeda monoica</i>	+	-	-
<i>Salsola imbricata</i>	-	-	-
<i>Salsola vermiculata</i>	+	-	-
<i>Chenopodium murale</i>	+	-	-
<i>Cornulaca monocantha</i>	+	-	-

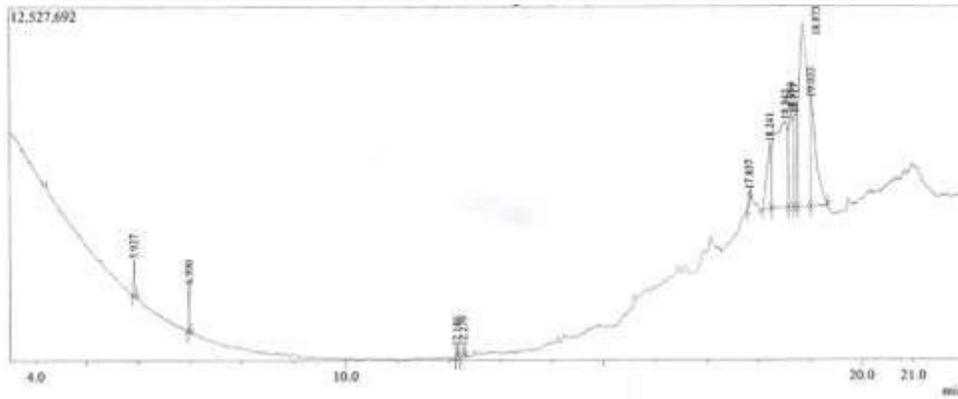


Figure 1. GC-MS chromatogram of Phytoconstituents obtained from spot Rf value 0.11

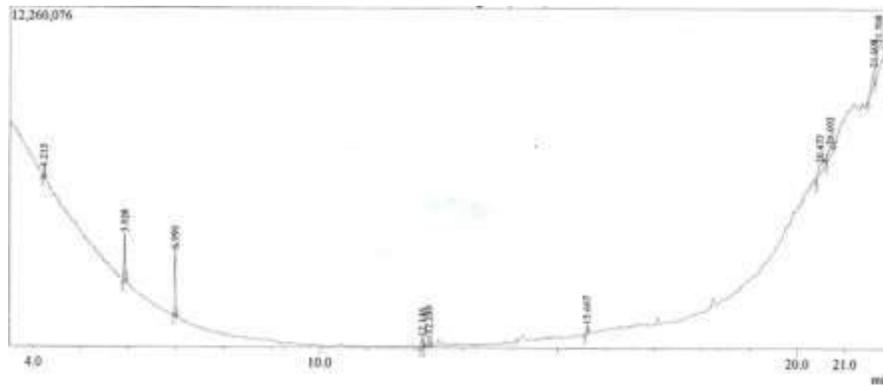


Figure 2. GC-MS chromatogram of Phytoconstituents obtained from spot Rf value 0.13

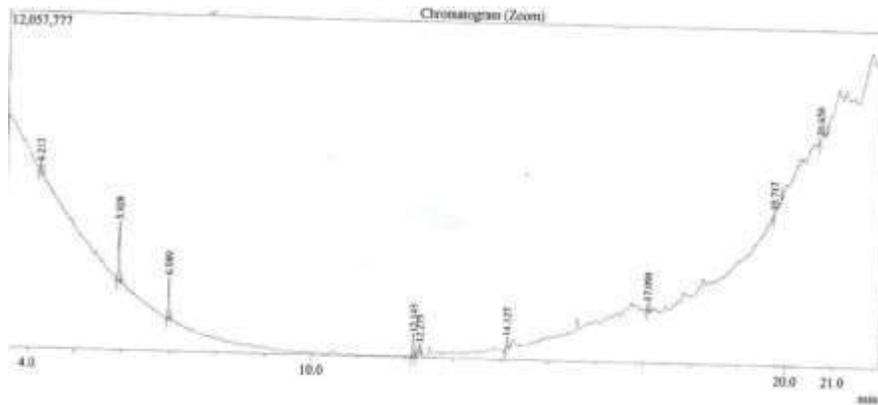


Figure 3. GC-MS chromatogram of Phytoconstituents obtained from spot Rf value 0.35

**Table3. Phytochemical constituents identified for the studied species**

Rf values	Identified compounds	R.Time	Area%
0.11	Benzaldehyde,4-methoxy-	5.927	0.93
	3,4-Dimethoxyphenylacetone	6.990	1.14
	Hexadecanoic acid,methyl ester	12.146	0.31
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6,9-dien	12.279	0.36
	7-Hexadecenoic acid,methyl ester,(Z)-	17.837	0.55
	Di-n-octyl phthalate	18.241	6.31
	7-Hexadecenal,(Z)-	18.542	25.31
	Octadecanoic acid,1-{{(1-oxohexadecyl)oxy}r	18.717	7.06
	9,12-Octadecadienoic acid (Z,Z)-,2-hydroxy-1	18.873	35.71
0.13	Benzaldehyde, 4-methoxy-	5.928	10.50
	Benzeneacetic acid, 3,4-dimethoxy-, methyl es	6.990	12.88
	Hexadecanoic acid, methyl ester	12.146	2.56
	7,9-Di-tert-butyl-1-oxaspiro(4,5)deca-6,9-dien	12.280	3.35
	Azacyclotridecan-2-one	15.607	2.65
	Patchouli alcohol	20.692	13.80
	6-Octen-1-ol,3,7-dimethyl-,propanoate	21.608	11.05
	3-Cyclohexen-1-ol, 1-methyl-4-(1-methylethyl)	21.708	32.02
0.35	Undecane	4.213	4.10
	4-Hydroxy-2-methylbenzaldehyde	5.928	29.45
	Benzeneacetic acid , 3,4-dimethoxy-,methyl es	6.989	19.15
	Hexadecanoic acid, methyl ester	12.145	13.10
	Butylated Hydroxytoluene	12.279	6.07
	Methyl stearate	14.127	7.67
	Phenol,2,2-methylenebis{6-(1,1-dimethylethy	17.090	4.99
	Linoleic acid ethyl ester	19.717	5.66

4. DISCUSSION

In this study, identification of nine phytochemical compounds common between *Amaranthus graecizans*, *Digera muricata*, *Aerva javanica*, *Gomphrena celosioides* of the historical family Amaranthaceae and *Suaeda monoica*, *Salsola vermiculata*, *Chenopodium murale*, *Cornulaca monocantha* of the historical family Chenopodiaceae, supports the new inclusion of the two families by the APG III (APG,) into a new broadened family Amaranthaceae Juss. (s.l.). According to Ellison *et al.* (1962) PA values of 50% and above are considered as marker of close relationship. The results revealed 90% chemical affinities between *Chenopodium murale* and three species of the genus *Amaranthus* despite of their great morphological diversity. Among the selected members of the *chenopodiaceae*, *Chenopodium murale* and *Suaeda monoica* are the most closely related species to all of the studied Amaranthaceae. 60%-88% and 54%-88% chemical affinities were reported for the two species with the Amaranthaceae members

respectively. Most of the identified compounds are of pharmaceutical importance. Phenol,2,2-methylenebis{6-(1,1-dimethylethy), 7,9-Di-tert-butyl-1-oxaspiro(4,5) deca-6,9-dien, Butylated Hydroxytoluene, and 3-Cyclohexen-1-ol, 1-methyl-4-(1-methylethyl) reported by many authors as antioxidants (Hema *et al.*, 2011; Sudharsan *et al.*, 2010; Naher *et al.*, 2013). Hexadecanoic acid, methyl ester, Linoleic acid ethyl ester, Hexadecanoic acid, methyl ester, 3-Cyclohexen-1-ol, and 1-methyl-4-(1-methylethyl) reported as anti-inflammatory (Hema *et al.*, 2011; Naher *et al.*, 2013; Othman *et al.*, 2015; Sudha *et al.*, 2013). Benzaldehyde, 4-methoxy, Methyl stearate, Butylated Hydroxytoluene, 7-Hexadecenal,(Z)-, and 3-Cyclohexen-1-ol, 1-methyl-4-(1-methylethyl) considered as Anti-cancerous as reported by Kundu and Metra (2016), Naher *et al.* (2013), Ukwubile *et al.* (2019), Hamid *et al.* (2017). Antibacterial activity of the Patchouli alcohol, 3-Cyclohexen-1-ol, 1-methyl-4-(1-methylethyl) 7-Hexadecenoic acid,methyl ester,(Z)- Di-n-octyl



phthalate Octadecanoic acid,1-{{(1-oxohexadecyl)oxy}r, and Di-n-octyl phthalate has been reported by Bunrathep et al, (2006), Naher et al, (2013), Krishnaveni et al., (2014). Kale ,(2015) and Jabeen ,(2018).

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AN OVERVIEW OF THE POLICIES OF THE WEST, HUMAN RIGHTS AND THE ISLAMIC WORLD

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ABSTRACT

The twentieth century is a century of mind-boggling scientific inventions, unparalleled feats of scientific research and discovery. The rapid development of human civilization and the sciences and arts that have taken place during each decade of this century is even greater than the collective development of the entire period of known human history. But if we look at the pace of political and moral development, the enlightened unipolar world that has reached the threshold of the 21st century still seems to be trapped in the colonial darkness of the eighteenth and nineteenth centuries. Freedom, Equality, Democracy and Basic Human Rights have not been able to eradicate the blackness of the huge offices, the horrors of barbarism, oppression and injustice, aggression and cruelty. Under the weight of oppression, humanity is still wounded by the devil. Scientific inventions have bridged the gap between time and space and given the world the shape of a "human settlement", but alas! Couldn't bridge the gap between human hearts. That is why this "global settlement" is practically no different from a traditional settlement, it also has elders occupying power and resources and there are still losers drowning in the depths of humiliation. Blinded by the arrogance of scientific progress, the world may have subjugated the weak peasants whenever it wanted, but there is no one to stop its oppressive hands.

KEY WORDS: *The West, America, Islam, Human rights, United nations*



INTRODUCTION AND ANALYSIS

If Anyone look at the conclusions drawn in the above lines in the context of the recent unjustified provocative and brutal aggression against Iraq, you will see that it is not a manifestation of any quintessential thinking but a realistic portrayal of the naked realities from which the international community The Muslim world in general is particularly affected. The Anglo-American colonial dance of the Devil in the night darkness of missiles and barbaric bombardment on the unarmed people of Iraq between December 16 and December 19, 1998, has once again revived the fears of the Soviet Union. Born after the fall of America's unipolar status.

History has shown that imperialism has always carried out its imperialist aggressive ambitions under the guise of deception. Britain, France, the Netherlands, Germany and other European nations enslaved African and Asian nations and plundered them, but they always considered the subjugated masses a "white man's burden." In order to teach civilization to "uncivilized" nations, it is necessary to enslave them. As if colonial exploitation was no less than a "great favor" to these nations. The most intelligent philosophers and rulers of modern Europe have piled up arguments to justify European colonialism. John Locke and John Stuart Mill, without whose mention the European hymns of freedom, equality and human dignity are considered incomplete, considered the conquests of African and Asian nations at the hands of British imperialism to be essential to the cultural development of subjugated nations. Diya and wrote long essays in this regard. Today, the United States, the greatest champion of human rights and liberal democracy, always finds some beautiful justification for its barbaric and aggressive activities. That is why, after the 1991 Gulf War, former US President Richard Nixon brazenly claimed:

"The United States will never defend a goal with its own life that it cannot defend with its conscience.¹

If the late Richard Nixon had been alive, the latest joint US-British invasion of Iraq would have been justified in order to satisfy his conscience. Before the 1991 Gulf War, the United States was responsible for its inhumane acts. There must have been a "problem" of stamping UN resolutions. At that time, it was not long before he rose to the position of a unipolar superpower. The negative effects of Sardajang's bitter experiences still lingered. That is why the United States had to paint its barbarism as a joint operation. Then the

military occupation of Kuwait by Iraqi President Saddam Hussein in 1991 provided a very simple and reasonable excuse for the Gulf War, although later events He asserted that the United States was behind Saddam Hussein's assassination.

But suddenly and unexpectedly, in the night of December 16-17, in 1998, in the name of Operation Desert Fox, the United States and Britain rained missiles on Iraq. This time the resolution was passed by the Security Council, nor did it feel the need to take its permanent members into confidence. This time, Saddam Hussein's "unforgivable crime" was simply that he refused to cooperate with UN inspectors because he thought he was involved in the heinous crime and conspiracy of espionage under the guise of "inspection". To satisfy their conscience and to maintain their democratic credentials in the world, American colonialism this time relied on the straw of the report of Richard Butler, the head of the UN inspection team. Subsequent events proved that Richard Butler was pursuing a US agenda rather than the United Nations, and that US intelligence officials, along with members of his team, were engaged in covert intelligence missions. This has also been openly acknowledged by the American press.

Spying behind the scenes of the United Nations

What was special about this report ... The words "time" are:

"It showed that the Iraqis were using their usual tactics, such as concealing equipment that could be used to make biological weapons, obstructing meetings with workers at suspicious locations, and the use of chemical weapons in the past." Misrepresentation of sealed documents ... "

The Economist, a leading London-based weekly, also described Richard Butler's report as "unsatisfactory" in its "Lead Story" of 19 December 1998.

Satan the Great was looking for an excuse to express his devilishness

Khoy Badr Abhana very much. Otherwise, there were no serious complaints in this report. According to General Aslam Baig:

"There is a limit to fraud and coercion. The United States itself has acted as a judge and has decided to oust the arrogant Saddam himself" (?).

The seven-day "Time" has published a detailed article on the subject, entitled "Bugging Saddam." It is not difficult to gauge from the following quotations how ugly and vile American colonialism under the umbrella of the United Nations has been in carrying out its nefarious intentions against an independent state:

¹ Richard Nixon: "Beyond Peace" Random House, New York 1994. (P.38)

² The Economist: Jan. 9, 1999 "Gun boat Diplomacy" (P.4)



"For many years now, the Iraqi dictator has been insisting that UN inspectors who have come to his country to search for secret weapons are CIA agents working for Washington. U.S. spies have used Unscm, a supposed UN impartial commission, to gather deadly information about Saddam Hussein. U.S. officials responded immediately: "We may have been spying, but we did it just to help the United Nations."

Unscm was set up as a result of an agreement to end the Gulf War in 1991. Its mission was simple: to verify the destruction of Saddam's remaining missile, chemical and biological weapons capabilities. A senior White House official explained that Unscm's sole purpose was to spy on Iraq. "(3)

... "US officials acknowledge that the National Security Agency and the CIA's Bug-Lets recorded information that could have been used to bomb Saddam's security team and potential targets." (4)

The above report of Time has published detailed information about the types of spy devices, their installation locations, their constant communication with the headquarters, their automated spy network, etc. Similar reports have been published by The Economist (5), The Washington Post (6), The New York Times (7) and Newsweek.

Can an independent, sovereign state allow such heinous acts against its integrity within its borders? In the light of which code of conduct, international law or the UN Charter, was the Iraqi protest rejected and punished for an uncommitted sin?

The real stimuli

Dear readers! From the above, it is clear that Iraq's alleged arrogance or non-cooperation is just an excuse. Richard Butler's biased and espionage report has also failed to provide any living material to justify the rain of fire and iron on the Iraqi people. These are just hypocritical rhetoric and dictatorial maneuvers, there are other motives behind this unwarranted aggression which the imperialist propaganda machine has failed to hide in spite of all its media power. Neutral, conscientious intellectuals are pointing out these motives in clear words. It is necessary to mention here these nefarious intentions and motives.

(1) All industrial and scientific development in the developed countries of the United States and Europe

depends on access to oil resources and uninterrupted supply of crude oil. That is why the Muslim Gulf states, which are rich in oil reserves in the Middle East, have been the focal point of the foreign policy of the Western imperialist powers and the cause of their extraordinary attention. Ensuring compliance with US intentions in matters such as oil production, pricing and uninterrupted free delivery has been a key goal of US foreign policy. Walter Russell Mead, the author of several books on US foreign policy, writes in his recent article:

"Oil is undoubtedly the main point of this whole affair. It is our need for oil that keeps the United States so deeply entangled in the complexities of the Gulf." India's status as that of the British Empire It is at the same time the cornerstone for American power, and the wounded heel for its global position (Achilles Heel), especially the oil-rich Persian Gulf states. Allied to Saudi Arabia, the United Arab Emirates, and Kuwait, the United States must protect those states from invasion by powerful neighbors, such as Iran and Iraq. The expansion of work, agreements, political relations, the deployment of troops all over the Middle East and its environs make such measures inevitable"(8).

Since the 1991 Gulf War, the United States has been actively occupying the oil reserves of the Gulf states without their participation. Exactly seven years after the Gulf War, the US economy has grown to such an extent that, according to economists, the US economy has not seen such prosperity in the last fifty years. The US budget for 1998/1999 is a surplus of 75 billion. In fact, it is the result of the "blessings" of the Gulf War. The United States has received trillions of dollars in "war expenses" from Saudi Arabia, Kuwait and the United Arab Emirates since the Gulf War. It has also saved trillions of dollars in additional costs over the past seven years as a result of purchasing cheap oil. It should be noted that the price of oil was 14 per barrel in 1974, 22 per barrel in 1991 and only 10 dollar per barrel in 1999. In contrast, the Gulf states are facing a severe economic crisis. Saudi Arabia and other Gulf states have been indirectly talking about the withdrawal of US troops. The United States wants to show them the wind of Saddam Hussein and blow their minds and shake their nerves with the deadly demonstrations of its tyrannical power. Some analysts see the recent American barbarism in this context.

³ Bugging Saddam" Time: Jan. 18, 1999.

⁴ IBID Page 32, 33

⁵ The Economist: Jan. 9, 1999 (P.35)

⁶ The Washington Post: Jan. 6, 1999

⁷ N.Y. Time Jan. 7, 1999

⁸ Walter Ressel Mead: "A Fading Coalition on Iraq", The Los Angeles Times, Dec. 20, (Reproduced by the Friday Times, Lahore: Dec. 25. 1998.)



A majority of analysts said that the immediate reason for the above order of US President Bill Clinton was to divert attention from the impeachment motion against him. The American people themselves, as well as Republican leaders, reacted by saying, "The invasion of Iraq is part of a well-thought-out plan for the impeachment of President Clinton." The columnist for the weekly "Time" is as follows:

"It wasn't just Republicans who believed that Clinton had ordered the attack as an attempt to avoid impeachment in an effort like Wag the Dog. The same idea was echoed in the British Parliament and in the French press. During the demonstration in front of Cairo's Grand Mosque, a placard was waved - "Iraqi children are being killed for Monica" (9).

There was an American film called Wag the Dog, which told the story of an American president who unjustifiably attacked another country to save himself from a sex scandal and to divert public attention.

No matter how much President Bill Clinton and White House spokesmen deny the above interpretation, the impeachment motion and the proximity of the time of the invasion of Iraq make this argument seem plausible and can be accepted as an immediate impetus to the invasion. General Aslam Baig also wrote in support of the idea that "the Iraqi people have been drenched in blood over a naughty woman. It is certainly an unforgivable crime and the whole of humanity is lamenting over it." (10)

(3) According to Raqim al-Huroof, one of the immediate causes of the US aggression on December 16 could be President Clinton's attempt to gain the favor of the Jewish lobby and restore trust with Israel. The majority opinion is that the Monica scandal is the result of a conspiracy by the Jewish lobby. When Bill Clinton called on the Israeli government to eliminate Jewish settlements in the West and the cold-blooded attitude in the White House during Israeli Prime Minister Netanyahu's visit. Adopted, the influential Jewish lobby pushed the Monica scandal to teach Bill Clinton a lesson. The American media is Jewish-owned or at least influenced by them. He fanatically publicized the sex scandal. The fact that the majority of critics of Kenneth Starr, Monica Lewinsky and Bill Clinton are Jewish is not a good coincidence. It is difficult, if not impossible, for a US president to remain in the White House without the support of the Jewish lobby. President Bill Clinton soon realized this fact.

⁹ What Good did it do" Time: Dec. 28, 1998 (P.22)

¹⁰ ڄGeneral Aslam Baig, America ki Andhi Taqleed ki

Cheera Dastyan, Daily Jang Lahore, December, 28, 1998

President Bill Clinton was visiting Israel three days before the US invasion of Iraq. According to Time, he was in Jerusalem on Sunday, December 13, when President Bill Clinton was notified of Butler's report. There, he gave the Pentagon 72 hours to prepare for the attack. (11) According to the same weekly, on Tuesday morning, December 15, shortly after returning from the Middle East, President Clinton, along with his military advisers and vice president, considered the Butler report. Bill Clinton had made the final decision on the invasion of Iraq during his visit to Jerusalem. The meeting was convened only to take action and to take his close government members into confidence.

The Jewish control of the American financial system and media does not need to be explained. It was not until Richard Butler's report that the Jewish media had launched a storm of poisonous propaganda against Iraq to pave the way for a December 16 attack.

It is also noteworthy that after the US invasion of Iraq, the Zionist media began to create an atmosphere in favor of Bill Clinton and began to criticize those members of the Republicans who succeeded in impeachment motion against him. Were struggling to do. Finally, on January 12, 1999, the US Senate honorably acquitted President Bill Clinton. The news was prominently featured in Pakistani newspapers on January 13, 1999. Now the American press is taking good news of Clinton's opponents.

(4) The history of the American nation is not very old. The majority of today's white American ancestors were fugitives and savage merchants from various European countries. The history of the American nation began with the genocide of the local "Red Indians" and the rebellion of the motherland against England. Horror and barbarism are part of the collective mood of the American people. When power and wealth exceed a certain limit, it always takes the form of oppression. That is why the American people are sick of killing another nation.

(5) The United States has used Iraq as a training ground to satisfy its false dignity. The self of the American nation, according to Allama Iqbal, is a perverted ego. He believed that the riots began with Luther's religious reform movement in Europe, in which the universal morality of Christianity was ousted by national morality. (12) This motivation is also important behind the American atrocities. Because if the self of this

¹¹ Time Dec. 28, 1998 (P.23)

¹² The Reconstruction of Religious Thought in Islam" hy Dr.

Muhammad Iqbal



nation is not riot-ridden, other motives could never take a dangerous turn.

UN resolutions and international law

The joint US-British bombing of Iraq is a clear violation of international law, a gross disregard for UN resolutions, and the worst interference in the internal and external sovereignty of a free and independent state. In this regard, the US government's interpretations and interpretations fall into the category of "Khoye Badrabahana Bisyar". The following lines, in the light of the views of international law experts, the relevant sections of the UN Charter and Resolutions, prove that US aggression is unjustified in all respects.

According to Oppenheim, a professor of international law, undue interference by one state in the affairs of another in order to maintain or change the status quo is in fact a "dictatorial intervention." In the words of another lawmaker, Quincy Wright, the intervention could be diplomatic or even military, a letter written in a threatening tone, warning of possible use of military force or coercive measures.⁽¹³⁾

Article 2 (4) of the UN Charter contains guidelines for all member states:

"All member states shall refrain from the use of force or threats against the territorial integrity or political sovereignty of any State in the conduct of its international relations. They shall not take any oath which is inconsistent with the purposes of the United Nations." "

This principle was reiterated by the United Nations General Assembly in Resolution 2131 (XX) December 1965 in the following words:

"Whatever the reason, no state has the right to interfere directly or indirectly in the internal or external affairs of another state."

In 1970, the UN General Assembly unanimously adopted a resolution reaffirming the principles of friendly relations and cooperation and non-interference between states in the light of the UN Charter.

According to the resolution

"It is the duty of every state to refrain from organizing, inciting, participating in any form of terrorism or civil war in another state or to incite organized terrorism within the territorial limits of that state. It is their duty to refrain from any action that involves the use of force or intimidation.

No one state or group of states has the right to interfere in the internal and external affairs of another state, directly or indirectly, or to interfere in any way against

its political, cultural and economic interests. Any kind of interference or alleged threat is a violation of international law."⁽¹⁴⁾

When Iraq invaded Kuwait in 1990, there was a backlash and emergency Security Council meetings were called. In the wake of this incident, the UN Security Council passed several resolutions. The first was Resolution 660, which called on Iraq to withdraw its forces from Kuwait immediately. Subsequently, in the light of Chapter 7 of the UN Charter, the Security Council adopted another Resolution 661, which imposed restrictions on international trade and exports with Iraq. Despite these resolutions, Iraq did not withdraw its troops from Kuwait, and the Security Council adopted Resolution 678, which formally authorized collective action. It authorized member states to "use all necessary means" to expel Iraq from Kuwait. The interesting thing about this resolution is that it does not mention any specific state that will take "necessary steps" against Iraq. However, the United States willingly assumed that it was responsible for leading this collective action. In light of the legal veil that the resolution provided, the United States led a mass military offensive in Iraq called "Operation Desert Storm."

Operation "Desert Storm" was also ended by a Security Council Resolution 687. The resolution imposed a number of conditions on Iraq, which it accepted, realizing the gravity of the situation. Since the same resolution No. 687 is cited by these two countries in defense of the latest aggression by the United States and the United Kingdom, it seems appropriate to state here some of the conditions contained in this resolution. The resolution included:

1. Establishment of a United Nations Observer Group to monitor the Kuwait-Iraq border
2. Implementation of the Geneva Protocol on Toxic Gas by Iraq
3. Destruction of chemical and biological weapons and missiles and closure of storage facilities under international supervision
4. Establishment of the UN Special Mission (UNSCOM) in the light of Article 29 of the UN Charter
5. Opening of all chemical and biological weapons stockpiles by Iraq for commission inspection
6. Iraq bans nuclear weapons from other countries and assures implementation of NPT clauses

¹³ International Law: Vol. 1, Oppen Hein (P.305)

¹⁴ General Assembly Resolution No: 2625 (xxv) of October 24, 1970



7. Iraq provides the International Atomic Energy Agency with a list of all nuclear facilities and AEA inspectors have the right to inspect such facilities.

Iraq accepted the terms of the ceasefire and signed it. In this way, he imposed a lot of restrictions on himself. The United States and Britain have accused Iraq of violating the terms of the resolution to launch "Operation Desert Fox". But this self-made excuse is irrational, absurd and a slap in the face of facts for the following reasons:

(1) If the latest Anglo-American aggression has been carried out in the light of UN Security Council resolutions, the Secretary-General of the United Nations, expressing his sorrow and grief, said that "the United States and Britain has demonstrated naked aggression and trampled on the sanctity of the United Nations." He said in a very heartfelt tone:

"America's recent move will be a tragic chapter in the history of the United Nations. This barbarism has shaken the global conscience." (15)

(2) With the exception of the United States and the United Kingdom, all other permanent members of the Security Council, Russia, China and France, have strongly opposed "Operation Desert Fox," as stated by Russian President Boris Yeltsin.

"The United States and the United Kingdom have flagrantly violated the United Nations Charter, the established principles of international law and the rules of responsible conduct of states" (16).

France protested

Richard Butler's report should have been presented to the Security Council first. The United States has decided to send fire and iron ore to Iraq (17)

Russia and China have recalled their ambassadors from Washington and London in protest.

(3) No action could be taken against Iraq above the Security Council. China and Russia have stated that when the Security Council imposes its own conditions, it has the power to take action in the event of a breach of them. Approved in light of the UN Charter. No member state can take independent and unilateral action to implement any resolution. If this power is

given to a single state, then the powerful countries will use the Security Council for their own purposes to launch aggression against the weaker countries and thus open a dangerous door of aggression.

(4) Contrary to Resolution No. 678, there is no mention in Resolution No. 687 of taking "collective action" unilaterally. Therefore, no member state has any such legal authority. Furthermore, the Collective Action mentioned in Resolution 678 was for a limited time only. When Iraq was invaded by this resolution in 1991, its purpose was fulfilled. It is not possible to take collective action again and again. UN Resolution 678, which was explicitly adopted to end Iraq's aggression against Kuwait, cannot be re-argued.

(5) As the later report proved, Unscm was involved in espionage operations in Iraq. And Richard Butler's report did not identify any serious violations by Iraq that could be punished in the form of barbaric bombings. Even if it is acknowledged that Iraq has not fully complied with UN Resolution 687, no single state has the right to assume the responsibilities of the United Nations alone. Decide against naked aggression.

(6) It is a well-established principle of international law that whenever it is difficult to make a clear decision as to whether a state's action is legal or illegal, the other party will respond to determine its legal status. Is placed in front. If the reaction is against it, that action will be considered illegal. Anglo-American aggression was protested globally, as if it were unjustified and illegal in the light of international law.

The worst violations of the United States and human rights

The repetition of human rights over the past few years is unprecedented. The Universal Declaration of Human Rights, adopted by the UN General Assembly on December 10, 1948, was so exaggeratedly propagated that humanity really bowed down to the principles of equality, justice and freedom of expression. Is. The declaration was sometimes called the World Magna Carta (18), sometimes called the greatest document in the history of human aspirations, and sometimes called one of the most important documents of the twentieth century. Verbal devotion was expressed from Some have called it the "first international treaty on human rights" (19). In the preamble to the declaration itself, it is described as a "common standard" for the desired performance of all peoples and nations. British Prime Minister Winston

¹⁵ America ki Andhi Taqleed ki Cheera Dastyan, Daily Jang Lahore, December, 28, 1998

¹⁶ General Assembly Resolution No: 2625 (xxv) of October 24, 1970.

¹⁷ America ki Andhi Taqleed ki Cheera Dastyan, Daily Jang Lahore, December, 28, 1998

¹⁸ U, Thant From Burma, Ex-Sec. General of U.N. in 1960, special edition of the electronic

¹⁹ Hillary Clinton: ibid (P.8)



Churchill called it the "coronation of human rights". The Horizontal Declaration begins with the golden letters:

"Recognizing the innate dignity of all members of the human family and their equal and inalienable rights is in fact the foundation of freedom, justice and world peace."

The words of the first article of UDHR are:

"All human beings are born free and equal in dignity and rights."

"All human beings are born free, their dignity and rights are equal" ⁽²⁰⁾

The Universal Declaration was in some respects very vague and had a general impression. Therefore, the need for clarification of some of its provisions and preparation of supporting ethical and legal documents, treaties or conventions for its implementation was soon felt. By 1995, 65 such documents had come to light. Two of these documents:

"International Charter for Economic, Social and Cultural Rights" ⁽²¹⁾

Of particular note are the International Covenant on Civil and Political Rights ⁽²²⁾.

The two Covenants contain all the details of Article 30 of the Universal Declaration, as well as obliging member states to abide by them, and provide some additional details. The preamble to the Charter of Civil and Political Rights, among other things, emphasizes that member states will create an environment in which the goal of civil and political liberties is easily achieved. The preamble also includes a section of the UN Charter that states member states have a responsibility to uphold human rights and freedoms and promote their universal respect. The Charter is divided into six parts and is a large document consisting of a total of 53 articles. Excerpts from some of its clauses will be useful in our future discussion:

Article 1: All people have the right to self-determination. Based on this right, they freely determine their political status and are free to make decisions for their economic, social and cultural development.

²⁰ Winston E. Langolly, Human Rights: Sixty Major Global Instruments UDHR UNGA, Res 217 A (iii) of Dec. 10, 1948.

²¹ International Covenant on Economic, Social and Cultural Rights, Adopted by GA Res: 2200 of Dec. 16, 1966.

²² International Covenant on Civil and Political Rights, Adopted Dec. 16, 1986.

Article 2: Member States shall promote the right to self-determination and respect this right in the light of the United Nations Charter.

Article 6: And every human being has the birthright of life. This right will be protected in accordance with the law. No one will be deprived of life unilaterally.

In 1968, an international conference on human rights was held in Tehran to review the progress of the UDHR. At the end of the conference, the "Tehran Declaration" reiterated:

"Peace is the universal aspiration of mankind and peace and justice are essential for the full implementation of fundamental freedoms and human rights" ⁽²³⁾.

In November 1989, the United Nations General Assembly adopted the "Declaration of the Rights of the People for Peace" (35).

1. The General Assembly reaffirms that the main objective of the United Nations is to establish international peace and security.

2. The General Assembly expresses the desire and aspiration of mankind that it is the sacred duty of every state to end war and establish a peaceful life.

The words of its Articles 1,2,3 are:

"1. The General Assembly solemnly declares that the people of our planet have a sacred right to peace.

2. Protecting and enforcing the people's right to peace is a fundamental duty of every state.

3. Practicing the right to peace requires states to formulate policies to counter the threat of war, condemn the use of force in international relations, and resolve international disputes peacefully in the light of the United Nations Charter. Solve the way. "

The above declarations, charters and declarations are nothing more than a verbal deposit and word spread. The Vietnam War, the Korean War, the Russian invasion of Afghanistan, the double invasion of Iraq by allied and US forces, the cheapening of Muslim blood in Bosnia, Kosovo and Kashmir, the genocide of Rwanda and the civil war in countries like Somalia, etc. The events of 1945 are indisputable evidence that all human beings on the planet are neither "free" nor "equal". Given the colonial rivals of the United States and European countries and their discriminatory treatment of Muslims, this preaching of human rights is mere deception, deception and extreme hypocrisy. "Human rights" actually mean the rights of whites and Jews. The United States and the West are obsessed with understanding Muslims as "human beings."

The greatest human rights activist is the United States, and the fact is that no other state can match the extent to which it is violating human rights under the guise of

²³ Prolamation of Tehran: May, 13, 1968.



modern colonialism, democracy, freedom and equality. For decades, US presidents have been vocal about human rights. It was started by President Jimmy Carter and since then human rights have been a constant part of US foreign policy. His meeting with the head of state is not complete without discussing the human rights situation. Ever since China cracked down on angry mobs in Tiananmen Square, the United States has had an easy excuse to criticize China, otherwise in the wake of the 1991 Gulf War and now Iraq in December 1998. The unprovoked acts of aggression against the United States are in no way comparable to China's "crime." The United States is using human rights as a weapon of psychological Cold War. He presents exaggerated reports of human rights violations to put his opponents under psychological pressure.

When Chinese President Zheng Zeman paid an official visit to the United States in 1997, President Bill Clinton expressed his concern over human rights abuses in China so frequently that he called on the Chinese president to respect the requirements of morality. The US President was forced to stand up and interrupt. Addressing Bill Clinton, he said: Mr. President! You are committing the crime of interfering in China's internal affairs, it would be appropriate for you to pay attention to the latest UN report on human rights in your country. " He also criticized the United States for signing 17 UN conventions, while the United States has signed only 15 such conventions.²⁴

The first speech of the US Presidents after assuming the presidency, which they call the State of the Union Speech, has to do with listening. It is as if an angel of peace has descended from heaven who has descended from his Messiah to the children of Adam. It will cure all problems. But these same presidents are so hard-hearted that their consciences do not suffer the slightest conscience while ordering the killing of millions of people.

December 10, 1998 marks the 50th anniversary of the Universal Declaration of Human Rights. President Clinton, in keeping with the glorious tradition of American presidents as usual, declared his allegiance to the sacred principles of the Declaration, calling it a great document of human history. He reminded once again in his passionate speech: "The language of the document clearly states that all human beings are born free and equal." He said: "Its principles set the standard for us. But we have to test ourselves "⁽²⁵⁾

²⁴ The Electronic Journal, "Issues of Democracy" (P.6)

²⁵ Declaration on the Rights of people to Peace, Apvd, GA Res. 39/11 of Nov. 12, 1984.

The same Bill Clinton, who was in Jerusalem just three days later, had mentally prepared for the invasion of Iraq, and then on December 16, in a televised address to Iraq, he took the nation into confidence. Justifying the barbaric attack, he said:

"Bombing was necessary to convince the world of American power" ⁽²⁶⁾

After the collapse of the Soviet Union, the United States became a unipolar superpower, as if the world was not yet aware of American power. For this, it was deemed necessary to increase its power by brutally bombing the people of a Muslim country. Even in the Gulf War, the American nation's taste for barbarism was not satisfied, in which millions of innocent Iraqi Muslims were martyred. The American president soon forgot the sacred principles he was preaching to the whole world on December 10. He has merely unveiled peace, brotherhood, justice, freedom, in fact his Genghis Khan face is what we saw once again in the recent aggression against Iraq. We are the ones who are still deceived about their authenticity. Otherwise, Allama Iqbal (may Allah have mercy on him) would have removed the veil from his face long ago.

The vision of the leaders of the Muslim Ummah has only seen their bright face, they are deprived of the insight that can see the tide of darkness behind this light. Fear of length is rampant, but he still wants the pool of colonial hypocrisy to be opened a little more:

The eloquence and eloquence of Hillary Clinton, the intellectual wife of the President of the United States, who addressed a ceremony at the United Nations on December 10, 1997, is a masterpiece. And he painstakingly portrayed the painful scenes of human rights abuses around the world, from the atrocities of Nazi Germany. He did not name Islam, but did say that "in some religions, women do not have the right to half-martyrdom and divorce." But alas, not a single sentence in his heartfelt detailed speech was about the grave violation of the human rights of innocent Muslims in Iraq, Bosnia, Palestine and Kashmir. He spoke in support of the US Constitution, but said that maintaining some independence was not the answer.

"His views on the protection of human dignity were far ahead of his time when he declared that all human beings are created equal."

Hillary Clinton expressed her regret over the global human rights situation:

"Half a century later, we have not broadened the scope of human dignity. We still have many women and men

²⁶ Shafeeq ul Islam Farooqi, Iraq par Fauji Bombari aur

American Fauji Taqat, daily Nwai Waqt, January, 10, 1999



who are deprived of the fundamental rights enshrined in the Declaration. There are many about whom we are heartbroken. There are many whose sufferings we have failed to see, hear and feel "⁽²⁷⁾

The heartbreak she expressed refers to other countries, not the United States. What he said about others is actually true of America and Americans. Isn't it true that after her heartfelt speech when Iraq was bombed in obedience to her husband's orders, she did not utter a single word of remorse?

On the occasion of the Silver Jubilee of the Universal Declaration of Human Rights, on September 14, 1998, the US House of Representatives and Senate passed a resolution reiterating its commitment to "the practical implementation and respect of the Universal Declaration and the agreements reached in its light." I express my sincere gratitude for using all my efforts. The resolution called on the American people to "use the Universal Declaration of Human Rights as an effective tool to promote tolerance, understanding and respect for human rights." ⁽²⁸⁾

Exactly three months after the resolution, the whole world saw the American nation's "tolerance, understanding and" respect for human rights "in Iraq.

Geraldine Ferraro served as US Representative to the United Nations Commission on Human Rights from 1994 to 1996. This is the same lady who won the vice presidential election against George W. Bush in 1988. Check out the following excerpt from his speech, which reflects the hypocrisy of the entire American nation. Says:

"It is our duty to sit in the Human Rights Commission and openly express our responsibilities to the human race. We must be heard. Our voice is the voice of the oppressed. The voice of the child who has food to eat." No, the voice of the young man who was forced to put a military gun on his shoulder, the voice of the mother who is crying because she can't feed her children, the voice of the father who is chained because he She dared to express her remorse. " ⁽²⁹⁾

Geraldine and other humanitarian members of her human rights commission, who have been the "voice" of oppressed children, mothers, fathers and human beings, have not seen the millions of hungry children in Iraq who have been subjected to cruel sanctions and died blind. Went down to the cave.

Dear readers! The catastrophe that Iraqi Muslims have suffered is unimaginable. According to a UNICEF

report, more than 350,000 children under the age of five were killed during and after the Gulf War. ⁽³⁰⁾

Former United States Attorney General Ramsay Clark is one of the few Americans whose conscience has forced them to speak out against this inhumane treatment. On August 16, 1995, in Los Angeles, while addressing a large gathering, people were shocked to hear the shocking facts about the Gulf War. His speech was published in many newspapers and magazines. Here is an excerpt:

"The bombing was intended to destroy the basic needs of the human population," the Pentagon said in a statement.

"The bombing was aimed at destroying the basic needs of the human population. According to the Pentagon, 110,000 airstrikes were carried out during the 24-day war, which resulted in large reservoirs (dams), water treatment plants, land. Within four days, not a single water supply center was left intact, except for a few wells where people used to draw water by hand. Within just 30 minutes of the start of the war, 90 percent of the electricity system was shut down, destroying food sources, 90 percent of poultry within two months, 60 percent of milk and meat within four months. The animals were killed. There was no capacity to produce or import grain. There was no stockpile of grain left. Iraq imported 40% of its food and produced 60% of its own food. In the next four years, food production fell by two-thirds and 88,000 tons of ammunition were dropped on Hiroshima in just 42 days. The atomic bomb dropped on it caused seven and a half times more destruction. The bombing left Iraq unable to meet the basic needs of its population. Five million people died during the Gulf War and five years after the war. "⁽³¹⁾

(Translation: Chaudhry Muzaffar Hussain)

As of 1995, sanctions on Iraq had killed more than 500,000 Iraqi children, according to the Food and Agriculture Organization of the United Nations (FAO). Denis Holli-day, the coordinator of the post-oil food scheme in Baghdad, reports that between 5,000 and 6,000 Iraqi children die every day. He resigned, accusing UN member states of moral bankruptcy. Colin Rowat, another Cambridge native, commented on the same immoral situation:

"When Saddam Hussein was on our side, we didn't care that he was Kurdish. Now that he's our enemy, we don't

²⁷ Issues of Democracy (P.10)

²⁸ IBID (P.27)

²⁹ IBID (P.40)

³⁰ Chaudhry Muzaffar Hussain, Niksan k Noha, Daily Jang

24 November 1997

³¹ Ramsey Clarke, Impact International, (Vol. 25, No. 9, Sep.

1995) London UK



care that innocent children are the victims of sanctions." (32)

The people cited in the above lines are just a handful of people whose consciences are still alive and who are capable of thinking beyond the national interest in the context of humanity, otherwise as far as the collective conscience of the American nation is concerned. By the way, he is the opposite. According to a Washington Post poll, 80 percent of Americans are in favor of bombing Iraq. (33)

Dear readers! This is the role of a nation that considers itself a world leader and whose government justifies its intervention in even the slightest violation of human rights in other countries. What a "beastly" role human rights activists play. You can see some highlights in the lines above. Otherwise, huge offices are needed for its details. Had there been even the slightest respect for human rights among the US President and the American people, they would never have played Holi with the blood of millions of Iraqi Muslims under the guise of teaching Kuwait's independence or Saddam Hussein a lesson. They have so much advanced technology that they can only target military bases, but they have ruthlessly targeted human populations. Their goal was to completely cripple the Iraqi people so that they could forever be a role model for the American opposition !!

Americans are proud that the United Nations was the brainchild of their former president, Franklin Roosevelt, and that the Universal Declaration of Human Rights was adopted through the efforts of his wife, Elise Roosevelt Eleanor. But what is the record of the United States in promoting human rights and international law? See the report in The Economist:

Successive American presidents have described human rights, democracy, and the rule of law as guiding values in their foreign policy. They have always used international law to defend themselves and criticize others. The United States itself has obstructed the development of international law, and its record in this regard is deplorable. Instead of setting an example, the United States has signed many human rights treaties at a time when many countries The United States ratified the Genocide Convention 40 years later, the Convention Against Racial Discrimination 26 years later, and the Charter of Social and Political Rights, the most important of which, 26 years later Only two countries have not yet ratified the Convention on the Rights of the Child: the United States and Somalia, and

the United States has added additional protections to the treaties it has ratified. In the United States, they have become obsolete. F. played a key role in setting up the tribunal to hear cases, but is now the only country among its allies to oppose a permanent International Criminal Court, despite 120 countries supporting it at a July 1998 UN conference Yes, the reason is that it wants its troops to be exempt from it and this attitude of the United States is nothing new. All US governments have used international law to discredit other nations and have refused to apply it to themselves "(34)

In Short, Some Serbian and Rwandan leaders have been convicted by an international court of "crimes against humanity". Will UN member states be able to declare the deaths of innocent people as a result of US President Bill Clinton's unprovoked war crimes a crime against humanity and demand that they be brought before the International Court of Justice? If not, what does it mean except that world justice is still subject to the interests of powerful nations?

³² The Economist: Dec. 5. 1998.

³³ The Economist: Dec. 5. 1998

³⁴ The Economist: Dec. 5. 1998.



SCIENTIFIC RELEVANCE AND FUTURE OF DIGITAL IMMORTALITY AND VIRTUAL HUMANS

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ABSTRACT

We are on the threshold of a significant change in the way we view digital life, which will have a major effect on the physical world. Computers have increasingly emulated deceased human beings through growing awareness in the fields of artificial intelligence, big data, and machine learning, and have symbolically managed to overcome death with the help of technology. One thing is clear, though: now that there are proper and legitimate discussions happening about human immortality, we can be certain that the future is upon us. This article attempts to explain and challenge the ways in which digital immortality, in particular, has manifested itself. This paper summarizes the technological solutions, research findings and technical challenges of major researchers by reviewing the key technologies and general technical schemes in the field of digital human beings. The prospects of digital human beings are being investigated.

KEYWORDS: *computational modelling, virtual visible human, virtual intelligent human, avatar, immortality*

INTRODUCTION

Utilizing virtual assistants like Siri, which gives voice and conversation interfaces, the growth of machine learning techniques for capturing large data sets, and the growing autonomy of computer-controlled systems all represent changes in artificial intelligence that promote the creation of digital immortality. The growth of the acquisition of personality and brain emulation, as well as life after death influenced by computation, will alter the future of religion, affect the perception of the afterlife, and increase the effectiveness of the dead-on society. This paper provides an overview of recent developments in the field of digital immortality, examines how such digital immortals could emerge and raises complicated questions. It presents the first results of a study that has created a virtual persona. This prototype system contains relevant memories, knowledge, processes and modelling of an individual's personality, traits, knowledge, and experience, including his subjective and possibly erroneous view of reality. It is argued this system offers the opportunity for the development of a personality that learns after death [1].

Based on the development plans suggested by the Federation of American Scientists (FAS) and

existing hypotheses, from the beginning of the digital human definition to 2014, we have sorted academic achievements and relative references into four aspects called Visible Human, Virtual Physical Human, Virtual Physiological Human and Intelligent Virtual Human. Information on data collection, data processing and data set-up for Visible Person has been obtained. Digital Physical Human references have been outlined in four physical categories, including radiation, ultrasound, electrical, and mechanics. Relative study related to physiological and biochemical changes in the human body has been classified in four ways as gene molecules, cells, and organs for Virtual Physiological Human. Relative study of Virtual Brain Human was primarily based on the virtual human brain and virtual human power.

Digital human simulation blends information technology with bioscience applied to an analogue analysis of DNA molecules and proteins in cells and tissues, as well as organs. It has been widely applied in several fields such as aviation, national defence, film and television, sports and medical care. This paper points out the relative successes and advancement of science in recent years and summarizes the problems and challenges of research



practice. This paper aims to provide references for the development of Digital Humans.

THE IMPACT OF DIGITAL LIFE ON SOCIETY

The consequences of digital life have drastically changed over the last few decades. Without all those used tools, it is scarcely possible to imagine what everyday life will look like. A large proportion of people primarily do their job on a machine, and everyone checks their mobile phones several times every day. Online activities can impact the truth and trust of individuals, through Facebook conversations, etc. Also, the well-being of individuals may be affected both physically and emotionally. Besides, it is possible to affect the well-being of people, both physically and emotionally. In several distinct areas, the effect of digital life on society brings exceptional benefits. Whether it concerns the regulation of a pregnancy or access to knowledge, the healthcare industry profits. Negative consequences are in a particular context alongside those advantages. Digital life can impact relationships, work and learning environments.

The rise of digital life brings with it many negative impacts. All the data can trigger inattentive actions, which in many respects affects personal life, whether it is study or friendship. Information overload is a detrimental consequence of our digital lives. Technology practitioners, scientists, and health professionals surveyed by the Pew Research Center shared their perspectives and findings on individuals from their community. This illustrates that people, no matter what time of the day will feel anxious and worried about immediate access to everything they need. Sleeplessness and impatience are further effects of knowledge overload. A close link to digital life by missing connections with other people may intensify social relationships. A lack of attachment to everyday life is induced by entertainment opportunities and the opportunity to work everywhere.

The effect on friendships is another factor. An investigation by the University of Washington shows that because of their online behaviour, people especially teenagers, have the problem of decreasing offline friendships. Communicating online is simpler for them, and does not involve meetings in person and prevents disputes.

A California State University study demonstrates that technology decreases student attention and induces distraction. It is difficult for such students to hold their focus on one thing for a longer period through behaviours like updating Facebook every 15 minutes. Another phenomenon, induced by multitasking caused by technology, causes negative student output in class.

Human nature will not improve, which is why in the future, violations will still occur. In the future, everything will be open on the Internet, which is why cyber-terrorism will take advantage of that. Privacy, which offers cybercriminals the ability to strike in new ways, would be reduced to a low degree. This will make our world less secure than it is now and personal skills are the only thing that protects people.

As well as being social and being democratic, our concept of being human can change dramatically. That's because the new system is losing relevance and significance. Thus to realize new modes and activities, the world needs to create a new order.

Nevertheless, researchers at the Pew Research Center believe that one of humanity's greatest booms is the Internet. Whether it is schooling, information or family, the opportunity to reach out to other people for all purposes that an individual might think of gives us flexibility and endless choices on how we want to spend our life. This enormous advantage helps us to live our lives today; the internet has made it possible to communicate globally.

Digital life will invent, reinvent and innovate, through networking, private life and career. The Pew Research Center and Elon University research project explored the views of various technology experts, academics and health practitioners on digital life, how life could change in the future, and the well-being that comes with it. Via networking, creativity can be achieved and all the knowledge people can get from it. Such information helps individuals to create new business ideas or simply find an individual job through, for example, linked in by inserting personal information on the website, job offers can be suggested. Careers, but not just careers, can be invented and reinvented.

According to experts surveyed by the Pew Research Center, the healthcare industry obtains enormous benefits through digital growth. Details regarding medical, safety and health services, such as patient medication, can be accessed within seconds. This is a key advantage and has become a game-changer, especially in the areas of elderly care and pregnancy. The quick access to information helps hospitals to identify patients inside the hospital and to provide previous illness information through this the patient can get support more quickly. Without any uncertainties, a pregnant female goes through a controlled process. She knows if the baby is fit and well and if there will be any complications during the pregnancy.

The use of reliable resources is another plus. Digital life helps us to obtain, at any time and almost anywhere, online education. Research data can be easily identified by search engines such as Google, which can provide a single query with thousands of answers. Online platforms allow for a quicker, more



convenient way to make purchases from anywhere you want with the added convenience of doing it. The best example is Amazon, for one it is possible to do the buying order more easily. The product range is also much wider than in any stores that may exist. It's easier than ever before to coordinate, arrange and book journeys, vacations or adventures. All the information for the trip and comparison portals can be accessed by interested individuals such as family members, encouraging tenacious searches on various pages and even preventing a drive to a travel agency.

The ongoing growth of knowledge sharing is expected by scientists. Devices are going to have more automation and power, which contributes to the reality that our lives are going to be more and more, and all the choices we make are with cooperating devices. The web will be more integrated but less noticeable as it is now because the web will blend into all our background knowledge.

MAPPING THE FUTURE OF CLOSED-LOOP BRAIN-MACHINE NEUROTECHNOLOGY

To understand the full potential of brain-machine interfaces (BMIs) designed to communicate between the brain and external devices (such as computers or prostheses), to meet key technological challenges, to develop next-generation closed-loop brain-machine interfaces is needed. Using recorded signals to control devices. The closed-loop BMI continuously records the signals of the brain and nervous system, decoding that information and then encoding the information and sending it to the brain and/or nervous system, usually in the form of local stimuli. The research and development of feedback techniques for the management of neural activity have grown steadily over the past decade, in part due to the prospect that reading and writing in the nervous system are both for the advancement of neuroscience as a field, and therapeutic interventions and related consumer applications [2]. Recently, closed-loop neurotechnology has shown the potential to provide promising therapeutic and rehabilitation opportunities for patients as well as additional opportunities. These efforts include restoring motor function, providing functional treatment for neurological diseases such as epilepsy and Parkinson's disease, treating memory impairments and neuropsychiatric disorders, increasing learning speed and capacity, and devices that can experience and stimulate the activity of our sensorimotor system.

CLOSED LOOP NEUROTECHNOLOGY

Although the development of closed-loop neurotechnology for BMI is still in its infancy, it is driven in part by the prevalence of neurological and

mental disorders, many of which respond poorly to drug therapy or lack other viable treatment options. The advancement of technology shortly will be driven by the capacity to provide proven therapeutic devices for the treatment of chronic depression, post-traumatic stress disorder (PTSD) and diseases such as epilepsy and Parkinson's disease [3]. Loop closure in such devices will provide greater precision and customization as therapeutic stimulation becomes more tailored to respond more directly to the patient's neuronal physiology. Ultimately, next-generation feedback devices will reinvent the partnership between the brain and the body's nervous system, with the potential to provide effective precision electronic medicine and stimulate new applications for consumers in the fields of healthcare, games, and exercise. Given current developmental trajectories, it is likely that next-generation closed-loop neurotechnology that decodes and encodes the neural activity of multiple regions of the nervous system, such as the central nervous system, the peripheral nervous system, and the autonomic nervous system (CNS / SNP / ANS), arise within the next ten to twenty years. To this end, the IEEE Brain Initiative has published a whitepaper that identifies the main challenges and advancements required to successfully develop and implement next-generation closed-loop neurotechnology [4].

Closed-loop technology is the first document to create a technology roadmap outlining the short-term and long-term goals of development cycle G. The guidelines to be followed from this manuscript will direct the implementation of these technologies, with a focus on the efficacy of these technologies in neuroethics and culture, to basic science and clinical translation. The growth of information technology will make digital immortality open to all. The implantation of neuro-nanorobots in the brain will accomplish this. Although they have the same characteristics as normal cells, they differ from their living cousins in many important ways: they are programmed to communicate with computers; They are immortal; They can obtain permits from organic and external sources, etc. These types of nanorobots scan information about a cell, assign it to themselves and then replace the cell. Initially, it is implanted in the blood, then it passes into the vital substance of the biowaste of the organs of the body. The brain exchange is prolonged and painless for the patient, who can continue with their daily activity during and after the procedure. Also, the patient can upload the firmware to improve reality or improve his personality, and after the natural death of the body, the brain sends a signal, it needs to be rationed and connected to a special computer. Thus, the person achieves digital immortality. This brain will be the



centre and processor of the data field and, curiously, it will retain its consciousness.

Essentially, it does not matter how well we have prepared these moments. In true sense, most of us are completely blinded by the unintended consequences of our rapid technological development when it comes into motion. Perhaps the most appropriate preparation we can establish is to keep current progress in the world of intelligent technology invaluable and try to think ahead about how changes will shape our future lives - not just socially, but also legally, politically, and philosophically. Where a place in the discussion of digital immortality depends a lot on how one thinks about consciousness [5, 6]. There are two major camps on this question: those for whom consciousness is a product of quantitative processes (materialistic approaches) and those who believe that consciousness represents more than its parts (virtue view). If one would interpret the former, then digital immortality is a question of when and not. This is because scientists will arrive at a stage of technological capability, at which they will artificially imitate the hardware of the brain to preserve their software (the sense of our thoughts, memories, and proposals).

However, when further adjusting we from a Qualia perspective, it does not matter how scientists can imitate the human brain and live there with electrical thoughts and memories. Neuroscientist and psychiatrist Julio Tony to steal a party from the complete zombie "no mass". It is doubtful whether it represents "us". Apart from the issue of consciousness, there were other important philosophical and moral debates about digital immortality, such as whether a person's digital self is entitled after death and whether the digital immortal self can be changed. No, and/or its length is included [7]. The time to save. Still, no matter how exciting the philosophical and ethical debate about digital immortality is, the survival tests done with bleach are certain. The development of new technology by the school is not controlled. Questions and discussions about philosophical or ethical issues are more or less irrelevant in terms of pure innovation and technological progress.

ONGOING PROJECTS

If some persuasion is needed on this last point, one should just take a look at how many tech companies already want to walk in the door when it comes to extending human life indefinitely. While someone who believes that most of us are alive will already have a huge digital corpse behind us when we die, it's no wonder companies are already looking for ways to monetize this. For viewers of the popular Netflix series Black Mirror, the privatization of our

Digital of Fat life for packaging as a show is a family theme that can help revitalize a loved one. For the rest, it is worth knowing the story of Roman Mazurenko, a Ukrainian entrepreneur whose best friend created a digital version of him using his WhatsApp chat history and social media posts after his death in a car accident. Eugenia Cuida, a co-founder of the Luca company and manufacturer of replicas, the software that 'brought her best friend Mazurenko back to life', did not just drop a curtain that separates life from death [8,9].

Another project on the market today is the Blue Brain Project, a project led by Eckle Polytechnic Fédrell delusion, which seeks to replicate a fully functional human brain. Eternity. I state, "Like a library with people instead of books, forever preserving the memories, ideas, creations and stories of millions of people, or the current interactive history and its interactive. It is a private venture for "explaining history". generation. And he works at the crossroads of digital and biological consciousness in another start-up, Cincinnati Valley in Carnal

If you're wondering where Elon Musk is all this, thanks to his geotechnical engineer Neuralink here, he's working on a "neural race" that can be injected into a kind of mesh sitting on a man. Please be assured that you are out. is. Connect your brain and it to your computer. In a sense, Neuralink is exploring simple digital immortality to the point where the human brain can be enhanced with digital capabilities. However, the result includes a direct biological and technical interface, which inevitably leads to some form of digital preservation. If this still seems unlikely, a physician in the field of Biomac for Knicks will probably read the electrical brain signals of four or fully locked c-in patients and convert them into movement or language. Consider the fact that it is possible. Faced with these questions, the debate over global citizenship seems like a small fry. Concerns about the nationalities and freedoms of travel around us are somehow appearing under the future, the silicone self digitally stored under our robotic world. Still, it is worth considering what the world will look like in a world affected by loneliness / digital immortality, and how it will affect citizenship and freedom of movement [10].

TECHNOLOGY BEYOND TOMORROW

The leadership of the Future Directions Committee (FDC) considered the increasing worldwide interest in digital transformation at its November 2018 meeting in Vancouver. The decision was taken at the February meeting to initiate a new Digital Transformation project that could benefit from the involvement of many Potential Path Societies/OU's serving as a catalyst.



The digital transformation we are talking about today is largely due to the advancement of technology, i.e., mostly transducers, i.e., sensors and actuators, and semantics extraction equipment, i.e. artificial intelligence auxiliary data. From analytics. The main reason why industries and organizations are interested in global digital transformation, however, is economics. Digital transformation is changing the economy a little bit. The economy of atoms is the economy of scarcity: atoms are limited; If you give an atom, you will not have one. In contrast, the economy of bits is the economy of abundance: you can give bits while maintaining a copy that is no different from the original bits. Besides, the atomic economy has a high transaction cost, i.e., it costs money and resources to move the atoms along the value chain, while the cost of working on bits is very low. It is attracting new, younger players in various industries [12].

Changes in the economic structure caused by digital transformation, in the area of transaction networks and data centres such as support infrastructures, reduce both capital costs (CAPX) for entering a business with bits for management and operating cost (OPEX). Opex is still large (so the number of companies operating in the sector is small). Given the benefits of the bit economy over the nuclear economy, industries are making every effort to move their atom-based operations to the bit domain. Bits and atoms can be integrated by technologies such as augmented reality (AR) and virtual reality (VR). Provides unique access to the world of AR and VR bits and increasingly secures connectivity with physical twins through digital twins.

The digital twin physical entity (such as an object or process or a set of aggregate objects or processes) and the digital shadow of the physical entity both reflect its current state (taken) of monitoring and simulation (and its history). Support for root cause analysis). Digital twins can, in some cases, be used as a proxy for physical twins, which are exploited in Industry 4.0 as well as other areas. AR, in a way, connects the world of bits to atoms, by superimposing bits on atoms. VR, on the other hand, exploits bits and is used, for example, in the design, training or presentation stages of the potential solution to the user. IEEE's current two initiatives have worked on key components of digital transformation: digital reality (AR and VR) and symbiotic autonomous systems (SAS) (digital twins). The results of these two initiatives and communities so far provide an excellent starting point for this new initiative to take advantage of the growing interest of the industry in the exploitation of the bit economy. Numerous industries have already expressed their support, and the most effective way to deliver faster

prices is to compile the results of these initiatives [13].

Additionally, ongoing, and past future initiatives and communities will contribute to the new. For example, the IoT initiative covers an important part of digital transformation, and the Future Network Initiative is working on a communication fabric for digital transformation. Wi-Fi 6 is poised to become a commercial reality by the end of 2019, and 5G is emerging from the world of unified telephone communications (802.11) for the first time, simultaneously evolving through IEE-powered computer networking. Capable, capable of uniting. Category quality). The new digital reality initiative, led by Steve Dukes, Roberto Sarko and Raj Tiwari, will support and enable future digital transformation in various IEE communities.

FUTURE

We have categorized, evaluated, and concluded detailed preference data based on the discrepancies in Digital Human investigations and application criteria in all aspects. In each phase of research, the overall Digital Human Strategy, as well as technological routes, work plans, current states, priorities, outcomes, and implementation value were summarized. In each aspect of Digital Person, we addressed the technological challenges that exist, along with the urgent main technologies, including data collection, data processing, and modelling

CONCLUSION

Through this project, what has become obvious is that much of the latest software available to build your own digital eternal lack long-term and in-depth expertise to learn and maintain an efficient digital afterlife. We assume, however, that Virtual Barry can be adapted and used to create sustainable digital people and can be retained or removed according to the wishes of those who want to create a pre-death identity or those left behind who want to retain or remove it. The legal problems concerning the management of preservation and privacy concerns, and the legal ramifications of a continuing existence outside the autonomous jurisdiction of the mortal presence, remain both an ethical and legislative conundrum.

Death is complicated in the modern age as we now have posthumous persistence and the possibilities for the physically deceased in ways not conceivable in previous generations to impact contemporary life. Although the development of virtual human beings and the prospects for realistic digital immortality remains some years away, many of these 'opportunities' are both alarming and troubling, along with the further uncertainty of how effectively digital immortals can learn and learn.



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Antimicrobial potentialities of *Streptomyces* species isolated from mangrove soil samples of Sundarbans

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ABSTRACT

To combat against recurrently emerging multi drug resistant pathogen new broad spectrum antimicrobial agents are instantly required. The most capable group of microorganisms isolated from unexplored regions of the world may be the eventual solution to this problem. Thus this study was designed to isolate several bioactive *Streptomyces* species capable of producing antimicrobial secondary metabolite from soil of Sundarbans, the only mangrove tiger land of the world. In this study total 6 strains of *Streptomyces* were isolated. In preliminarily screening of antimicrobial activity, 5 isolates showed better mild to moderate antimicrobial activity against 2 Gram-positive, 2 Gram-negative, 1 fungal strains. The most potent ten isolates were subjected to dichloromethane extraction. The secondary antimicrobial activity was performed by well diffusion method where the crude extract of A(1), B(1), B(2)1, B(2)3, E(2)1 exhibited antimicrobial activity against selected five microbes and other crude extracts didn't display significant antimicrobial effect.

KEYWORDS: *Streptomyces*, Secondary metabolites, Antimicrobial resistance, Sundarbans.

INTRODUCTION

Antibiotic resistance (ABR) is a global health threat. Bacteria, not humans or animals, become antibiotic-resistant. In recent years, clinically relevant bacteria strains with multiple drug resistant (MDR) are increasing at alarming rate all over the world (Andersson et al., 1999). These bacteria may infect humans and animals, and the infections they cause are harder to treat than those caused by non-resistant bacteria. New resistance mechanisms are emerging and spreading globally, threatening our ability to treat common infectious diseases.

Natural products are the main sources of new drugs and lead structures. Now-a-days, more than 50% of the drugs prescribed in the USA are natural products or semisynthetic derivatives (Veeresham,

2012). Microorganisms are generally a rich source of structurally diverse, biologically active secondary metabolites. Their ability to produce a diverse array of bioactive molecules has made them important in the search for novel therapeutic or preventive agents. The phylum Actinobacteria produces approximately 10,000 clinically important compounds, of which about 75% are isolated from the genus *Streptomyces* (Berdy, 2005). They are well known for their prolific abilities to produce antibiotics. Through this experiment, the mangrove habitat of Sundarbans is going to be studied to raise new compounds for the treatment of human antimicrobial infections.



METHODOLOGY

The following steps will be carried out for the proposed study:

a. Soil samples collection and isolation of *Streptomyces*

Soil samples were collected from different parts of mangrove forest Sundarbans. Samples were collected as aseptically as possible. Then soil samples were dried in hot air oven at 60-65°C for about 3h to reduce the number of bacteria other than Actinomycetes. Starch-casein media was used as isolation media. Only those organisms capable of degrading these complex polymers (mostly molds and *Streptomyces*) can grow. Isolation of *Streptomyces* species was done by using spread plate technique (Bernard, 2007). After a preliminary antibacterial activity testing, potent *Streptomyces* were selected and stored.

b. Optimization of cultural condition and extraction of secondary metabolites

Suitable media, optimum growth temperature, incubation period, pH of media and other physical conditions were developed by trial and error basis to get maximum secondary metabolites. After optimization of culture conditions, small scale liquid fermentation was carried out and extraction of the metabolites was done using dichloromethane, CH₂Cl₂ (DCM). DCM is used as solvent of extraction due to its solubility in lots of organic solvents. The concentrated extract was used for pharmacological evaluation.

c. Antimicrobial activity test

Antibacterial and antifungal activity of the extract was determined by disc diffusion method (Zaidan et al., 2005) against different types of bacteria and fungi. Nutrient agar media was prepared and filter paper discs (6 mm in diameter) were impregnated with different concentrations of crude extract. Standard kanamycin of 30µg/disc was used against bacteria and as standard Nystatin 50µg/disc against fungus. Then the petridishes were kept in incubator at 37°C for 16 h to allow the growth of the microorganisms. After proper incubation, the antimicrobial activity of the test agent was determined by measuring the diameter of zone of inhibition in terms of millimeter with a calibrated scale. Minimum inhibitory concentration (MIC) & Minimum bactericidal concentration (MBC) was also determined using standard protocol (Hassan et al., 2009).

RESULT

Preliminary Screening of Antimicrobial Activity

The resulting 13 pure cultures were tested for antimicrobial properties through the use of streak plating technique. This test is based on the fact that when the plates containing growth media are streaked with *Streptomyces* and incubated for four or five

days, certain ones will produce antibiotic substances in the media. When the test bacteria were streaked perpendicularly to the streak line, some of them gave clear zones of inhibition around the line, which indicated the production of antimicrobials by the isolates. The extent of clearing indicates the potency of the metabolite produced. Preliminary cross streaks were performed on 13 streaks (Table 1-See Appendix) with five different microbes (gram negative-*Escherichia coli*, *Salmonella enterica*; gram positive-*Staphylococcus aureus*, *Bacillus subtilis*; fungal strain- *Candida albicans*). Among them 10 strains were found showing more or less antimicrobial activity (Figure 1- See Appendix).

Evaluation of Antimicrobial Activity of Secondary Metabolites

Both gram positive and gram-negative bacterial strains and antifungal strains were taken for the test. These organisms were collected from the Microbiology Lab. of Pharmacy Discipline, Khulna University Khulna. Five crude extracts showed better antimicrobial activity against both Gram-positive and Gram-negative strains compared to control than the rest of other strains. B(2)2 extract indicated the highest zone of inhibition. Results are compiled in table 2- (See Appendix). The value of MBC was higher than the values of MIC which indicate the bacteriostatic characteristics of extract.

DISCUSSION

The number of drug-resistant pathogens are increasing now days, particularly the acquired multi-drug resistant strains, cause serious public health problems throughout the world. Therefore, the need for antimicrobial discovery and better treatments of these infections, particularly in hospitals where antibiotic resistance is immediately life threatening, is becoming a rapidly growing concern. The study of different environments throughout the world has yielded a lot of antimicrobial agents that are of great value for the treatment of many infectious diseases. Therefore, the present study shows that isolation and purification of economically important secondary metabolites from actinomycetes of Sundarban mangrove forest and characterization of the bioactive compounds is a challenging solution for exploring antimicrobial compounds from natural sources. The ultimate goal of this study was to search for antibacterial metabolite-producing novel strains. In this study, 13 microbial strains were isolated. Preliminary cross streaks of isolates showed strong antimicrobial property. Preliminarily it was observed that 10 strains showed antimicrobial activity, where after extraction only 5 strains showed antimicrobial potential by disc diffusion method. Among them one extract showed highest antimicrobial potentiality. The solvent DCM used during extraction was polar in nature, if the metabolites were non-polar, they could not grow or



show effectiveness. Recent study of Suhaidi et al., 2012 had shown that, crude extract of ethyl acetate shown microbial activity but hexane extract does not show any activity. So it is possible to get varieties of antimicrobial compounds through different solvent system. The result of this investigation revealed that the mangrove *Streptomyces* of Sundarban area is a potent source of novel antibiotics and bioactive compounds.

CONCLUSION

The dearth of new antibiotics in the face of widespread antimicrobial resistance makes for discovering new antibiotics critical for the future management of infectious disease. Purpose of the research was to search for novel bioactive secondary metabolites from *Streptomyces* species which could be helpful in the development of new antibiotic to face the challenges of resistances. Findings do proper justice with the purpose of this research. Further study on pure compound isolation from these bacterial crude extracts will help to develop better antimicrobials.

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APPENDIX

List of figure

Figure 1: Cross streaks for isolated colonies with different microbes



B(2)2 with *Bacillus subtilis*



B(2)2 with *Escherichia coli*



E(2)1with *Staphylococcus aureus*



A(3) with *Salmonella enterica*



B(1) with *Salmonella enterica*

**List of tables****Table 1: Isolated strains from the soil samples of Sundarban**

Soil Collection point	Soil sample as per serial dilution	Number of isolated colony	Pure colony labeled
Karamjal (A)	10 ⁻¹ g/ml	1	A(1)
	10 ⁻² g/ml	-	-
	10 ⁻³ g/ml	2	A(3)1, A(3)2
	10 ⁻⁴ g/ml	-	-
Hiron point (B)	10 ⁻¹ g/ml	1	B(1)
	10 ⁻² g/ml	2	B(2)1, B(2)2
	10 ⁻³ g/ml	-	-
	10 ⁻⁴ g/ml	-	-
Dublar Char (C)	10 ⁻¹ g/ml	-	-
	10 ⁻² g/ml	-	-
	10 ⁻³ g/ml	1	C(3)
	10 ⁻⁴ g/ml	1	C(4)
Kotka Forest (D)	10 ⁻¹ g/ml	1	D(1)
	10 ⁻² g/ml	-	-
	10 ⁻³ g/ml	-	-
	10 ⁻⁴ g/ml	-	-
Kotka beach (E)	10 ⁻¹ g/ml	1	E(1)
	10 ⁻² g/ml	2	E(2)1, E(2)2
	10 ⁻³ g/ml	1	E(3)
	10 ⁻⁴ g/ml	-	-

Pure colonies indicated in bold were subjected to extraction based on cross steaks technique

**Table 2: Antimicrobial activity of the crude extract (100 µg/disc)**

	Diameter of zone of inhibition in mm				
	Bacterial strain				Fungal strain
	Gram positive bacteria		Gram negative bacteria		
	<i>S. aureus</i>	<i>B. subtilis</i>	<i>E. coli</i>	<i>S. enterica</i>	<i>C. albicans</i>
Blank	-	-	-	-	-
Standard	28	33	22	24	14
A(1)	13	9	9	15	-
B(1)	9	11	17	7	6
B(2)1	12	12	9	7	-
B(2)2	19	15	14	21	5
E(2)1	9	9	11	8	-
MIC of B(2)2 (µg/ml)	66.5	125	150.5	150	N/A
MBC of B(2)2 (µg/ml)	125.5	250	260	300	N/A

MIC = Minimum Inhibitory Concentration; MBC = Minimum Bactericidal Concentration



WAY TO SMART LIFE USING DATA MINING

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Article DOI: <https://doi.org/10.36713/epra6031>

ABSTRACT

Information offers numerous prerequisites to the end clients, for example, programming, association and stage go on. In this proposed framework, we concentrate about carefully mining the information on social media. Online media turns out to be well known from the information given by biomedical and other providers. This data is usually shared so that medical service improves, costs declines and utilises the assessment which is created by client. *We suggest investigation framework that give attentions on side effects of drugs and also focus on positive and negative response. To improve health care some Clinical documents are mostly useful because these are free text data sources. Clinical reports containing data identified with manifestations and significant meds. Extracting data from enormous dataset became famous in light of the fact that clients get different thoughts from this shifted information. Data Mining and Knowledge mining became well known on the grounds that clients are aware of information and getting data of various region like wellbeing, Social, etc. After information preparing we center on clients positive and negative assessments. We exclude these feelings and discover which prescription is great; to choose this we additionally discover the symptoms of the drugs. Further we center on the manifestations of the sickness of tolerant. By taking the master specialists proposal, we rattle off the medicine of any sickness as per the side effects and we give this medicine or treatment to the client on our gathering. We can grow our examination into Data and Knowledge mining of online media and takes the client's reviews on different medications of Illness. This day by day refreshed information serves to drug industry, specialists, emergency clinics, and clinical staff, for viable future medicines.*

KEYWORDS: *Information mining, Complex organizations, social figuring, Data mining, semantic Web.*



INTRODUCTION

Web-based media is giving endless occasions to patients to offer their input about specific medications and gadgets, numerous associations can likewise obtain criticism on their administrations and items. Online media is giving unlimited events to patients to offer their contribution about explicit drugs and contraptions, various affiliations can similarly acquire analysis on their organizations and things. It offers to decorate and upgrade dispatching. This advancement serves to decline charges and lastly it builds benefit and turnover. Realities of Social media are gathering for bio examination moreover. Web-based media licenses a VNE(virtual systems administration climate) We can remove Knowledge by utilizing different computational devices. By utilizing accessible networks making a gathering of online media is likewise one of the method of information separating. . By utilizing accessible networks making a gathering of web-based media is likewise one of the method of information removing. Informal community is much the same as a structure which is an assortment of edges and hubs. These hubs, edges are associated with one another in various connections.

Because of the quick improvement of advanced literary content, insights made to be had in most recent years, text Mining, Data mining, measurement mining constant of information turns out to be more famous to change over such data in to helpful records and important information. Information mining can be considered as the extraction of crude or futile information from immense information bases, numerous applications like medical care frameworks, market investigation get focal points by such mined information and furthermore they came to realize how to remove valuable information from a major measure of information. This extracted information is generally helpful to client. Clients Internet battling came to be totally well known with net visit the utilization of social sites. Presently people will give explicit scrutinizes on net site on the web, similar to a monstrous U. S. India scope of individuals are utilizing social sites to tweet, talk. So this web records become an absolutely basic component to people groups who need to get barely any quite negative measurements of own personal field. Very Significant Data are dispatched with conversation board technique we have totally loved data identified with wellness care since all topic going related with most Disease furthermore, related welcomed on and medication. So we need mindfulness in these important realities as resources. These strategies are to be needed to get data and framework on realities yet this data having some restriction because of the reality this is capable to compositions on example model least complex strategy we just procedure on limited quantity of insights and get a little example of realities.

STATEMENT OF PROBLEM

The primary goal is to propose a novel way to deal with object compromise that depends on a current semantic similitude measure for connected information. We adjust the measure to the item compromise issue, present careful and surmised calculations that productively execute the strategies, and give a precise exploratory assessment dependent on a benchmark dataset.

This methodology can extend examination into shrewdly digging web-based media information for shopper assessment of different therapies to give fast, exceptional data for the drug business, emergency clinics, and clinical staff, on the viability (or ineffectualness) of future medicines.

REVIEW OF LITERATURE

An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it. Many people's are works on the cancer treatments to improve health care.

Si Yan and Yanliang Qi worked on cancer research they used the 3 various text mining tools namely MedLEE , HITex and caTIES. These tools are developed by Columbia University and Harvard University these tools helps to extract medical information and diagnosis from pathology report. After extracting information they made one hypothesis which contains the specific type of cancer and drugs used for same.

Jun Huan, Wei Wang, Jan Prins algorithm FFSM for the frequent subgraph mining problem. Comparing to existing algorithms, FFSM achieves substantial performance gain by efficiently handling the underlying sub graph isomorphism problem.

Alberto Ochoa , Arturo Hernndez shows study about artificial Societies and Social Simulation using Ant Colony, Particle Swarm Optimization and Cultural Algorithms.

Jan Noessner, Mathias Niepert, Christian Meilicke, and Heiner Stuckenschmidt . In this paper, we propose a novel approach to object reconciliation that is based on an existing semantic similarity measure for linked data. We adapt the measure to the object reconciliation problem, present exact and approximate algorithms that efficiently implement the methods, and provide a systematic experimental evaluation based on a benchmark dataset.

Mr. Pramod B. Deshmukh , Mrs. Aditi A. Kalia Mrs. Vrushali U. Utterwar , Mrs. Dipali M. Patil shows study on Intelligently extracting knowledge from social media has newly attracted great interest from the Biomedical and Health Informatics community to simultaneously improve healthcare result and moderate costs using consumer-generated viewpoint that is from opinion mining.



T. Anisha , Mr. N. Thulasi This approach can expand research into intelligently mining social media data for consumer opinion of various treatments to provide rapid, up-to-date information for the pharmaceutical industry, hospitals, and medical staff, on the effectiveness (or ineffectiveness) of future treatments.

S. Arul Kiruba, V. Pavithra, A. Saranya and B. Dharani. To improve the care of human health by consumers opinion from the forum posts is our aim. he propose a system for discovering and extracting a positive and negative symptoms and side effects of different drugs for lung cancer disease from influential users forum posts. Based on these outcomes the drugs are rated and ranked based on TF-IDF.

Sonali More, P. P. Joshi Survey on Social Media Data Mining Techniques for detecting useful knowledge from massive datasets like trends, patterns and rules. This survey discusses different data mining techniques used in mining social media.

DRAWBACK OF EXISTING SYSTEM

1. Mining Structural Unstructured Data is convoluted.
2. In Existing framework Lack of information in Social organization examination.
3. Existing framework Implemented uniquely for malignancy infection.
4. Existing framework can't transfers remedy paper for quiet.

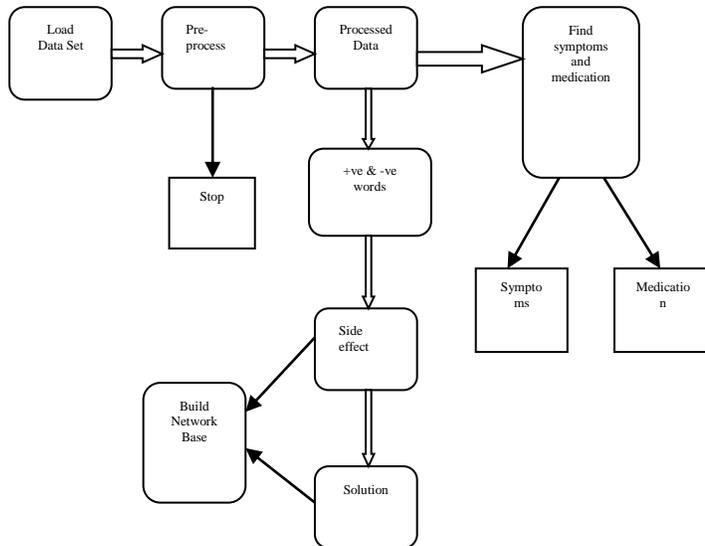
PROPOSED SYSTEM

Online media is introducing endless open doors for patients to offer their input about specific medications and gadgets, numerous associations can likewise get input on their ser-indecencies furthermore, items. Clinical associations are giving first need to interpersonal organization following in their Information Innovation offices, making opportunities for fast conveyance and items related remarks. It offers to improve also, enhance dispatching. This enhancement assists with diminishing charges lastly it expands benefit and turnover. Realities of Web-based media are gathering for bio Investigation additionally referenced also. Online media grants a VNE (virtual networking climate). We can separate Knowledge by utilizing different computational apparatuses. By utilizing accessible organizations making a gathering of online media is likewise a one of the method of information extricating. Informal community is much the same as a structure which is a assortment of edges and hubs these hubs and edges are associated with one another in various connections. Due to the quick increment and improvement of computerized literary substance measurements made to be had in most recent few years, text Mining, Data mining, measurement mining constantly of information becomes more famous to change over such data in to advantageous records and

important information. Information mining can be considered as the extraction of crude or pointless information from enormous information bases, numerous applications like medical services frameworks, market examination get focal points by such mined information and furthermore they came to know how to extricate valuable information from a major measure of information. This removed information is generally valuable to client. Clients Internet battling is come to be a totally popular with net visit the utilization of a social sites. Presently people will give explicit evaluates on net site on the web, similar to a monstrous U. S. India range of individuals are utilizing social sites to tweet, visit. So this web records become an absolutely basic component to people groups who need to get a couple of overall quite negative insights of own field. Numerous strategies had been working like comprising of connection mining, type by means of hyperlinks, forecasts essentially based on things hyperlinks, ways of life, assessment, object, establishment, and subgroup discovery, and information mining. By utilizing people criticism Link forecast, biochemical promoting, online conversation organizations (and rankings) grant for improvement of answers. Important Data are dispatch with conversation board technique we have a totally cherished data identified with wellness care since all topic going related with most malignancies and related welcomed on also, medication. So we need to mindfulness in these significant realities as resources. This all techniques are to be needed to get data and framework on realities yet this data having some constraint due to the reality this all ready to works of art on example model easiest strategy we only procedure on limited quantity of insights and get a little example of realities .

SYSTEM OVERVIEW

The framework engineering of Smart Health Care framework by Online Media Using Data Mining Technique which shows how the information can be gotten to from client and how does measure venture by stem and furthermore shows how framework create drug for client with additionally considering assessment mining by client

**Fig 1. System Architecture****A. Get Dataset**

We are taking information from Disease gathering site. This information is in the type of clients tweets identified with all Disease types and its medicines. Additionally this module gives the office to live tweet and these tweets are taken as an info dataset for handling. These information is identified with medicines and experience of specific medications on a malignant growth so it is a crude information from this we need to discover the how numerous individuals give positive reaction. In the wake of gathering this dataset, information will ship off next cycle for example Text processing.

B. Text Processing

Text handling is a cycle where we eliminate the stop words also, text stemming

- Stop words expulsion: The words instead of characteristic language words are the stop words. In short stop words are words which are trivial.
- Text stemming: Inflected and inferred words are eliminated in stemming measure. These are eliminating on their stem base or root structure. It for the most part a composed word structures.

C. Pattern Taxonomy Process

At the point when the imported archive having enormous size so its become hard to the content processor to measure dataset. So to survive this issue the archive or dataset is break in to the little sections. Presently each section is considered as discrete record. A few terms are

separating from positive report and these terms are separating in to each report. Arrangement. Along with this, social and gathering data is more important to cold clients than to hefty clients.

D. Find out Positive And Negative Words

Handled information is helpful to discover positive and negative assessment as remarks of client. To discover this we utilized our own predefined word reference in which we add the positive and negative words. To evade the reshaped words we utilized TF-IDF calculation. Term recurrence (TF) check the recurrence of words found in the archive it implies it how often happens a specific word .IDF (Inverse record recurrence) compute the rate of term happens in primary record.

E. Calculate Symptoms and Medication

By utilizing Our predefined word reference of manifestations words we can discover the side effects from clients tweets. By taking master specialists assessment or utilizing on the web Medical word reference we can rattle off the medicine as per side effects. We can add this data in our information base for best outcome. So that the client can choose their manifestations and came to know medicine for disease so the medical care is improve by utilizing our discussion since its update routinely by clients and administrator. Exploratory outcomes show that multi-see NMF is a best strategy for clinical record grouping. Also, we find that utilizing separated drug/side effect names to bunch clinical archives beats simply utilizing words.

SYSTEM REQUIREMENT**A. Hardware requirements**

- Hard disk: 128 GB
- RAM: 512 MB
- Processor: Pentium and above
- Input device: Keyboard and Mouse
- Output device: Monitor

B. Software requirements

- Operating System: Windows 7/Linux
- Back End: MySQL, Oracal 10 g
- UML Design: StarUml.

PROPOSED METHODOLOGY.**A. Navies Bayes**

Naive Bayes classifier is a probabilistic machine learning model that's used for classification task. The crux of the classifier is based on the Bayes theorem. Using Bayes theorem, we can find the probability of A happening, given that B has occurred. Here, B is the evidence and A is the hypothesis. The assumption made



here is that the predictors/features are independent. That is presence of one particular feature does not affect the other. Hence it is called naive.

$$P(A/B) = \frac{P(B/A) P(A)}{P(B)}$$

B. Support Vector Machine

Backing Vector Machine (SVM) is an administered machine learning calculation which can be utilized for both order also, relapse difficulties. Be that as it may, it is generally utilized in order issues. In this calculation, we plot every information thing as a point in n-dimensional space (where n is number of highlights you have) with the estimation of each component being the Worldwide Journal for Advanced innovation and Educational Research in Engineering (IJATERE) estimation of a specific organize. At that point, we perform arrangement zby finding the hyper-plane that separate the two classes very well (take a gander at the underneath depiction).

A. Pattern Taxonomy Process

Knn is a non-parametric directed learning strategy in which we attempt to characterize the information highlight a given classification with the assistance of preparing set. In basic words, it catches data of all preparation cases and characterizes new cases in view of a closeness.

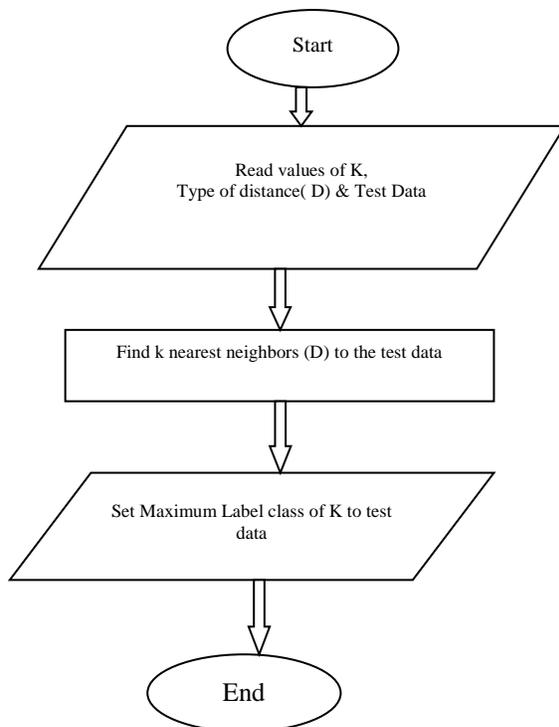


Fig 2 Working of KNN Algorithm

SYSTEM ANALYSIS

A. TEXT PROCESSING

A numerical model is a portrayal of a framework utilizing numerical ideas and language. The cycle of building up a numerical model is named as numerical

- View patient and specialist data.
- Get assessment related meds.
- Feedback System for Patient.
- Find Symptoms and Medication which is extremely valuable to everybody.

B. SET THEORY

LET THE SYSTEM BE DESCRIBED BY S,

$S = \{ I, P, R, O \}$

WHERE, S : IS A SYSTEM.

I: IS INPUT

R: IS SET OF RULES

O: FINAL OUTPUT.

$I = \{ I1; I2; I3; I4 \}$

WHERE,

I1 = ENTER PATIENT

I2 = ENTER DOCTOR INFORMATION

I3 = ENTER DISEASE SYMPTOMS.

I4 = FEEDBACK BY PATIENT.

P IS SET OF PROCEDURE OR FUNCTION OR PROCESSES OR METHODS.

$P = \{ P1, P2, P3 \};$

WHERE,

P1 = CHECK LOGIN FOR PATIENT.

P2 = SEARCHING FOR DOCTOR.

P3 = READ DISEASE SYMPTOM.

P4 = PREDICTING MEDICATION.

P5 = VIEW PATIENT LIST.

R IS SET OF RULES

$R = R1, R2;$

R1 = ENTER VALID INFORMATION.

R2 = MATCH THE DISEASE WITH SYMPTOMS.

$O = \{ O1, O2, O3 \}$

WHERE,

O1 = PREDICT MEDICATION.

O2 = DOWNLOAD PRESCRIPTION PAPER.



C. VENN DIAGRAM

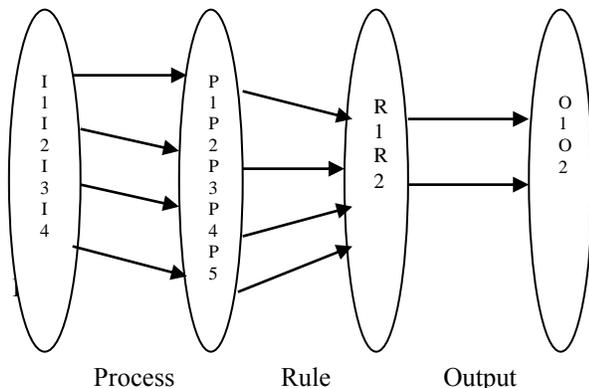


Fig 3: Venn Diagram

Where,

I1, I2, I3, I4 are inputs,

P1, P2, P3, P4, P5 are process

R1, R2 is rules

And O1, O2, O3 are output.

ADVANTAGES OF PROPOSED SYSTEM

- New disease forum that including all disease related information and data flow .
- Getting knowledge base information related all disease.
- View patient and doctor information.
- Get opinion related medicines.
- Feedback System for Patient.
- Find Symptoms and Medication which is very useful to everyone.

CONCLUSION

In this Proposed System, we construct a coordinating framework to remove treatment, result manifestation/prescription names from unstructured/semi-organized Data from Disease gathering. The general framework contains persistent treatment, positive Negative impact, Medication name, Symptoms detail, as size of data present o* n the web has taken a state of the monster it has become a need to expand the productivity of the pursuit Data. Information and information mining on information is very significant on the grounds that we are getting important data which isn't effectively accessible, and all data are continuous data. Our Proposed framework likewise adequately produces drug for each illness and furthermore permits downloading remedy paper.

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METHODOLOGICAL ASPECTS OF THE PROBLEM OF GENDER EQUALITY

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ANNOTATION

This article is devoted to methodological research of the problem of gender equality in society from a philosophical standpoint. The two largest social groups into which all of humanity is divided are women and men. The differences in human development between these two social groups are the most significant, persistent and universal. Achieving equal rights and access to education, active and equal political participation and employment for women and men is still problematic for the global community. Therefore, measuring gender inequality in human development and empowering women and girls remains a priority worldwide.

KEY WORDS: *gender, equality, inequality, man and woman, social gender, rights and opportunities, a single social category, participation in the political life of society, gender relations in society.*

DISCUSSION

The problem of social equality, like the problem of inequality, has occupied the minds of mankind for many centuries. However, there is still no single overarching concept of equality, and sometimes even doubts are expressed that it can be defined as a single social category. First of all, this is due to the multidimensionality of the concept itself, which can be considered in legal, social, economic, ethical terms.

Historically, several stages in the development of social and philosophical ideas about equality (inequality) can be distinguished. The main theoretical approaches were laid down in antiquity. The first of these emerged in the schools of the Cynics and Stoics, who offered an ethical justification for equality and appealed to the idea of a community in which there is no institutionalized power, private property and universal equal abundance is guaranteed. The next direction of understanding the topic of equality was articulated by Aristotle, who believed that equality is possible only between individuals who are identical in a certain respect, and the achievement of benefits is based on the competitiveness of individuals, since it is impossible to find an a priori procedure for selecting the most worthy. Later, on this basis, a liberal model of equality was formed. The third trend uses the concept of equality to justify the natural hierarchy of

status - as, for example, in Plato's state utopia or in his criticism of the democratic structure of the polis. Later, this tradition is developed by Thomas Hobbes, European conservatives of the early 19th century, some supporters of meritocracy in the 20th century.

Radical changes in ideas about equality took place in modern times and they are associated primarily with the religious Reformation in Europe. The emergence of the values of individualism and individual autonomy leads to the destruction of the norms of subordination to religious authorities and a sharp increase in the value of law in Protestant countries. This led to a revolution in consciousness and created the preconditions for the development of ideas about the equality of people not only in an ethical or religious sense, but also in a socio-political sense.

The Age of Enlightenment was marked by the further development of ideas about equality in the philosophy of Jean-Jacques Rousseau and especially John Locke, in the economic concept of Adam Smith and other liberal thinkers. John Locke argued that individuals equal from birth, i.e. men conclude an agreement (social contract) among themselves on the creation of a common governing body - the state. The state, according to classical liberals, should guarantee equal opportunities in the enjoyment of political freedoms and civil rights, but it is not authorized to engage in the redistribution of benefits, since



property relations are the result of private contracts, and not a social contract or state legislation. This theory had two important consequences. On the one hand, equality was gradually transformed from a religious principle or ethical value into a legal norm. On the other hand, the liberal interpretation of the role of the state in the economic sphere actually meant an emphasis on the competitiveness of individuals.

In the 19th century, discussions about equality were further developed in various socio-political theories. Classical liberalism continued to defend the principle of legal equality of citizens, but did not at all consider it possible to apply it in the economic sphere - here liberals advocated free competition and against state redistribution of benefits as destroying economic initiative and contradicting civil autonomy. Conservatives opposed equality as such, because they were convinced that the desire for equality is generated by envy and selfishness, which can lead to negative social and economic consequences (E. Burke, A. de Tocqueville). For the socialists (G.B. Mably, Morelli, G. Babeuf, Saint-Simon, F.M.Sh. Fourier, later Marxism), the main thing was equality in access to material goods and in meeting people's needs. The ideal, from the point of view of Marxism, is the communist system of equality (justice) - that is, distribution according to needs in a situation of abundance.

The topic of gender equality (inequality) does not have such a long history, although philosophical ideas about the role of men and women in society, about the cultural and symbolic meaning of "male" and "female" began to take shape in antiquity. Plato and Aristotle identified knowledge and rationality with the active masculine principle, and chaotic matter as the lowest substance with the passive feminine one. F. Bacon actively used the metaphor of gender to describe and confirm a new cognitive paradigm. J.-J. Rousseau, I. Kant, G. Hegel - each in their own way - substantiated the belonging of women to the lower, from their point of view, the world of nature and emotions, and men - to the sphere of the spiritual, rational, ethical. In Russian philosophy, V.S.Soloviev, S.N.Bulgakov, N.A. Berdyaev, V.V. Rozanov used the category of sex in their theosophical concepts. F. Engels considered the social reasons for the emergence of inequality of women in connection with the origin of the family, private property and the state. The theory of structural functionalism by T. Parsons and psychoanalysis by Z. Freud played a significant role in substantiating gender inequality.

A new stage in the development of the topic of equal rights for women and men begins with the emergence of feminist theories. The works of liberal

feminists of the 60s. XX. VB Friedan, A. Rossi, J. Richards, S. Okin, N. Bluestone are devoted to the description of various forms and types of discrimination against women in modern society. S. de Beauvoir [3], having surrounded the tradition immanent in Western culture to regard a woman as something else, that is, as a deviation from the male norm, proposed a new methodological approach to the analysis of the causes of inequality. This idea helped K. Millett to formulate the concept of patriarchy and sexual inequality policy, and S. Firestone to put forward the concept of "biological classes". Later A. Dvorkin, K. Delphi, M. Daley, N. Rich, K. Gilligan considered how social institutions and various forms of social consciousness produce and reproduce various forms of oppression of women. J. Mitchell [2], JI. Irigare, Y. Kristeva, E. Siks turned their attention to the analysis of the mental structures of a woman's personality. Gradually, in feminism, there is an idea that the sex of a person has not only biological, but also social and cultural-symbolic aspects. The topic of differences or similarities ceases to be biological in nature. In the 70s and especially in the 80s of the XX century, a gender approach to the analysis of society began to form. It is curious that for the first time the term gender was introduced into scientific circulation not by feminists, but by the American psychologist R. Stoller in 1968. On the basis of his practice of studying the identity of the so-called transsexuals, he came to the conclusion that it is easier to surgically change the patient's gender than psychologically - the personal identity as a man or a woman. Stoller suggested using the concept of gender (in English gender - gender) to denote the social and cultural aspects of gender, which had previously been used only to denote grammatical gender and therefore did not evoke any connotations with biology. Further, the idea of differentiating the concepts of sex and gender was supported by structuralist anthropologists, who constantly discovered significant differences in the understanding of what a man and a woman are in a particular society.

The development of gender studies and gender theory is associated with the names of representatives of various social and humanitarian disciplines. Philosophers E. Gross, A. Jaggar, J. Lloyd consider how the symbolism of masculine as rational and feminine as emotional manifests itself in epistemological attitudes. Anthropologists G. Rubin and J. Scott analyze the development of the sex-gender system of society. Political scientists K. Patman, S. Oakin, J. Flex investigate how the categories sex and gender are taken into account in political systems and concepts of citizenship. L. Vogel and K. Littleton systematize theoretical models of equality between women and men.



Sociologists R. Connell, C. West, D. Zimmerman, I. Hoffman, J. Lorber, S. Farrell describe the macro and micro levels of gender construction. The fact that scientists from different social and humanitarian disciplines are involved in the development of a gender approach to the analysis of social phenomena, as well as the multidimensionality of the problem of gender equality itself, determines the interdisciplinary nature of gender theory.

The ideas of anthropologists M. Mead [1] and K. Levi-Strauss, the views of theorists of social constructivism P. Berger and T. Luckmann, ethnomethodology of H. Garfinkel, as well as various intellectual trends of the 20th century are of significant value for understanding and conceptualizing the problem of gender inequality. who proposed new approaches to understanding power, sexuality and their symbolic representations in culture (G. Marcuse, V. Reich, K. Horney, M. Foucault, J. Derrida).

Existing inequalities between different segments of the population by geography (urban and rural), ethnicity, age, education and other categories underlie the inequality in development levels between and within countries. The two largest social groups into which all of humanity is divided are women and men. The differences in human development between these two social groups are the most significant, persistent and universal.

Achieving equal rights and access to education, active and equal political participation and employment for women and men is still problematic for the global community. Therefore, measuring gender inequality in human development and empowering women and girls remains a priority worldwide.

An important role in establishing the humanitarian and legal status of the problem of gender equality is played by international legal documents on human rights [4] and on the implementation of this concept in relation to women (women's human rights) - and above all the UN Convention on the Elimination of All Forms of Discrimination in relation to women [5].

In the CIS countries, feminist and gender studies began to develop in the mid-90s. last century. TA Klimenkova [8] proposed the concept of a woman as a cultural phenomenon. OV Ryabov writes about the concept of femininity in the philosophy of the "Silver Age". N.S. Yulina analyzes the feminist revision of Western philosophy. GI Zvereva explores the mutual influence of gender and culture. A.V. Kirilina introduces a gender approach to the analysis of language and intercultural communication. The inclusion of the principle of gender equality in state policy and the activities of various political institutions are considered in the works of S. G.

Aivazova, N. S. Grigorieva, E. V. Kochkina, N. A. Shvedova. The gender asymmetry of economic institutions and structures (labor market, employment - including informal, unemployment, pension system, etc.) is explored in publications of economists M.E.Baskakova, E.B. Mezentseva, M.M. Malysheva, N. M. Rimashevskaya, JI. S. Rzhantsyna, 3. A. Hotkina. Sociologists T. A. Gurko, E. A. Zdravomyslova, O. M. Zdravomyslova, A. A. Temkina, I. N. Tartakovskaya study the features of the Russian gender system. I.S. Kon and S.A. Ushakin promote the problem of "men's research". ER Yarskaya-Smirnova studies the social aspects of the position of otherness. JI. N. Popkova, N. JI. Pushkareva, JI. P. Repina, T. B. Ryabova, O. A. Khasbulatova, V. I. Uspenskaya apply gender methodology to the study of various historical stages. JI. N. Zavadskaya conducts gender expertise of Russian legislation, and S. V. Polenina investigates international legislation in the field of gender equality [9]. N. V. Khodyreva and I. A. Kletsina integrate the gender approach into psychology.

In our country, the issues of gender imbalance have been raised to the state level since independence. The revival of national self-awareness after independence contributed to the development of "traditional" gender relations in the family and society, limiting women to their reproductive role, restricting the choice of education and professional development of both men and women. These "traditional" gender relations can contribute to the development of stereotypes and barriers that can restrict women and men in their rights and the achievement of gender equality in Uzbekistan.

The gender profile of Uzbekistan is influenced by many factors, three of which are dominant: the social and economic difficulties of the transition period, the Soviet legacy, and traditional values and cultural traditions. Since 1991, with regard to gender issues in Uzbekistan, along with progress, there has been a certain slowdown in the development of gender equality in society. The state joined the Beijing Plan of Action and the Convention on the Elimination of All Forms of Discrimination against Women in 1995, and since 2001 the government has regularly developed a National Action Plan to implement the recommendations of the UN Committee on the Elimination of Discrimination against Women (CEDAW Committee). Uzbekistan signed the Millennium Declaration and published, with UN support, the first MDG report in 2006. The Constitution guarantees equality of rights and opportunities for women and men; there are also more than 60 relevant laws and regulations. More recently, a new Anti-Trafficking in Persons Law was adopted, which was accompanied



by some debate about the need for a law on equal rights and opportunities for women and men.

The Women's Committee of the Republic of Uzbekistan, a national machinery for the empowerment of women, established in 1991, is responsible for the implementation of state policy on gender equality. The organization is chaired by a Deputy Prime Minister; it has branches in all regions of the country.

The following global gender issues influence women's participation in decision-making:

traditionally in the patriarchal system, the head of the household is the oldest man in the family;

despite the fact that there are more women in the world than men, women are still underrepresented at the level of local and national governments, as well as in the international arena;

women's access to the distribution of natural resources and financial resources is limited compared to men; the main barriers to greater participation in decision-making are different for women and men. For women, it is housework, cultural perceptions of the role of women, and lack of family support; for men this is insufficient support from the electorate, lack of financial and party support.

Despite the fact that women make up more than 50% of the population of Uzbekistan, they still represent only 22% of the government, only 6.2% represent the executive branch and 21% of the judiciary. Leading positions in the economy are 27% occupied by women and 73% by men; women make up only 23% of all entrepreneurs.

Progress in human development cannot be achieved without addressing gender-based inequalities. Existing gender issues create inequalities between women and men in the enjoyment of development benefits. Women and girls continue to have fewer opportunities for education and good jobs, decision-making at the local and national levels, and continue to suffer from discrimination and violence. Since gender issues affect women and men and their relationships, gender stereotypes and restrictions harm men as well, limiting their professional and personal life. The average life expectancy of men is shorter than that of women.

In recent years, Uzbekistan has adopted a law "On guarantees of equal rights and opportunities for women and men", as well as a decree of the President of the country "On measures to improve the system of social rehabilitation and adaptation, as well as the prevention of domestic violence", "On measures to improve systems of social rehabilitation and adaptation, as well as prevention of family and domestic violence", aimed at regulating relations in the field of ensuring equal rights and opportunities for women and men, regulating relations in the field of protecting women from all forms of oppression

and violence [5,6,7,10]. Although gender as a social construct is strengthened and reproduced by existing societies, cultures, institutions, this process is not constant and can change. Integration of gender issues is one of the most modern and effective approaches to achieving gender equality. This strategy will place women and men, boys and girls, at the center of policy-making and decision-making, and ensure that their voices and interests are taken into account and policy outcomes are equitable for all recipients and beneficiaries.

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THE EFFECT OF CONTINUOUS PASSIVE MOTION (CPM) VERSUS STATIC PROGRESSIVE SPLINT IN POST FRACTURE STIFFNESS OF ELBOW IN IMPROVING THE UPPER LIMB FUNCTION

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ABSTRACT

Introduction: Trauma is common cause of stiffness in elbow joint with rates ranging from 3% to 20 % (2).The exact incidence of post traumatic stiffness is difficult to estimate because of its multi-factorial pathogenesis .Hence, the stiffness that result is due to the combined effect of initial trauma and surgical trauma. Three potential factors for an elbow to be so prone for stiffness –complex articular congruity, brachial muscles covering the elbow and predisposing it to myositic ossificance, and prolonged immobilization in presences of unstable fracture.

Purpose: The primary objective of this study is to find out the effect of CPM versus static progressive splint in post fracture stiffness of elbow in improving the upper limb function.

Design:- An experimental pretest – posttest study design was used.

Method: 20 subjects who fulfilled the inclusion criteria were included in the study (in two groups).

Group-A received CPM intervention for 06 week. Group-B received static progressive splint for 06 week. Administration of CPM-A session of 40 min was conducted with gradually increasing flexion extension range of motion for 06 week. Administration of Static Progressive Splint-Turnbuckle splint administrated 30 minutes for one session, 3 times per day with gradually increasing flexion extension range of motion.

Results: The result of this study shows that in elbow joint fracture stiffness, both CPM and Static progressive splint act as effective modalities in improving upper extremity function and level of independent in ADL and IADL.

Conclusions: From the obtained results of the study it is seen that there is significant differences within the group after taking the intervention of CPM and Static progressive splint but there is no significant differences in-between the group so null hypothesis was accepted and experimental hypothesis was rejected. It is concluded that there is no significant between the CPM and Static progressive splinting group.

KEYWORDS: Elbow joint fractures, continuous passive motion (CPM), Static progressive splint (Turnbuckle splint), stiffness, Orthosis, myositic ossificans, Mobilization.



INTRODUCTION

Elbow joint fractures makes up 4.3% of all fractures. The elbow is prone to stiffness after injury and fractures can often leads to substantial functional impairment (1). The normal range of flexion extension of elbow is 0-145. The functional range of motion required for daily activities is 30-130 of flexion and extension (2). The stiffness of elbow is defined as flexion <120 and extension >30. Stiffness of elbow cause difficulty in placement of hand in space and hence limits the functional capacity (3).

Trauma is common cause of stiffness in elbow joint with rates ranging from 3% to 20% (2). The exact incidence of post traumatic stiffness is difficult to estimate because of its multi-factorial pathogenesis. Hence, the stiffness that result is due to the combined effect of initial trauma and surgical trauma. Three potential factors for an elbow to be so prone for stiffness – complex articular congruity, brachial muscles covering the elbow and predisposing it to myositis ossificans, and prolonged immobilization in presences of unstable fracture. (4).

To prevents the stiffness of elbow joint, it is important to start the elbow motion early after injury or surgery. Early motion can be initiated by active exercise or continuous passive motion (CPM). Static progressive splint (Turnbuckle splint) used as a modality in improving elbow stiffness. Static progressive splint place the tissues at maximally tolerable load and then as the tissue stretch, the load decreases. This uses the viscoelastic properties of the tissue; tissue tension decrease over time when placed at a constant length (5). CPM after a stable fracture has been used extensively in the elbow (6).

Static progressive Orthosis are a type of mobilization Orthosis that incorporate non elastic components to apply force to a joint to hold it in its end range position in order to improve passive joint range of motion. Static progressive Orthosis allow progressive changes in joint position as the Passive range of motion of the involved joint changes and Improves over time (7). Static progressive Orthosis is a type of Mobilization Orthosis that therapist use to help their client regain passive motion in stiff joint and tissues. This type of Orthosis incorporates non-elastic components to apply force to the stiff joint or tissue, holding it at end-range position to improve passive motion. In this manner, static progressive Orthosis permits progressive changes in tissue position (8).

CPM was a valuable therapeutic modality in the post-operative management of intraarticular fracture of elbow (9). The use of CPM post-operatively

contributed to a 30% reduction in hospitalization time. The use of CPM decreases the incidence of myositis ossificans (10). CPM for passive motion following a surgical joint release, stable fracture resulted in both subjective and objective outcomes for overall function, range of motion and cost effectiveness (11).

Post operative rehabilitation protocol that include CPM are proven to be statistically more effective than protocols that did not include CPM (compared to splinting alone, patient directed exercises) (12).

RATIONALE

- The Current evidence supports static progressive Orthosis as Intervention for patients with upper extremity joint stiffness or contracture in elbow stiffness.
- Continuous passive motion (CPM) after a stable elbow fracture has been used extensively for its better improvement in joint arc of movement around elbow joint (13).
- There is less comparative study between CPM and Static progressive e Orthosis in elbow stiffness.
- The primary objective of this study is to find out the effect of CPM versus static progressive splint in post fracture stiffness of elbow in improving the upper limb function.

AIM AND OBJECTIVE

The effect of continuous passive motion (CPM) versus static progressive splint in elbow stiffness to improve in upper limb function.

HYPOTHESIS

Continuous passive motion (CPM) is more effective than static progressive splint in improving upper limb function in elbow stiffness following elbow fracture.

NULLHYPOTHESIS

There is no difference between CPM and static progressive splint to improving upper limb function in elbow stiffness.

METHODOLOGY

- The Study was conducted at Swami Vivekananda National Institute of Rehabilitation Training and Research, Olatpur, Cuttack, Odisha.



SAMPLE SIZE

- 20 adults(each group 10 patients) both male and female with post fracture stiff elbow, who were attending the department of Occupational therapy SVNIRTAR and who fulfilled inclusion criteria were recruited for the study.

STUY DESIGN

- An Experimental Pretest – Post test study design was used.

INCLUSION CRITERIA

- Both intra-articular and extra articular fractures were taken.
- Duration of injury should be in between 6 months.
- Both male and female groups were taken.
- Age group 12-60.

EXCLUSION CRITERIA

- Elbow fracture associated with neurological disorder.
- Elbow joint fracture associated with nerve injury.
- Affected side associated with shoulder and wrist fracture.

OUTCOME MEASURE

- Goniometric range of motion evaluation.
- Upper Extremity Functional Index(UEFI)

PROCEDURE

- 20 subjects who fulfilled the inclusion criteria were included in the study (in two groups).
- Group-A received CPM intervention for 06 week. Group-B received static progressive splint for 06 week.
- ROM and UEFI administrated pre-intervention and post -intervention.

INSTRUMENT USED

- Goniometer
- CPM machine

Administration of CPM

- A session of 40 min was conducted with gradually increasing flexion extension range of motion for 06 week.

Administration of Static Progressive Splint

- Turnbuckle splint administrated 30 minutes for one session, 3 times per day with gradually increasing flexion extension range of motion.





DATA ANALYSIS

After completion of all (pre test and post test) evaluation results were collected and data were put and analysed by using SPSS version 23.0.

The raw score of Upper extremity functional index (UEFI) and active range of motion (AROM), pre test and post test score of both group A and B were analysed

Wilcoxon signed rank test were used to comparison of changes in UEFI pre raw score and UEFI post raw score within the group-A and group-B.

Mann-whitney test were used to comparison pre raw score of UEFI between the group-A and group-B and changes in post raw score between the two groups (group-A and group-B).

Independent sample T- test were used to analysed the pre and post raw score of active range of motion in between the group-A and group-B.

RESULTS

The analysis of data gives the following tables showing the demographic characteristic and test results.

SL. NO.	BASELINE CHARACTERISTICS	A GROUP	B GROUP
1	No. of subjects	10	10
2	Age range	21-45	20-45
3	Mean age	31	34
4	Sex ratio (M : F)	6:4	7:3

Table 1. Table showing descriptive statistics of Group "A" and "B"

The Table 1 shows no of participants in the study, the mean age and the male and female ratio of both the groups.



GROUP	z VALUE	p VALUE	α
A Pre-Post (n=10)	-2.810	.005	0.05
B Pre-Post (n=10)	-2.812	.005	0.05

Table 2. Wilcoxon-sin Rank Test of UEFI within the Group “A” & “B”

Table 2 shows significant improvement within the pre and post raw score of UEFI within the group- A and group- B.

GROUP	u VALUE	p VALUE	α
Pre-UEFI (A & B)	43.5	.631	0.05
Post-UEFI (A & B)	47.0	.853	0.05

Table 3. Man-Whitney test for UEFI between the Group “A” & “B”

Table 3 shows there is no significant changes between the UEFI pre and post raw score in between groups A and B.

GROUP	Levene's Test for Equality of Variances		t-test for Equality of Means		α
	f VALUE	Sig.	t VALUE	Df	
PRE- ROM (A ~ B)	.008	.928	-.831	18	Sig.(2-tailed) .417 .417
			-.831	17.754	

Table 4.Independent sample T-test for AROM between the group “A” & “B” before intervention (Pre test score).

Table -4 shows the non significant test value of AROM between the group A and B before the intervention.



GROUP	t VALUE	Df	Sig. (2-tailed)	α
POST- ROM (A ~ B)	.496 .496	18 17.741	.626 .626	0.05

Table 5.T-test between the group “A” & “B” after intervention (Post test score).

Table -5 shows the non significant test value of AROM between the group A and B after the intervention.

DISCUSSION

This study aimed at investigating the comparison between the CPM and static progressive splint in post fracture stiffness of elbow in improving upper extremity function (UEFI). The hypothesis of study was CPM has better out comes in comparison with static progressive splint.

Continuous passive motion (CPM) properly applied during the first two stages of stiffness acts to pump blood and edema fluid away from the joint and periarticular tissues. This allows maintenance of normal periarticular soft tissue compliance. CPM is thus effective in preventing the development of stiffness if full motion is applied immediately(48hr) following surgery and continued until swelling that limits the full motion of the joint no longer develops. This concept has been applied successfully to elbow rehabilitation. If passive motion is not started within the first 48 hours the prognosis for improvement is significantly diminished(20).

O’Driscoll and Giori have demonstrated that CPM immediately following a surgical procedure acts to pump blood and edema fluid out of the joint and periarticular tissues. The reduction of these fluids from a synovial joint reduces the risk of post-surgical joint stiffness.

The result of this study suggest that group-A after 8weeks of CPM intervention and group-B after 8weeks of static progressive splint intervention showed there is significant difference within the group-A and group-B in pre and post raw score, but there is no significant difference in between the group-A and group-B in post raw score of UEFI and AROM.

In this study the patients include in the study for both the group was reported late. Thus the intervention for CPM group was delayed i.e. the intervention must started much later than the stipulated

48hr after surgery; hence this facilitates accumulation of fluid in joint space and edema followed by joint stiffness and deficit in upper extremity function.

In review literature it was suggested that CPM has better out come in range of motion and upper extremity function, if started early 48 hr after the surgical management or conservative management so the observed effect of CPM did not show a significant improvement as compared to static progressive splint.

The result of this study shows that in elbow joint fracture stiffness, both CPM and Static progressive splint act as effective modalities in improving upper extremity function and level of independent in ADL and IADL.

Further it was also noticed that male are more prone to develop elbow fracture stiffness in comparison with female. In this experiment male: female ratio was 6:4 for group-A and 7:3 for group-B.

In group-A (CPM) one patient who had extra-articular fracture started CPM after 48hr shows full functional recovery in flexion extension and moderate recovery in pronation supination with greater score in UEFI.

In group-A(CPM), one patient with intra articular complicated fractures showed poor flexion extension range of motion with low UEFI score and upper extremity functional independent in both ADL and IADL score with delayed CPM intervention. Complicated intra-articular fracture with delayed CPM intervention increases fluid accumulation and edema secondary to joint stiffness.

Aldridge et al 2004, did a study reviewed the outcomes of 106 consecutive patients who had undergone anterior elbow release for the treatment of a flexion contracture between July 1975 and June 2001. . Postoperatively, fifty-four of the seventy-seven patients were treated with continuous passive motion and the



other twenty- three patients were treated with extension splinting. The mean preoperative extension in the seventy-seven patients was 52 degrees, which decreased to 20 degrees postoperatively. The mean flexion increased from 111 degrees preoperatively to 117 degrees postoperatively, and the mean total arc of motion increased from 59 degrees to 97 degrees. The total arc of motion in the patients treated with continuous passive motion increased 45 degrees, compared with an increase of 26 degrees in those treated with extension splinting.

In group-B it was noticed that static progressive splint is more effective in delayed rehabilitative management due to application of force to the stiff joint or tissue, holding it at end-range position to improve passive motion. The client is instructed to increase the force as the joint or tissue accommodates a new end-range position over time. In this manner, static progressive splint permits progressive changes in tissue position. There are two types of loading conditions with the application of mobilizing splint, creep based and stress relaxation. Static progressive splint loading application is based in stress relaxation technique. In stress relaxation, the displacement is constant and the applied force varies. This is the principle of static progressive splint, in which patients are instructed to constantly adjust and readjust the tension on their stiff joints. The tissue reaches the plastic deformation state more quickly and the effects will last longer(19 ,20)

Anil K Bhat, Kumar Bhaskaranand, Surej Gopinathan Nair, 2010 did a study to assess the effectiveness of a turnbuckle splint as a means of improving the range of motion in patients with elbow stiffness. Patients were instructed to wear the splint during the daytime for a mean of 15 hours. The result was, the mean flexion contracture reduced from 59° to 27° and the range of motion improved from 57° to 102°.

In review literature CPM has better patient satisfactory than Static progressive splint if early intervention was started after internal fixation or plaster cast removal. In Static progressive intervention patient unsatisfactory due to wearing schedule, cosmetically appearances and donning doffing difficulty in work place.

During experiment in CPM group, the force application passively for increasing joint mobility was graded scale. Which can accommodate according to duration of injury, pain tolerance, type of fracture and available joint range of motion. This type of advantages help patient to regain full range of motion in rehabilitation of elbow stiffness and therapeutic

modalities can be started early to improve upper extremity function.

This study provides a scene of effectiveness of CPM and Static progressive splint. In this study it was concluded that both modalities (CPM and SPS) were significant value in upper limb elbow rehabilitation. It was also observed that CPM is effective more immediately after surgical stabilization and Static progressive splint is more effective after developing soft stiffness due to better distraction force.

Bae & Waters, 2001, did a study of 33 post elbow contracture were treated with open surgical release followed by CPM, for 6 weeks postoperatively, which shows extension improved from 57 -15 degree, and average flexion improved from 109-123 degree and total arc of motion improved from 53-107 degree.

CONCLUSION

From the obtained results of the study it is seen that there is significant differences within the group after taking the intervention of CPM and Static progressive splint but there is no significant differences in-between the group so null hypothesis was accepted and experimental hypothesis was rejected. It is concluded that there is no significant between the CPM and Static progressive splinting group.

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INFLUENCE OF GROUP CLOSELY ON THE STABILITY OF PROFESSIONAL MOTIVATION IN STUDENTS

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ANNOTATION

Motivation is a common name for the processes, methods, and means of encouraging students to engage in cognitive activity and actively master the content of education. Motivation is based on motives, which mean specific motivations, incentives that make a person act and perform actions. As motives, emotions and aspirations, interests and needs, ideals and attitudes can act in conjunction. Therefore, motives are complex dynamic systems in which choice and decision-making, analysis and evaluation of choice are carried out. Motivation for students is the most effective way to improve the learning process. Motives are the driving forces of the learning process and assimilation of the material.

KEY WORDS: *motivation, group closely, stability, professional motivation, pedagogical skill, education.*

DISCUSSION

Motivation for learning is a rather complex and ambiguous process of changing the attitude of a person, both to a particular subject of study and to the entire educational process. The motives or, in other words, the reasons that stimulate a person and encourage him to be active, in this case - to learn can be very different. Changes taking place in various spheres of human activity put forward more and more new requirements for the organization and quality of professional education. A modern graduate of a professional educational institution should not only possess special knowledge, skills and abilities, but also feel the need for achievements and success; know that he will be in demand in the labor market. It is necessary to instill in students of professional educational institutions an interest in the accumulation of knowledge, independent activity and continuous self-education. To achieve these goals, students must be motivated to learn.

Motivation is the main driving force in human behavior and activity, including in the process of forming a future professional. Therefore, the issue of incentives and motives for students' educational and professional activities becomes particularly important.

Motives is a mobile system that can be influenced. Even if the choice of the future

profession was not made by the student completely independently and not consciously enough, then, purposefully forming a stable system of motives for activity, it is possible to help the future specialist in professional adaptation and professional development. A thorough study of the motives for choosing a future profession will make it possible to correct the motives of teaching and influence the professional development of students. The effectiveness of the educational process is directly related to how high the motivation and incentive to master the future profession is. There are the following classification of students' learning motivation:

- cognitive motives (acquiring new knowledge and becoming more erudite);
- broad social motives (implies duty, responsibility, understanding of the social significance of the teaching, to benefit society);
- expressed in the desire of the individual to assert himself in society, to assert his social status through the teaching;
- pragmatic motives (to have a higher salary, to receive a decent reward for their work);
- professional and value motives (expanding opportunities to get a promising and interesting job);
- aesthetic motives (getting pleasure from learning, revealing your hidden abilities and talents);



- status-positional motives (the desire to establish oneself in society through teaching or social activities, to gain recognition from others, to occupy a certain position);

- communicative motives (expanding the circle of communication by increasing your intellectual level and making new acquaintances);

- traditional-historical motives (established stereotypes that have emerged in society and strengthened over time);

- utilitarian and practical motives (mercantile, learn self-education, the desire to learn a particular subject of interest);

- educational and cognitive motives (orientation to ways of obtaining knowledge, mastering specific academic subjects) - motives of social and personal prestige (to assert oneself and take a certain position in society and in a certain immediate social environment in the future);

- unconscious motives (getting education not on their own, but on the influence of someone, based on a complete lack of understanding of the meaning of the information received and a complete lack of interest in the cognitive process).

These motivations can merge to form a common motivation for learning. Dale Carnegie states: "... there is only one way in the world to get people to do something - to make a person want to do it." In order for a student to really get involved in the work, it is necessary that the tasks that are set before him in the course of educational activities are not only understandable, but also internally accepted by him, i.e. that they acquire significance for the student. Since the true source of a person's motivation is in himself, it is necessary that he himself wanted to do something and did it. Therefore, the main motive of the teaching is the internal motive force. Eastern wisdom says: "And one person can lead a horse to water, but even a hundred can not make it drink water."... So the student can be forced to sit in class, but it is impossible to forcibly teach something and develop his abilities. The horse drinks water when he wants to drink, and the student learns when he wants to learn. The student will want and will study himself only when this activity will be interesting and attractive to him. He needs motives for cognitive activity.

Students of professional educational institutions learn much more about their chosen profession during practical training, performing laboratory and practical work. They see an incentive, motivation for further theoretical training, realizing that they can apply their knowledge in practice.

Motivation of learning - means of encouraging the student to productive cognitive activity, active development of the content of education. A motive is a student's focus on certain aspects of academic work, related to the student's internal attitude to it and

attitude to the subject of his activity. In the system of educational motives, external and internal motives are intertwined. Internal motives include such as proper development in the process of learning; it is necessary that the trainee himself wants to do something and does it, because the true source of a person is in himself.

External motives come from parents, teachers, the group in which the student is studying, the environment or society - in the form of hints, instructions, hints, prodding, demands, compulsions, i.e. it is learning as a forced behavior and often meets internal resistance of the individual. That is why the decisive importance is attached not to the motives of teaching - external pressure, but to the motives of teaching - internal motivating forces. These motives may have different power of influence on the nature and results of the educational process. The most pronounced external moments in the motives of studying for the sake of material reward and avoiding failure. The educational process is a complex type of activity, there are many motives for learning, and they can manifest themselves not only separately in each person, but also merge into a single whole, forming complex motivational systems. How to increase students' motivation? Let's look at some ways to increase motivation among students of professional educational institutions. The process of motivating students by the teacher. A student is not a schoolboy who can say "it's necessary", the student needs to explain how the knowledge will be useful to him in the future. And if the teacher answers in the spirit of "it will be useful in life", then the student loses interest.

A student comes to a professional educational institution not only for knowledge, but also (to a greater extent) to become a good specialist in their field. Therefore, the teacher must be able to prove to students that his subject will really be useful in their future activities.

Stimulation for the result, not for the evaluation. The student should not only be interested in the subject, but also open up opportunities for practical use of knowledge. To do this, you can conduct integrated lessons (seminars), which trace the connection between educational and special subjects. Here, cognitive motives are widely used, which manifest themselves as an orientation towards erudition.

The student-teacher link. It is very important for the student that the teacher is his mentor, so that he can ask for help during the educational process, discuss the issues that concern him (even if they are remotely related to the topic of the lesson). The teacher should use an effective form of motivation to strengthen the student's self-confidence. The more students are trusted, the more willing they are to cooperate with the teacher in the learning process.



Respect for students. You can create situations for them in the classroom in which they can defend their opinion, take part in discussions, find several possible solutions to the problem, solve them through the integrated application of known solutions, and so on. Use the carrot and stick method. An effective tool for increasing the motivation of students' learning activities and their independence is the introduction of a rating system of assessment. Knowledge is evaluated in points that are collected during the entire period of training in a particular subject for different types of successfully completed work (both independent and practical, and classroom).

At the beginning of the semester to identify extended opportunities for students to make the student aware of and understood that his absence from a lecture or practical class is minus a certain point, and the preparation of the report, the conference presentation, preparation of presentation etc. - plus so many points. As a result, the student will be motivated by specific bonuses and preferences on the exam and will treat the educational process with more responsibility.

Motivation by personal example. The student's interest in the subject is determined not only by the professional presentation of the educational material, but also by the personal qualities of the teacher. A teacher who is friendly to others, is not late, seriously and responsibly performs his work, checks the control, independent and practical work of students on time, is appreciated by them.

Keeping your promises. You can't cheat students. If you promised a fascinating tour or an interesting test, competition or watch a movie, then do not deviate from your goals. Formation of a positive attitude to the profession. It is necessary to encourage and approve the choice of profession of students, to focus on important professional competencies and specific issues. The teacher himself needs to respect the various professions in which students of an educational institution study. Friendly, calm tone, positive, friendly attitude, the key to effective work.

Intonation should be enough to highlight the important thing, make an accent, make you think. If there are controversial moments among representatives of various professions, the teacher-mentor should be able to explain and convince everyone of the need and importance of their specialty. We all know from childhood that "all professions are necessary, all professions are important." Providing maximum freedom of choice to students. In the educational institution there are days of self-government, which motivate students to independent activities. Invite students to develop criteria and a form of assessment of their knowledge, a form of individual independent work, a topic of the report or a variant of the task, and review the answers

of their classmates. Each person wants to be involved in some process, to realize that his point of view is taken into account-this increases motivation.

Approve students' progress, demonstrate their achievements (for example, for good or excellent performance of work). Public praise, especially with a description of the merits and distinctive features, adds to the student's self-confidence, increases his internal motivation and desire to achieve a similar result again. Interest in students' personal experience in professional activities and their personal opinion on any issues.

The teacher's interest in students can be mutual. Joint discussion of various issues, solution of problems, organization of discussions and disputes, consideration of various situational problems are important methods not only for organizing the educational process, but also for establishing high-quality interaction between the teacher and the student.

Teachers of professional educational institutions currently face the task of creating such conditions under which students in a short time could learn the maximum possible amount of knowledge, along with the acquisition of skills for their creative application in practice. The main task of a professional educational institution is to stimulate the interests of learning in such a way that the goal of students is not just to obtain a diploma, but a diploma that is supported by strong and stable knowledge based on practice.

Motivating students is one of the most effective ways to improve the learning process and outcomes, and motivations are the driving force behind learning and learning. In our XXI century, access to information does not cause any difficulties, there is a question of how to motivate students of professional institutions to constantly study materials and assimilate the necessary and useful knowledge. A special role for the emergence of motivation is the awakening of interest in the chosen profession, the branch of its research. The responsibility for motivating students to learn and improving it belongs not only to teachers and the family, but also to society. After all, it is young intelligent people who are the basis for the stable development of our country, the main driving force in this unstable world.

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MODERN PEDAGOGICAL APPROACHES TO EDUCATION

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ANNOTATION

This article discusses education as an integral process of development. The components of this phenomenon, the factors that influence the process and the impact of learning on the development of the individual. How the process of acquiring and transferring the accumulated experience and knowledge takes place. The relationship between education and training and the impact they have on each other. Types of social connections and the impact they have on a person.

KEY WORDS: *Upbringing, personality, educational activities, pedagogy, development, conflict, individual.*

DISCUSSION

Describing the essence of the concept of "education", it should be noted that its interpretation in the pedagogical literature is diverse. Education (as a pedagogical phenomenon) is a purposeful professional activity of a teacher that contributes to the maximum development of the child's personality, his entry into the context of modern culture, becoming a subject of his own life, the formation of his motives and values.

Questions of education interested the great scientists of the past, who determined the theoretical foundation of modern research. Ancient pedagogy considered the moral education of the mind necessary, since it believed that the development of an "evil mind" can only be destructive. Aristotle said: "Nature has given man a weapon-an intellectual moral force, but he can use this weapon in the opposite direction, so a person without moral foundations is a creature and the most impious and wild, unchangeable in their sexual and taste instincts»

Education-initially, it is a procedure built on the improvement of the individual. During the development of the child, the more experienced pass on their knowledge and experience, which has accumulated over many centuries.

Today, this process is divided into several stages. Often, these stages are attached to educational organizations such as schools, kindergartens and other educational centers. The task of the educator in these organizations is not only to convey the

material, but also to make sure that it is mastered in a high-quality way.

Many factors affect the fruitfulness of educational activities, among them we can note the systematic and purposeful process, the qualification of the teacher, as well as the nature of the child, they have the greatest impact on the productivity of activities. Summarizing all this, we can conclude that every developmental activity has a unique character.

Interaction between the pupil and the teacher, between peers is an integral part of the overall development. Through it, the individual adapts, during which various social roles are assigned to him, and through this a personality is formed.

Social interactions form social connections, which are divided into the following types: exchange, conflict, competition, cooperation.

Cooperation is a type of social interaction that is most often traced in family relationships. This type of relationship is characterized by clearly coordinated actions aimed at achieving any goals.

Exchange - most often traced in the provision of any services, or during the purchase and sale. It consists in the fact that people, during interaction, on the basis of the experience gained, calculate the possible profit and costs.

Competition is an interaction based on the struggle of various interests for the most favorable conditions. It is often observed in the struggle of companies for consumers.

The most dangerous interaction is conflict. Conflict is a type of social interaction in which the



resolution of contradictions occurs in the most acute form. Conflicts are most common in the school environment.

This is always accompanied by strong experiences of the individual and most often occurs between peers. Due to the lack of desire to share their problems, this area is rather poorly studied and requires more detailed analysis. It is he who carries the greatest destructive component, which is fundamental to the development of psychological trauma.

During upbringing, a person develops in many aspects. In turn, education is divided into ethical, spiritual and moral, physical, psychological and many other areas. All of them are interconnected and together form a complete system. This shows the complexity and complexity of this process.

Education has goals - close, intermediate, and promising. Relatives are concerned with achieving results in physical, moral, mental and other education. Intermediate goals of education relate to the emergence of already developed skills, new personality traits in a small perspective. Long-term goals are what a person wants to be in life.

In the school environment, there are numerous sections that offer various types of self-development. They are aimed at both the development of physical characteristics and the improvement of creative skills. This is necessary in order to teach the child in a harmonious and comprehensive way.

However, education does not have the status of a separate process, it closely borders on education and training, since these processes are aimed at the individual as a whole. Education is almost impossible to break down into separate components that affect emotions, will, character and intelligence. But despite all this, there are differences in these processes. In the process of education, the main goal is to form a person as a person and his worldview, when in the process of education, the primary task is to develop abilities and acquire knowledge.

In education, there are basic principles reflected in the provisions that should guide the educator in the process of education.

The main requirements that apply to the principles of education:

1) obligation requires mandatory, full implementation of the principles of education in practice;

2) complexity, involves the simultaneous application of the principles of education at all stages of the educational process;

3) equivalence, there are no main and secondary principles among the principles, equal attention to all principles excludes violations in the educational process.

Also, there are principles of education.

1. Personification. Basic knowledge is the knowledge of the individual's personal qualities.

2. Naturalness. It is known that heredity plays a significant role in the procedure of human development.

3. Cultural conformity. This principle reflects the importance of the culture of the society in which the individual is located.

4. Humanization. This education tries to harmoniously improve any individual.

5. Differentiation. According to this principle, the development process should take into account the age of the student.

Pedagogy as a science of education accumulates and systematizes scientific knowledge in its field, studies the laws of educational and educational processes, considers the transfer of accumulated experience from the older generation to the younger, examines the foundations of the formation and growth of the individual, its socialization and creative self-development.

Educational activity is the subject of pedagogy, it is carried out by educators in educational centers. The main source of knowledge is scientific works, all kinds of educational practices, the results of special studies, along with this, local traditions and customs are also considered. The object of pedagogy is an individual, in particular, a child as an example of a developing personality.

The child is seen as an object in many disciplines. The exclusivity of pedagogy lies in the fact that it allows you to combine and systematize data from all the sciences about the child in general.

Pedagogy is not only a science, but also a real art of education. These categories are closely related to each other, and practice shows that successful pedagogical activity is always based on deep and comprehensive knowledge of theoretical material.

Education occupies a special place in the pedagogical process. It has exceptional features and does not focus on either the learning process or development, and is most often studied separately. In the process of learning, the teacher - student system is traced, when the educator and the pupil are in the upbringing.

Education is a labor-intensive process of specific formation of an individual, it consists in constant pedagogical interaction, focused on the brilliant implementation of the goal of education.

The most important element of the personality structure is its value orientations. Value orientations are a reflection in the consciousness of a person of the values recognized by him as strategic life goals and general worldview orientations. The set of established value orientations ensures the stability of the individual, the continuity of a certain type of behavior and activity, expressed in the direction of needs and interests. Because of this, value



orientations are the most important factor regulating and determining the motivation of the individual. Moreover, these orientations are the result of a choice based on the acquired information, life experience and the influence of educators, mentors. Value orientations are reflected in the functions of the process of civic education.

Thus, the process of civic education implies a complex set of pedagogical acts, which has a specific content and a peculiar structure, and is carried out as a result of purposeful and consistent actions.

The purpose of these acts is to form in a person the moral ideals of society, the feeling of love for the Motherland, the desire for peace. The main elements of citizenship include a moral and legal culture that allows a person to fulfill his duties towards the state and treat other citizens with respect. Formation of the experience of civil action, which allows a person to practically realize the most important human values that underlie their worldview, choose a line of behavior, express their attitude to society and to themselves. The components of civic education are patriotic, legal, and moral, which ensure the formation of a sense of self-esteem, internal freedom, discipline, respect and trust for other citizens, and the ability to perform assigned duties.

The specificity of the goals of the educational process is not constant and has various manifestations, it is entirely subject to the political system. These goals are determined by the degree of development of civilization, the nature of relations in society, the socio-economic system, culture and traditions. In addition, the purpose of education is correlated with the system of values accepted in society.

Issues of education are a cultural and historical trend in the development of any society. Education is one of the most important ways of familiarizing with the cultural and historical experience of the people and a condition for individual change and development of the individual. The basic characteristics of education are the personality, the driving forces of its development, age and individual characteristics, methods that enhance the positive influence of the child's upbringing environment and correct unfavorable ones.

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RESTORATION OF INDUSTRIAL ENTERPRISES IN UZBEKISTAN AND THEIR IMPACT ON THE ENVIRONMENT (ON THE EXAMPLE OF 30-50-IES OF THE XX CENTURY)

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ANNOTATION

The article covers the process of industrialization of the Republic of Uzbekistan and its prospects. On the basis of industrialization, the issues of restoration and development of industrial sectors oriented to export from import substitution policy, its stages were analyzed. The main factors of industrial development in previous periods have been considered. In the place of the abstract, the possibility of using the effect of foreign economic relations in the implementation of the industrialization process of the country is highlighted.

KEY WORDS: *industrialization, nature, society, population, biosphere, industry, economic, market, import and export.*

DISCUSSION

Nature and Man are interrelated with each other on the basis of clear laws. Violation of this attitude can lead to environmental crises. Today, as a result of the rapid development of industrial enterprises in the society, pollution of the biosphere is observed, and one of the most important tasks arising out of it is the conduct of Health Improvement work against technological pollution.

Progress in the industrial sector and the centralization of the way of life of people are making an active and passive impact on their health. The fact that heavy and non-ferrous metals, toxic organic substances are also consumed through food and drinking water, is noted as an active factor, while the saturation of the environment with such substances is called a passive factor. Both of these have a negative impact on human health and life expectancy.

The main factors that pollute the atmospheric air are associated with industrial enterprises, factories and factories, motor vehicles. Also, steel melting furnaces, domna furnaces, Coke-chemical industry, plants that provide nitrogen fertilizers, coal and non-ferrous metal deposits, railway transport vehicles also throw continuous toxic substances into the atmosphere.

Another area that throws the most harmful substances into the air is the oil and gas industry. It

emits 225 thousand tons of is gas a year into the air, throwing more than 600 tons of matter into the atmosphere overnight. When processing oil-gas, hydrocarbons, sulphate dioxide, nitrogen and carbon dioxide, aldehyde, ammonia particles poison the atmosphere. This industry also includes the production of synthetic rubber, which throws light volatile and soluble substances into the air. Even at a distance of 25 kilometers from the oil plant, the particles of soot are met.

In the polymerization of plastics and linoleums, too, when obtaining phenols, ammonia substances, ethers, organic acids and other toxic substances are separated. If the norm of these substances in the air increases, it certainly harms the development of living organisms, which will not have a negative effect on both the animal and the botanical world.

The impact of industrial enterprises production on the environment, human health and lifestyle was formed at a very rapid pace and reached an unprecedented level. Industrial enterprises, waste from household services enterprises, have been moving in soil, water or atmospheric air for years, moving from one species to another. In particular, lead, zinc, mishaac, bathtub, molybdenum, cadmium, mercury and a number of other chemical elements



accumulate in the soil, water or air in the case of highly toxic compounds over time.

The circulation (movement) of atmospheric air affects the local climatic conditions and the water regime through the climate, soil and vegetation layer. Atmospheric air is one of the most necessary components of the natural environment for human life. Sufficient normalization of human life depends in many respects on the composition of the inhaled air and the degree of purity. To some extent, pollution of atmospheric air leads to the fact that a person's organism suffers from various diseases.

A person breathes an average of 25 kilograms of air per day. As a result, slags, soot and gases contained in the air accumulate in the body. This gradually leads to a weakening of the human body, and as a result, the body loses the ability to adequately resist various infections. We will consider some of these in separate examples.

For example, if sulfur oxides accumulate in the composition of atmospheric air more than the REChK of SO₂ (the permissible limit concentration), it causes bronchitis, inflammation of the lungs, increased blood pressure, liver and eye diseases. Because the SO₂ contained in the air reacts with water, forming a weak sulfuric acid and inflammation of the mucous membranes of the eyes. As a result, the eye becomes red.

As a result of an increase in uglerod oxides in the air, hemoglobin in the body decreases, the heart, vascular systems are disrupted, sclerosis is increased, the head turns, the work of the heart is accelerated, sleep is disrupted, a person becomes irritable.

Hydrocarbons (gasoline vapors, pentane, hexane, etc.) have an incredibly strong effect on the human body. Their small concentration also leads to diseases such as headaches, dizziness. If the concentration of gasoline vapors in the air is 600 mg/m³, and a person inhales this air for 8 hours, then a cough appears, causing a headache.

The air content Rechksi of fluorine compounds (fluorine hydrogen, etc.) is 0,02 mg/m³. Under the influence of these compounds, blood comes from the nose, teeth and bones in general can be absorbed, a sickle appears, gastrointestinal diseases increase.

An increase in the concentration of lead compounds (REChK in the air content is 0,0003 mg/m³) in the composition of the atmosphere has a significant negative effect on nervous disorders, urinary outflow, respiratory tract. Lead compounds penetrate into the body through the respiratory tract, in which about 50 percent of compounds accumulate.

Oil and gas as the main source of energy supply is one of the main factors in the development of economic and national economy of each state. In order to deliver gas to the consumer, it is necessary to improve the equipment and equipment associated

with its collection and preparation, as well as drying, cleaning, separation of aggressive components.

The increase in the number of people per year, the increase in the need for resources in the biosphere, science and technology, the rapid development of industry, the increase in the number of vehicles, agriculture, the chemization of production caused an increase in the needs in the biosphere. And this did not remain without showing its negative effects on the environment, on the flora and fauna, on atmospheric air, on ponds, on the natural circulation of groundwater and on the soil condition.

The study of the impact of the oil and gas industry on the biosphere, the analysis and finding out measures to prevent its negative effects, the introduction of methods of neutralization into practice is an extremely urgent issue.

Many similar enterprises have a certain degree of influence on the environment in the process of their work, that is, they release waste from gas, liquid and solid state. This harmful waste has a negative effect on our biosphere. Of course, although there are permissible norms of such harmful substances, but no one can guarantee that excess waste from this norm will not come out.

The main reason for this is that in industrial enterprises the production process is slow and the cleaning devices are not working at the required level. Thousands of tons of emissions into atmospheric air fall into the soil cover under the influence of rain, snow, wind and other factors over the years, leading to an increase in chemical pollution.

From these enterprises, a large amount of pollutants are released into the environment per year. The chemical composition of industrial containers varies according to the type of side (solid, liquid, gaseous) and the methods of its combustion. When coal, oil, gas fuels are burned, they do not burn completely for various reasons. Therefore, from industrial enterprises, a large amount of immature burned particles (soot, ash, dust) and harmful gases (uglerod double oxide), hydrocarbons, sulfur compounds, sulfur (II) oxides, nitrogen oxides are released into the atmosphere.

The increase in the permissible release concentrations of various chemical compounds in the atmosphere Air has a huge negative impact on the development and quality of products in the world of plants, especially agricultural crops. In industrialized areas, the development of plants is slowed down, and the life expectancy of some trees is sharply reduced. According to the data, the birch tree has a life expectancy of 350-400 years in natural conditions, in urban parks 120-220 years, and around the busiest highways 40-50 years.



The harmful effect of atmospheric air dust on the plant depends on its chemical composition and its dissolution in water, the time of its capture, how much it falls, the plant's resistance to such an effect and a number of other environmental factors. Dusty Fallen Leaf poorly absorbs light, returning more, therefore, the process of photosynthesis in pollinated leaves decreases. The greater the thickness of the dust on the Leaf, the greater the water consumption for the furrow. Solid granules, falling with dust on the Leaf, disrupt the growth of the plant, the activity of assimilating organs, the quality of the harvest.

In conclusion, we can say that various harmful wastes in the production process of industrial enterprises go out into the environment and have their negative impact on our biosphere.

Emissions from industrial enterprises can cause a reduction in biogeocenosis and biosenosis, even its disappearance, by showing its negative effect on all shells in the biosphere, mainly sulfur oxides, nitrogen oxides, uglerod oxides, heavy metals - iron, lead, copper, cobalt, nickel, cadmium, mercury salts, etc. Therefore, we need to create clean environmental conditions by trying to bring new, modern, low-waste technologies to industrial enterprises, as well as reduce emissions into the environment.

In our country, the key to industrial development in the past as factors, it is possible to indicate the following: implementation of targeted programs; formation of infrastructure (water, gas, electricity, transport, etc.); establishment of new enterprises in the light industry and mastering the production of finished products; establishment of new enterprises in the field of leather processing and mastering the production of new products; establishment of new enterprises in the field of processing of rural; development of the construction materials industry; increase the effectiveness of bank loans in the development of industry; increase the share of joint ventures in the development of industry; processing of local extensive use of privileges and preferences created within the framework of the program of localization and the international industrial fair and cooperation; expansion of the scale of exports of manufactured products, assistance

It should be noted that in the leading sectors of the economy, structural the huge attention paid to the implementation of the changes and the diversification of these sectors has had a positive impact on the volume of exports, its composition and quality.

From this it can be seen that today's modernization process at a time of deepening, the emphasis on the development of industrial sectors, increasing its economic indicators and ensuring its stability has become more and more a priority than

ever before, reflecting the relevance of the topic addressed.

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PRIORITY DIRECTIONS OF MODERNIZATION OF AGRICULTURE IN UZBEKISTAN

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ANNOTATION

In the future, the satisfaction of our country's need for agricultural products is one of the main tasks facing the agrarian sector. The article describes the views on the further development of farmer farms and their effectiveness, as well as the importance of new technologies, foreign experiences and innovations in the development and stability of the agrarian sector.

KEY WORDS: *economic reforms, innovation, modernization, peasant and farmer farms, agrarian sector, production of products, liberalization of the economy, labor force.*

DISCUSSION

Today in our country there is a change in every sphere, on every front, more precisely the rise. In its place, a lot of work is also carried out on modernization and rapid development of Agriculture. Consequently, agriculture is one of the important sectors of the economy of Uzbekistan. This network is considered one of the promising sources of meeting the demand of the population of our country for food products, and the processing industry sectors for raw materials.

In 2017-2021, it is urgent to fulfill the important tasks set out in the strategy of action on five priority directions of development of the Republic of Uzbekistan, at the same time, to develop the agrarian sector on the basis of world experience and to create agricultural infrastructure, to introduce advanced technologies for rational use of water resources, to grow and export

The implementation of land reclamation, desalination, increasing productivity, introduction of modern irrigation systems and ensuring food security is of great importance in the agricultural sector of our country. Food security in the Republic of Uzbekistan leads to a further increase in the demand for creating additional conditions for farmer farms in the creation of the necessary economic and organizational and legal bases for the development of Agriculture and water economy in the country, the implementation of structural changes and the introduction of market relations. This, in turn, works on modernization of

Agriculture in Uzbekistan, introduction of new techniques and advanced technologies into production are accelerated from year to year, in addition to increasing the efficiency of use of limited land and Water Resources, Capital and labor resources, the decline in the price of products is based on in-depth analysis of the state of the cluster system

Decree of the president of the Republic of Uzbekistan "On measures for further Reformation and development of Agriculture in 2016-2020" dated December 29, 2015 is an inalienable continuation of the work carried out in this regard, increasing the volume of cultivation of agricultural products over the next five years creates the basis for bringing the industry to a new In this decision, 170 thousand hectares of cotton and 50 thousand hectares of grain, a total of 220 thousand hectares of irrigated areas in place of potatoes, vegetables, melons, oil and ozocabop crops, as well as the restoration of new intensive gardens are envisaged in the period up to 2020. Soil fertility of such crop areas is low, meliorative condition and water supply is heavy, and in recent years cotton yield has been reduced from the account of lands not exceeding 10-15 cents per hectare. This decision is significant not only by sharply increasing the production of food products and guaranteeing the fullness of our markets, but also by serving to create new jobs through their processing. In addition, the increase in the volume of exports of agricultural products creates the ground



for a further increase in the incomes of farmers and farmers. It is also planned to achieve high yields with the use of intensive technologies in the cultivation of grain, cotton. These measures, as well as the use of intensive technologies, are planned to increase the yield to 26.9 Centner in average cotton production by 2020 and 66.4 Centner in grain production. With this decision, special measures have been taken to develop farming on a large scale, to further improve the selection and seedling of agricultural crops, to introduce intensive agrotechnologies into practice, to improve the system of combating plant diseases, insects and pests.

We are aware of modern methods of production and innovation, which perfectly master agricultural technologies, we need air with water. Farm the board of directors should establish cooperation with the ministries of Agriculture and Water Resources, Innovation Development, develop programs for the training and retraining of farmers. The goal of agricultural reforms is the introduction of advanced technologies for the rational use of land and water resources, along with economic benefits, as well as the provision of food security, an indicator of increasing the welfare of the people. This should never be forgotten.

Today, the renewal of our society, the development of democratic processes are largely associated with how effective the reforms in agriculture are. Therefore, our government pays special attention to the reform of the village at the state level. In the future, the satisfaction of our country's need for agricultural products is one of the main tasks set before the farmer farms. This is due to the further development of farmer farms and the increase in their efficiency. As one of the main objectives of the structural reform of our country's agriculture, in the conditions of modernization and diversification of the economy, it is important to provide its population with food products and industrial enterprises with raw materials on the basis of increasing the Sustainable Development and competitiveness of the industry.

It is necessary to take additional measures to fill the domestic market of Uzbekistan with products produced in our country, the quality of imported goods is high, the price of which is cheaper, and to meet the growing demands and needs of the population more fully. Therefore, it is necessary to recognize that priority directions such as deepening market reforms and further liberalization of the economy, accelerated development of the private network, increasing its share in the country's economy, deepening and expanding the scope of work on the further development of small business and farming, deepening the reforms in the banking and financial systems have been identified before the In particular, the development of farmer farms

operating on the basis of the principles of development of property relations, increase of materialism, guarantees of free and independent activity has also been defined as priority tasks and great attention is paid to the improvement of their legal and regulatory base in accordance with the requirements of the market economy. As a result of the development of farmer farms, new opportunities were created in the agrarian sector, which were manifested in the following:

– First led to the formation of the principles of private ownership in the village and the ranks of real secondary owners;

– Secondly, the issues of increasing the efficiency of the use of means of production, that is, the use of property;

– Thirdly, the cultivation of quality and affordable products, forcing to put into operation measures to increase the net profit of the farm;

– fourthly, the farmer farms independently carry out their production and economic relations on the basis of contracts concluded with other economic entities. Taking into account the above and other advantages, the organization and development of farmer farms in the Republic is carried out in an evolutionary way, that is, gradually.

In our opinion, this path is not only practical, but also scientifically-theoretically justified. Because the principle of gradual deepening of economic reforms in agriculture is recognized and practice proves the effectiveness of this. After all, each stage has its own characteristics and serves as the basis for the improvement of legal-normative norms, corresponding to the stage that follows it. In general, at the stages of the development of the farming movement, tasks corresponding to each of them were determined and effectively carried out, and this process has the character of continuing.

At present, an important issue facing the Republic's agriculture is the creation of new jobs, additional processing and processing, storage of horticultural products, increasing employment in rural areas on account of expansion of services. By diversifying production, increasing productivity, the well-being of farmers and the rural population is consistently improving, which leads to an increase in the productivity of agricultural producers. In this direction, there are positive results, they need to be scored and further developed.

Technical and technological delay in the updating of fixed assets and technological equipment, the introduction of information and communication technologies in the field is the most serious problem of Agriculture. In agricultural enterprises, such indicators as the knowledge of workers and specialists, age, experience and qualifications, the ability to creatively approach work play a big role. For this reason, in the tender competitions in the



organization of farmer farms, these indicators are also taken into account. In the organization of farmer farms, the head of the farmer's farm is required to have exactly the above indicators, which in our opinion is the right way. Because the further fate and development of Agriculture in our country largely depends on their activities.

It can be seen that very important reforms are being carried out on the scale of the government on the development of the agricultural sector in the Republic and ensuring its economic stability in the future. In our opinion, it is also important to attract investments in the agrarian sector, to inform the heads of farmers and farmers with the achievements of Science and technology development and related innovations, and to formulate skills to teach them the experiences of developed countries in the agrarian sector. If we get acquainted with the experience of the agricultural sector of some developed countries, then the Netherlands, which is on the 2nd place after the United States in terms of exports of agricultural products all over the world, is engaged in farming on its territory of 1 million hectares and exports agricultural products worth \$ 102 billion.

And in Uzbekistan there is a land that can be cultivated on an area of about 4 million hectares, and a large part of these lands are grown cotton and generate around 2 billion dollars a year from cotton and textile products. The secret of the success of the Netherlands in this result and agriculture is that conditions have been created for the free functioning of the farmers and the state intervention in their activities has been limited. In addition, the state supports new technologies and innovations that serve for the development of the industry, farmer farms have the opportunity to freely choose the planting of agricultural crops themselves and determine the direction of production.

Over the past period, although the producers of agricultural products were private owners, there were no opportunities to give them sufficient freedom to grow agricultural products that would bring them income, to choose the type of crops themselves. As a result of the decree of the president of the Republic of Uzbekistan dated October 9, 2017 "On protection of the rights and legitimate interests of farmers, peasant farms and landowners, measures for the radical improvement of the system of effective use of agricultural land," the majority of the land plots were occupied by cotton and grain crops, there were cases when In the normative document adopted in order to develop the agrarian sector in the future and give more freedom, starting from the harvest of 2018, the effectiveness of the use of land plots of farmer farms will be discussed in the district councils of people's deputies every quarter, the practice of discussing the field on which peasant farms and landowners.

In the place of conclusion, it should be said that, using foreign experience, along with all factors for the development of the agrarian sector of our country, the application of scientific research results and innovations to the production process gives an important economic result. Due to the fact that this area provides for the integration of science, education and production in our country, the achievement of innovation in manufacturing enterprises and its application do not yield enough of its own. Taking this into account, it would be desirable to attract innovations to the agricultural sector and to arm themselves with new technologies, having established them on the basis of the system proposed above.

Using these experiences, in order to develop the agrarian sector in our country, to ensure the stability of peasant and farmer farms:

- First of all, the formation of the system of "digital agriculture" and its implementation on a large scale;

- Second, to provide farmers with freedom in the selection and cultivation of agricultural crops, to support the innovation of farmer farms;

- Thirdly, for the introduction of high-tech and management-based practices in the field of farming;

- Fourthly, to the establishment of science-education-production integration with the agricultural network;

-in the fifth, it is necessary to support farmers through state programs to improve the quality of products and reduce the price of products by developing new technologies, conducting research, introducing these technologies and research results, coordinating the activities of producers, researchers and interested government agencies, improving the logistics system and promoting local agricultural products in foreign markets.

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EFFORTS AND RESULTS OF REFORMING THE ACTIVITIES OF SCHOOLS AND MADRASAS IN BUKHARA (LATE 19TH AND EARLY 20TH CENTURIES)

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ABSTRACT

In the Bukhara Emirate in the late 19th and early 20th centuries, attempts were made to cover the activities of schools and madrasas, their teaching system, financial support on the basis of an analysis of the relevant references. During the period under study, the old models of teaching in Bukhara madrasas lagged behind the scientific and technological achievements in the education system of advanced countries. In the last quarter of the 19th century, the Bukhara Emirate began to develop progressive ideas on the implementation of reforms in the socio-economic and cultural spheres, including the education system. Ismail Gaspirinsky, his ideas on the new methodological schools, teaching methods, their introduction into the educational system of Bukhara madrasas were reflected in the study.

KEY WORDS: *schools and madrasas, “adno”, “avrot”, “a’lo”, waqf property, jadid method, jadid schools, rus-tuzem schools, “Tarjimon” newspaper, reform.*

INTRODUCTION

Bukhara region has long been a center of science and culture. It is known from our history that many great scientists, cultural and educational figures came from this region.

The role and place of schools and madrasas in the socio-economic and cultural life of Bukhara was great. By the end of the 19th century, changes in the socio-political, economic and cultural spheres of the world began to affect the socio-economic processes in the Turkestan region, including the Emirate of Bukhara. The development of industrial relations in the advanced European countries, new achievements in science and culture, new views have led to the implementation of new reforms in the education system of these countries. The introduction of these progressive achievements and reforms into the existing schools and madrasas in Bukhara has become one of the most pressing issues. Mature intellectuals were formed who realized that basically, the reform of the education system of Bukhara schools and madrasas, which are based on the ideas

of Islamic teachings, the introduction of the teaching of advanced secular sciences in these institutions, in its time made the country one of the developed countries were ones of the factors of acquisition. One such person is Ismail Gaspirinsky. The Bukhara education system and the reforms that need to be introduced in it are reflected in Gaspirinsky's views, which can be seen in the reforms in education in Uzbekistan today. President of the Republic of Uzbekistan Sh. M. Mirziyoyev said: “Further strengthening the material and technical base of science and education, ensuring that it is not only in line with the times, but also ahead of time, advanced training and retraining of teachers... our state will mobilize all opportunities for the widespread use of modern methods, to carry out this work in cooperation with authoritative centers abroad, the introduction of modern technologies in the industry”[1].



LITERATURE REVIEW

If we look at the analysis of sources and literature on the subject in the late XIX - early XX centuries, we can refer to the works of Ahmad Donish, Sadridin Ayni, who played a major role in the socio-political life of the Bukhara Emirate at that time [2].

We also see articles on the history of Bukhara in "Tarjimon" newspaper, edited by Ismail Gaspirinsky [3].

In the works of officials N.P. Ostroumov, F.M. Kerensky, V.P. Nalivkin, who worked in the administrative education system of Turkestan at that time, there is information about the education system of this period [4].

The ideas of the Tsarist government's colonial policy are reflected in the works of these officials, who worked in the administration of the education system of the

Governor-General of Turkestan. Their works have attempted to negatively assess the activities of Muslim schools and madrassas.

After the independence of Uzbekistan, the restoration of historical truth has risen to the level of state policy. During the years of independence, the Turkestan region has been reflected in the research work of historians I.Alimov, B.Rasulov, G.Solijonova, D.Ismailova on the activities of Muslim educational institutions [5].

Ismail Gaspirinsky's views on the socio-political, economic and cultural life of Turkestan at that time, his views on the reform of the Muslim education system are also reflected in the research work of Gaspirinsky scholars such as Z. Abdurashidov, B. Kasimov, U. Dolimov, N. Karimov [6].

RESEARCH METHODOLOGY

In the territory of Bukhara there were schools and madrasas of lower and upper levels of the traditional education system, and this education system continued in the last quarter of the XIX century and the beginning of the XX century in the Bukhara Emirate. During this period, the madrasas of the Bukhara Emirate enrolled literate people between the ages of 10 and 40 who had graduated from primary schools. Education in madrasas consisted of three stages: primary (adno), secondary (avrot), and advanced (excellent). Classes began at sunrise (after the Fajr prayer) and were scheduled 4 days a week. Students were divided into community groups depending on which book they were reading, in large madrasas there were from 5-10 to 20 students in each group. The lessons were taught by the teachers, the place where the book was taught in the previous lesson was opened and a new lesson was started. The team leader read the next part of the book aloud, and as he read, the teacher corrected his

pronunciation. In some cases, the teacher even used the discussion method to explain the new topic. In madrasas, students firstly learned Arabic. The sciences taught in the madrasas included Arabic grammar, theology and jurisprudence, and philosophy.

Arabic grammar includes: morphology, syntax, Arabic speech, Arabic history, the science of reading the Qur'an, and the culture of scientific debate;

Theology and jurisprudence: interpretation of the Qur'an, hadith, jurisprudence, religious beliefs, teaching of division of inheritance (faroiz), basics of jurisprudence;

Philosophy includes logic, mathematics, geography, astronomy, medicine, chemistry, and the natural sciences [7].

Schools and madrasas in the Bukhara Emirate were funded by the waqf's property, which consisted of several hundred thousand tanabs. The number of madrasas in the Emirate during this period varies from source to source. Historian G. Hidoyatov states that in the XIX century in Bukhara there were 60 madrasas [8], according to historian K. Rajabov, there were 450 madrasas in the whole Bukhara region, 400 of them in old Bukhara, 2 in Karmana, 2 in Old Chorjoi, 4 in Karshi, and the rest in other cities [9], according to M. Jabborov and R. Arslonzoda, by the end of the 19th century, in Turkestan, of the 322 existing madrasas, 192 operated in the Fergana region. Graduates of the madrasa held positions such as judges, imams, and teachers in schools. Students with a strong passion for science were able to continue their education at the Bukhara madrasas, one of the most prestigious in Central Asia [10]. According to these authors, the number of schools and madrasas in Fergana, their activities, did not decrease, but increased steadily until 1917, despite the fact that the control of Tsarist Russian officials over income property increased. A similar situation could be observed in the Emirate of Bukhara. In this regard, the number of madrasas in Bukhara had increased. From the second half of the 19th century onwards, Bukhara madrasas began to lag behind in development due to the failure of introduction of the old standards of teaching in the madrasas, the lack of scientific achievements of advanced European countries in the madrasas' education. During this historical period, when the Emirate of Bukhara was semi-dependent on the Russian Empire, the idea of understanding the national identity and using the achievements of advanced science and technology began to emerge.

In the Emirate of Bukhara, progressive ideas on the implementation of reforms in the socio-political and cultural spheres, including the education system, began to emerge. Such ideas were reflected in the views of the enlightened scholar and politician



Ahmad Donish in the last quarter of the 19th century. However, his progressive ideas in the field of education were opposed by the upper echelons of Bukhara and could not find supporters among the general public. According to Ahmad Donish, in the field of education, sciences and methods of teaching them in schools and madrasas should be radically updated, that is, if the secular sciences are not studied more widely in the education system, if innovations in modern science and technology are not mastered, the state and society cannot escape from the level of backwardness [11]. It is noteworthy that his views are in line with the essence of our very important and serious tasks related to the upbringing of a harmoniously developed generation in the state education program of our republic today.

Ismailbek Gaspirinsky (1851-1914), the founder of "Tarjimon" newspaper and the "ideological father of Jadidism", played an important role in the spread of enlightenment ideas in Bukhara. His introduction of the "savtiya method" in Bukhara schools, the abandonment of the outdated method of dry memorization, and the need to explain to the general public the advantages of this method, which is designed to speed up the literacy of students.

Ismailbek Gaspirinsky, in his 1881 book "Russian Islam" put forward the idea of radically reforming the education system of the Turkic peoples of the Russian Empire, including the peoples of Turkestan [12]. Ismailbek Gaspirinsky's views on the native language and education in this work were reflected in the articles published in the newspaper "Tarjimon". The first edition of this newspaper was published on April 10, 1883. Ismailbek Gaspirinsky was the editor of the newspaper from this year until the end of his life, in 1914. In order to implement the ideas put forward in his work "Russian Islam", he transformed the "Zanjirli" madrasa in Bogchasaray into a new madrasa with a new style of teaching.

Amir Abdulhadkhan, who traveled through the central cities of Russia in 1882-1893, met with Ismailbek Gaspirinsky in Bogchasaray. During the meeting, Gaspirinsky briefed the Emir on the advantages of the new method schools and stressed that the opening of such schools was a matter of time [13].

In 1893, Ismailbek Gaspirinsky came to Turkestan for the first time. He also visited Bukhara during the trip. He advocated the introduction of new methods in the education system of Bukhara madrasas. According to him, the modernization of the education system of Turkestan Muslim madrasas, including large Bukhara madrasas, promoted the teaching of geography, history, natural sciences, arithmetic, pedagogy, and Russian law. This suggests that graduates of the university or the Lazarev Institute of Oriental Languages should teach in these educational institutions, which would give

the status of "higher" or "first" level madrasas in the rehabilitated madrasas. He argued that ignorant, fanatical teachers could be replaced by progressive priests, knowledgeable scholars, and skilled educators [14].

Enlightener Ismail Gaspirinsky proposed reforms in Bukhara schools to teach Russian by local teachers, with the aim of cultivating enlightened people who can defend the political rights of the Turkestan people and further strengthening Turkestan's cultural ties with European countries, he had taken into account their place and role. He was seriously concerned about the fact that teaching in Russian-language schools set up by Tsarist Russian officials was conducted in the spirit of Russian chauvinism.

At the 1st Congress of Teachers of Russian Schools in Turkestan in Tashkent in 1883, Sattorkhon Abdugafforov came up with a similar proposal, but it was strongly opposed by the missionaries [15].

According to Ismailbek Gaspirinsky, one of the characteristics of a nation is language and education. Without these two, a nation cannot be independent. Language is the history of a nation's living movement. Its past and present are expressed in language. In 1907, the Russian State Education Inspectorate ruled that Muslims in the country could be taught in their mother tongue. However, this special decision emphasized the need to teach Muslim children in their mother tongue only in the local dialect. Ismailbek Gaspirinsky considered this decision to be absolutely wrong.

According to him, the Russian and Russian-style schools opened in Turkestan were like a stillborn institution. Its graduates were ugly people who had taken on the appearance of Russian life and were fighting against enlightenment and progress, who had completely lost the best traditions, customs and history of their nation [16].

In 1891, the Governor-General of Turkestan sent a letter to A.V. Vrevsky about calling for radical reform of schools and madrasas in the country. In this letter, he emphasized the need to simplify local school teaching procedures, create a higher madrasa through reforms, and train teachers from local children. In turn, the Governor-General asked to study the letter and make suggestions from the famous missionary, the director of the Tashkent Teachers' Seminary, N.P. Ostroumov, who was one of Ilminsky's students, and the regional specialist V.P. Nalivkin.

After reading the letter, Ostroumov sent a letter to the governor-general. He wrote: "I was impressed by Mr. Gaspirinsky's courage in reading this letter. It is unacceptable for an unknown person to discuss such an important issue in the context of Mr. Gaspirinsky, who has absolutely nothing to do with Russia's foreign policy - Turkestan" [17].



Ostroumov's colleague Nalivkin agreed with him. The governor-general refused Gaspirinsky, citing the opinions of Ostroumov and Nalivkin.

Ismail Gaspirinsky came to Turkestan for the second time in 1908. During the trip, he also visited Bukhara, where he met with various sections of the local population and talked about the establishment of Jadid schools. In October 1908, the first Jadid school was established in the house of Mirzo Abdulvahid Munzim at the gates of the Sallahkhana in Bukhara [18].

Of course, Ismail Gaspirinsky's travels to Turkestan and his efforts to reform the education system did not go unnoticed. There were those who continued his work in this country. They all referred to Ismail Gaspirinsky as "our esteemed teacher."

CONCLUSIONS AND SUGGESTIONS

In conclusion, it is appropriate to emphasize the following:

- From the second half of the 19th century, the activities of schools and madrasas in the Emirate of Bukhara began to lag behind the achievements of the education system of advanced European countries;

- During the period under study, the idea of reforming the education system of the Bukhara Emirate began to emerge. Initially, these ideas were reflected in the views of Ahmad Donish.

- Ismail Gaspirinsky's views reflected the issues of adapting the activities of large madrasas in Bukhara to the spirit of the times, giving them the status of "high" or "first" level madrasas.

- At the end of the 19th century and the beginning of the 20th century, the reforms needed in the field of education in the Emirate of Bukhara were opposed by the Tsarist Russian colonial system and the local old conservative forces in Bukhara.

- These were the ideas of Ismail Gansprinsky that were advanced for his time we see that it has not lost its relevance today.

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THE ROLE OF MEDIA EDUCATION IN PROVIDING THE IMPROVEMENT OF THE QUALITY OF PROFESSIONAL TRAINING OF MANAGERS

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ABSTRACT

The article substantiates the special role of media education in solving the problem of improving the quality of professional training of managers, carried out in higher educational institutions.

KEY WORDS: *media education, professional training of managers, quality of education, media and information literacy.*

РОЛЬ МЕДИАОБРАЗОВАНИЯ В ОБЕСПЕЧЕНИИ ПОВЫШЕНИЯ КАЧЕСТВА ПРОФЕССИОНАЛЬНОЙ ПОДГОТОВКИ МЕНЕДЖЕРОВ

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АННОТАЦИЯ: В статье обосновывается особая роль медиа образования в решении проблемы повышения качества профессиональной подготовки менеджеров, осуществляемой в высших учебных заведениях.

КЛЮЧЕВЫЕ СЛОВА: медиа образование, профессиональная подготовка менеджеров, качество образования, медиа- и информационная грамотность.

ВВЕДЕНИЕ

Важно констатировать, что данное определение дает нам правовые основания фактически отождествлять термины «качество образования» и «качество (профессиональной) подготовки», используя их как синонимичные. Отметим также, что проявившаяся в законе ориентация на социальный заказ, на способность выдавать результат, удовлетворяющий определенным ожиданиям, в общем и целом соответствует современным представлениям о семантическом наполнении термина. Так, Е.В.Яковлев, желая гармонизировать такие

смысловые аспекты опорной категории «качество», как соответствие стандартам или спецификации и соответствие запросам потребителя, предлагает использовать термин «качество образования» в значении «социальной категории, определяющей состояние и результативность процесса образования в обществе, его соответствие потребностям и ожиданиям общества (различных социальных групп) в развитии и формировании гражданских, бытовых и профессиональных компетенций личности».

Но возникает вопрос: на ожидания каких именно социальных групп следует



ориентироваться в первую очередь? Ясно, что их много и что они могут даже противоречить друг другу. С одной стороны, есть потребность двоечника-студента, ожидающего подчас одного – получения диплома о высшем образовании как «бумажки», без которой невозможно устроиться на приличную работу, а вовсе не знаний и не профессиональных компетенций. С другой стороны, есть интересы общества, ждущего от вузов высококвалифицированных кадров для всех отраслей материального и духовного производства страны.

Чтобы в очередной раз не вышло по сценарию «хотели, как лучше, а получилось как всегда», есть смысл учесть ожидания и мнение экспертного сообщества (от лат. *expertus* – опытный), т.е. совокупности специалистов, потенциально способных транслировать вовне квалифицированные суждения по тем или иным вопросам. В отношении менеджеров, например, необходимо совместно с экспертами из деловых, интеллектуальных и административных кругов определить с адекватной моделью субъекта профессиональной деятельности в управлении и в соответствии с этой идеальной моделью произвести отбор содержания образования для этой группы.

Так что же говорят эксперты в области управления, какая компетенция кажется им определяющей в деятельности менеджера? Точек зрения здесь как всегда множество, но мы бы хотели акцентировать мнение тех, кто подчеркивает информационный характер труда менеджеров, на наш взгляд, недооцениваемый: «По сравнению с другими видами труда управленческий труд имеет ряд особенностей, выражающихся в характере самого труда, его предмете, результатах и применяемых средствах... Именно менеджеры делают человеческие, финансовые, физические ресурсы максимально продуктивными, и в этой связи у них особый предмет труда – информация, получая и обрабатывая которую, они принимают решения, необходимые для изменения состояния управляемого объекта. Поэтому в качестве орудий труда менеджеров выступают, прежде всего, средства работы с информацией»[2, с.42].

Действительно, информация – наряду с организацией – изначально является одним из двух основных факторов, формирующих феномен управления, причем при определяющей роли именно информации. По мнению В.Д.Граждан, информационные функции управления, подразделяющиеся на познавательную-аналитическую, оценочно-экспертную, прогнозно-целевую, морально-правовую и документационно-архивную, тесно связаны с

технологическими и организационными, в том числе с функцией коммуникативно-компьютерного обеспечения, реализующейся опять же с помощью информационных технологий[1]. В наше время эти технологии стали просто незаменимым инструментом для эффективного управления, превратившись из вспомогательного и второстепенного фактора в решающий фактор конкурентоспособности и воспроизводства.

Ясно, что в создавшихся условиях необыкновенно возрастает роль информационной составляющей в содержании образования менеджеров [3]. И, казалось бы, педагоги, составляющие для управленцев в вузах, не обходят эту составляющую стороной: вводятся соответствующие курсы (например, «Информационные технологии управления» в блоке специальных дисциплин, в некоторых вузах – «Коммуникационный менеджмент»), создаются под них учебные и учебно-методические пособия. Но проблема в том, что эти специально-менеджерские информационные курсы не опираются на надежный фундамент медиа- и информационной грамотности (МИГ), с которым учащиеся должны приходить из средней школы и который надо поддерживать в вузе.

И здесь не обойтись только компьютерной грамотностью, к которой в Узбекистане склонны сводить всю подготовку подрастающего поколения в названной области. Курс информатики в школе и его продолжение в вузе – это необходимый, но не достаточный инструмент формирования информационной компетентности молодежи. Каждый молодой человек в Узбекистане нуждается в качественном медиа образовании, причем именно в системе формального образования.

ВЫВОДЫ

Конечно, основная нагрузка по формированию МИГ должна приходиться на школу. Но если сегодня в средней школе этот компонент как обязательный игнорируется, значит «первую скрипку» должны начать играть вузы. Решать проблему можно двумя способами: вводить медиаобразование или для студентов всех специальностей или для отдельных направлений, учитывая при этом их содержательную специфику. Ясно, что второй путь более реален, и по нему надо идти в том числе при подготовке менеджеров.

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