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Dr. K. VICTOR BABU

M.A.,M.A.,M.Phil.,Ph.D.,PDF, (D.Lit)

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Editorial……

It is heartening to note that our journal is able to sustain the enthusiasm and covering various facets of knowledge. It is our hope that IJMER would continue to live up to its fullest expectations savoring the thoughts of the intellectuals associated with its functioning .Our progress is steady and we are in a position now to receive evaluate and publish as many articles as we can. The response from the academicians and scholars is excellent and we are proud to acknowledge this stimulating aspect.

The writers with their rich research experience in the academic fields are contributing excellently and making IJMER march to progress as envisaged. The interdisciplinary topics bring in a spirit of immense participation enabling us to understand the relations in the growing competitive world. Our endeavour will be to keep IJMER as a perfect tool in making all its participants to work to unity with their thoughts and action.

The Editor thanks one and all for their input towards the growth of the **Knowledge Based Society**. All of us together are making continues efforts to make our predictions true in making IJMER, a Journal of Repute

Dr.K.Victor Babu
Editor-in-Chief

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SEAWEED EXTRACT – A SOURCE FOR COSMETIC FORMULATION AND ANTIBACTERIAL ACTIVITY

Manju M[1], Ramachandran A.M.[2] Saranya S[3] and Harsha Karunakaran[4]
[1]PG and Research Department of Microbiology ,Dr. N G P Arts and Science College, Dr. N. G. P. Kalapatti Road, Coimbatore, Tamil Nadu, India
[2] Assistant professor, Dept. of Microbiology, DRNGPASC, CBE-48
[3] PG and Research Department of Microbiology ,Dr. N G P Arts and Science College, Dr. N. G. P. Kalapatti Road, Coimbatore, Tamil Nadu, India
[4] PG and Research Department of Microbiology ,Dr. N G P Arts and Science College, Dr. N. G. P. Kalapatti Road, Coimbatore- Tamil Nadu, India

ABSTRACT

The cosmetic property of seaweed extracts and investigated the antibacterial activity of ***Caulerpa scalpelliformis*** which is a green macro alga. The seaweeds were dried and powdered for further use. It was stored in the air tight container to extract the pigments. The extraction was applied for the antibacterial activity by well diffusion method. The antibacterial activity was assessed by measuring the zone of inhibition in triplicates and compared with the standard antibiotic Ciprofloxain. The maximum activity against various human bacterial pathogens of the ethanol extract. Column chromatography was performed to separate the fraction of pigments. It is followed to TLC analysis to reveal the compounds. The fractions showed the antibacterial activity against ***E.coli, Pseudomonas, Klebsiella, Salmonella*** **and** ***Staphylococcus sp.,*** and the zone of inhibition were observed as 4, 9.4, 18, 18, and 14 (mm) respectively. TLC shows the retention factor of 0.514. Extracted pigments were attempted to stain microbes such as bacteria, fungi, and also tried to color hair and nail as a cosmetic product to replaced synthetic chemicals which is being used currently.

Key words:*Caulerpa scalpelliformis*, Microbes, Pigment, Seaweed.

INTRODUCTION;

The market value of cosmetic products has reached to several million dollars. But the majority of cosmetics were constituted by chemical ingredients. It has been used by normal people to boost their appearance and tonality of their skin and hair. There are few natural cosmetics available naturally such as turmeric applied on the skin to prevent microbial infection and protect skin nature. Seaweeds are also called macro algae. Metabolites of macroalgae have been used in pharmaceutical industries - alginates and carrageenan as soldifing agents, carotene, chlorophyll as pigments and glycerol as a solvent***(V.S. Krishnamurthy Chennubhotal, K.S. Rao and N. Kaliaperumal ,2015).*** Numerous studies have revealed a wide range of beneficial effects of seaweed extract applications on plants such as early seed germination and establishment, improved crop performance and yield ***(C Kalaivanan et al.,2012).*** Not only plants, but also the algae and cyanobacterial pigments are the most responsible compounds by which the energy of sunlight is captured for photosynthesis **(*P. Kumar et a.,2010)***. Basically, life on earth

depends on pigments ***(Britton, 1995)*** hence the plants use the chlorophyll to prepare their own food and oxygen can be carried in the body with the help of haemoglobin.The natural pigments are obtained from traditional sources such as plants, and marine algae but the use of plant pigments has many drawbacks such as non-availability throughout the year and pigment stability and solubility. Large scale plant use may lead to loss of valuable species. ***(Downham and Collins,2004***). Marine green algae or Chlorophyta are naturally abundant and record high biodiversity in tropical coral reefs and lagoons ***(Fong P, Paul VJ 2011).*** *Caulerpa scalpelliformis*is bright yellowish-green to olive-green seaweed located in intertidal zone. Recently, Kim, stated that some cosmetic formulations, in fact, are intended to prevent disease or to affect human skin's function or structure, and can be considered as drugs. These may include sunscreens or antidandruff shampoos, but also other cosmetics containing active ingredients that promote physiological changes in skin cells, making them appear healthier and younger **(*Filipa B. Pimentel et al 2017).***

Bacterial infection causes high rate of mortality in human population. The revolutionized therapy of infectious diseases by the use of antimicrobial drugs has certain limitations due to changing patterns of resistance in patterns and the side effects they produced. Hence the Pharmaceutical industries are giving importance to the compounds derived from traditional sources (soil and plants) and less traditional sources like marine organisms. The first synthetic color, **mauvine,** was developed by Sir William Henry Pern in 1856 and this development started a revolution in the history of synthetic colorantsfor use in foods, pharmaceuticals, and cosmetic preparations were later found to promote cancer. Hence this drawback paves the way to the highest demand in production of natural pigments.(***Narsing Rao et al; 2017).***Permanent hair colours usually contain ammonia which enables the product to Lighten the underlying hair colour (natural or artificial) and these are the most effective And versatile of all current hair colouring products. Eventhough the chronic application of hair dye, which contains ammonia may result some adverse effects such as allergy, Hair draft, hair falling and also facilitate microbial invasion. The intensive analysis of Microbial pigments may resolve the problem existing in the hair colorant application. These bioactive compounds not only fulfil the cosmetic needy because of their bioactive potential as they bring health benefit to the consumers ***(Sanghaetal.2013).*** There are many microbes possessing specific ability to produce pigments to compete their counterpart and their antimicrobial activities have been documented by many researchers. But the application of these pigments in cosmetic industry is limited one. In the present study, analytical and extraction of pigments from seaweeds for hair Colorant is considered.

METHODS AND MATERIALS;

2.1 SAMPLE COLLECTION.

The Green Macroalgae ***Caulerpa scallpelliformis*** was collected from Mandapam, Ramnad District, the South East Coast of Tamilnadu, India. Seaweeds were immediately washed with seawater to remove the foreign particles, sand and epiphytes. The washed samples were brought to the laboratory in the air tight container. In the

laboratory the samples were washed thoroughly in running tap water to remove salt and were a shade dried. ***(T.Vimala 2015)***

2.2 PREPARATION OF EXTRACT

The shade dried algal samples were powered for further use. The powdered samples are stored in air tight container. The stored samples were weighted in volume by volume and then mortar and pestle (grain) the sample by using various solvent such as Ethanol, Acetone and DMSO. Then filterate the extract using the whatman no1 filter paper. The filtered extractions are stored in separate container. ***(C Kalaivanan et al.,2012).***

2.3 COLLECTION OF BACTERIAL STRAIN

The bacterial strains are collected from KMCH , COIMBATORE, TAMILNADU. which includes both gram positive and gram negative organisms such as ***Pseudomonas sp, Klebsiella sp, Salmonella sp, Staphylococcus sp, Escherichia coli,*** were used to investigate the antibacterial activity.

2.4 PREPARATION OF INOCULUMS

Aloopfullof bacterial cultures are inoculated into 50 ml of freshly prepared broth media in 100 ml conical flask for the preparations of bacterial strains then incubated at 37° c for 24 hours which is ready to investigate the antibacterial activity of macroalgae ***Caulerpa scalpelliformis. (Rosaline et al ,2012)***

2.5 ANTIBACTERIAL ACTIVITY

The Antibacterial activity of the algal extract was evaluated by the well cutting method.A sterile cotton swab was dipped into the bacterial suspension and then was evenly streaked over the entire surface of a sterile Muller Hinton agar plate to obtain uniform inoculums. The well was cutted using sterile cutter then pour the various solvent extraction into the well, marked earlier as respectively along with control of pure solvent (Ethanol, Acetone and DMSO) and water as negative control to measure the zone of inhibition after the incubation of 24 hours at 37° c. Triplicates were performed for every organisms and measured by standard mean value.(***Satyalakshmi,2017)***

2.6 SEPARATION OF BIO ACTIVE COMPOUNDS
COLUMN CHROMATOGRAPHY.

The analytical study were performed to separate the bio active compounds present in the extraction. Column chromatography was carried out using the crude extract of C*aulerpascalpelliformis*that produced significantly higher antimicrobial activity over the other solvent extract towards majority of human pathogenic organisms. The crude acetone extract (3ml) of *Caulerpascalpelliformis*was absorbed on to silica gel (30 gms and 60 -120 mesh size) in a column and chromatographed**.** The column was eluted with gradients of solvent ethanol. Then the column was finally washed with ethanol. 5 different fractions of green algae *Caulerpa scalpelliformis,* each of 2 ml fractions are collected using different container. These fractions were stored for further analysis.

The fractions also used to investigate the antibacterial activity to detect the presence of bioactive compounds.

THIN LAYER CHROMATOGRAPHY

The maximum growth inhibited around a well of fraction collected from column chromatography were subjected to analytical TLC. Analytical TLC was carried out using silica gel with 0.2mm thickness on sterile glass slides. Plate markings were made with soft pencil. The glass capillaries were used to load the fraction in the TLC plates. The sample was loaded at a distance of 1 cm and the TLC plates were developed in the chromatographic chamber with mobile face (ethanol). The developed plates were dried under normal air and the spots were visualised under UV dark chamber of 365 nm wavelength or on the other hand ninhydrin solution were sprayed on the plate to detect the Retention factor. Retention factor (R) value of the isolated compounds were calculated using the formula. ***(Sasidharan et al.,2011)***

$$\textbf{Retention Factor (R.F)} = \frac{Distance\ travelled\ by\ Solute}{Distance\ travelled\ by\ Solvent}$$

The retention factor were used to detect the type of bioactive compound present in the extraction of seaweed. GC-MS have to perform later for future study to reveal the bioactive compounds of extraction.

SCREENING OF BACTERIAL STRAIN

The crude extract were concentrated using the hot air oven at $80^{o\ c}$ for 1 hour. Then the concentrated extract was used as staining agent for screening the bacterial strain under the microscope. Which is used to study the morphology and the appearance of bacteria as well as possible and also the fungi that shows the spores along with hypae similar to that of LPCB method (Lacto Phenol Cotton Blue)

2.7 FORMULATION OF COSMETIC PRODUCTS

The concentrated crude extracts was mixed with glycerol for used as nailpolish and sprayed to the hair as hairspray, eyelashes as coloring agent. Which are related to applications study. In order to establish the harmfree cosmetic products from the naturally abundant seaweeds.

RESULTS

Thesample was collected from Mandapam, Ramnad District, the South East Coast of Tamilnadu, India. The macroalgal species were confimed by the investigation center located *at* Ramnad District. (Table;1 shows the location of collected sample)

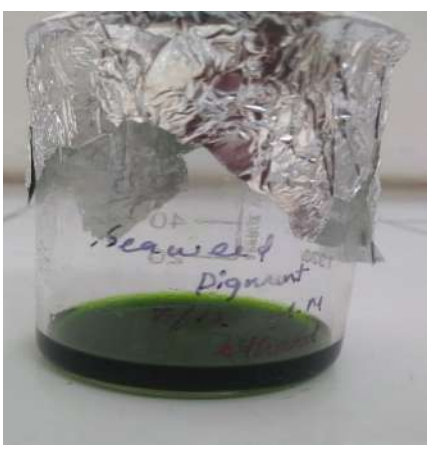
Table:1 Location Of Collected Sample

SI NO	NAME OF THE SAMPLE	GPS LOCATION	GEOGRAPHICAL LOCATION
01	***Caulerpa scalpelliformis***	Mandapam	9.28^{o}N 79.12^{o}E

The collected sample was brought to the investigation center located at mandapam. The identifition were made with the help of morphology of the species. Hence they confirmed that ***Caulerpa scalpelliformis***based on colour, thally,stolends .

(FIGURE 1 - The dried form of species was identified as *Caulerpa scalpelliformis*)

The crude extract was obtained from the *caulerpascalpelliformis* by using various solvents such as Ethanol, Acetone, DMSO. The extracted solution was stored in air tight container. Which was used for investigate the antibacterial activity furtherly.



(FIGURE – 2 The Extraction Of *Caulerpa scalpelliformis* Were Stored In The Sterile Tightly Packed Container)

Theantibacterial activity were investigated for various extraction of ***caulerpascalpelliformis***which shows the zone of inhibition along with the antibiotic disc as positive control (ciprofloxin) and water as negative control. Basically Acetone , Ethanol , DMSO are used as the disinfectant to minimize the bacterial growth so to know the effect of actual extract against some pathogenic bacteria such as ***Pseudomonas sp, Klebsiella sp, Salmonella sp, Staphylococcus sp, Escherichia coli,*** the pure solvents were used to compare the actual extraction of ***Caulerpa scalpelliformis.*** Triplicates were performed for every organisms and measured by standard mean value.

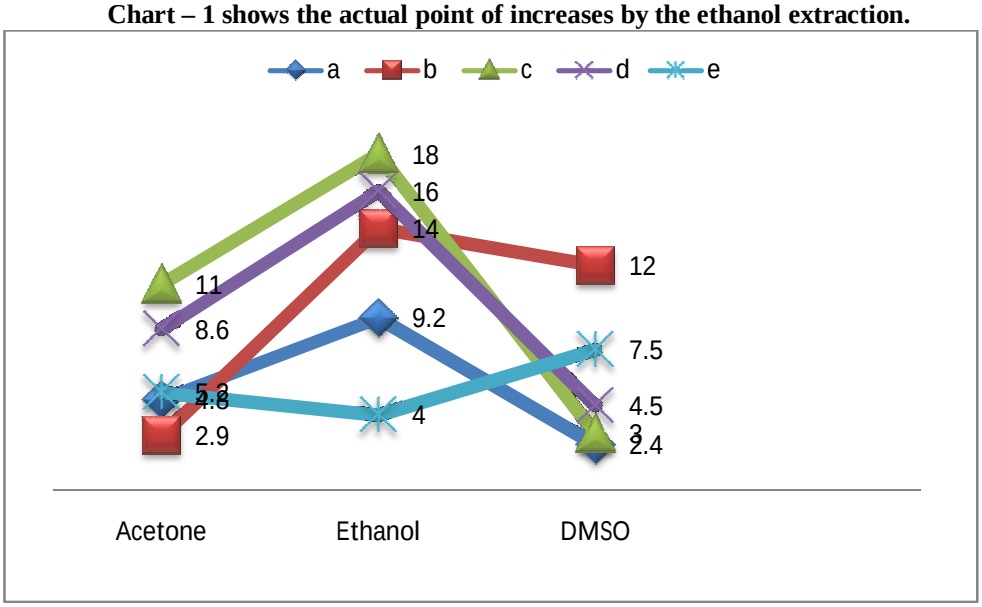
TABLE – 2 The zone of inhibition of was measured in mm and expressed in mean value.

EXTRACTION ACTIVITY (ZONE OF INHIBITION IN mm)

S.NO	NAME OF THE ORGANISMS	ACETONE	ETHANOL	DMSO
01	*Pseudomonas sp*	4.8	9.2	2.4
02	*klebsiella sp*	2.9	14	12
03	*salmonella sp*	11	18	3
04	*staphylococcus sp*	8.6	18	3.5
05	*Escherichia coli*	5.2	4	7.5

The measurement shows that the ethanol extraction gives the highest inhibition in all the five pathogenic bacteria. Values are expressed as Mean ± SEM, n=3.

Chart – 1 shows the actual point of increases by the ethanol extraction.



a -- *Pseudomonassp* , b -- *Staphylococcus sp*, c – *Klebsellasp*, d – *Salmonella sp*, e -- *Escherichia coli*

The chart represents that the ethanol extraction of seaweed inhibits highly the pathogenic bacteria compared to other solvent extraction . Hence these ethanol extraction were stored for further performance.

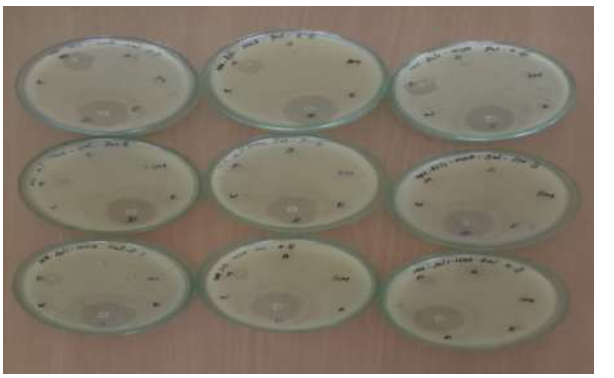


FIGURE – 3 Each Solvent Triplicates Of Muller Hington Agar Plate Were Shown The Zone Of Inhibition Against The *Salmonella sp*

As like *Salmonella sp* other four pathogenic bacteria were performed triplicates.

SEPARATION OF BIOACTIVE COMPOUNDS

COLUMN CHOROMATOGRAPHY

The column choromatography were performed by using the ethanol extract of ***caulerpascalpelliformis*** that makes the separations based on the fraction of colour. From these extraction 5 different types of fractions are eluted by the acetone solvent.

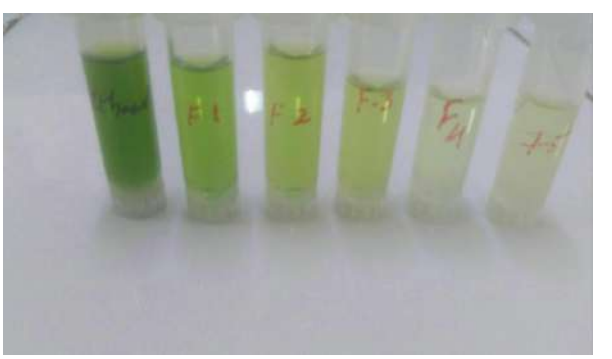


FIGURE – 4 the fractions eluted by the column chromatography.

Followed the column chromatography, fractions are also used to study the antibacterial activity for all the five pathogenic bacteria in triplicates. TLC were performed to get the RF value to identify the bioactive compounds. Furtherly GC-MS analytical study have to be perfrom to separate the bioactive compound present in the crude extract of ***Caulerpa scalpelliformis***.

FIGURE – 5 Shows the fraction 4 inhibits the growth of *Salmonella sp*

On TLC, the fraction 4 shows the Retention Factor (RF) value of ethanolic extract is **0.514.**

APPLICATION STUDY

SCREENING OF BACTERIAL STRAIN

The bacterial strains are stained using the extraction instead of gram staining. In gram staining , the crystal violet were used as primary staining followed that grams iodine to get the morphology appearance. The extraction of *Caulerpa scalpelliformis*also shows the morphology the microscope as staining agent. Includes the fungal staining , usually the LPCB method were used as staining agent to get the morphology instead of that the extraction of *Caulerpa scalpelliformis* also shows the better attempts.

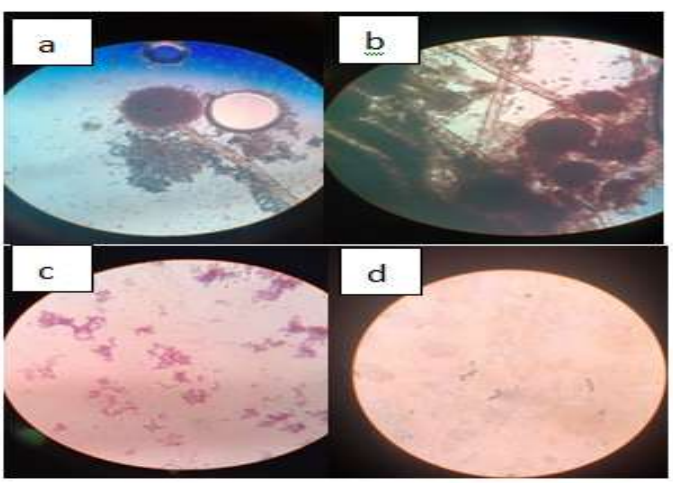


Figure **"a"** represents the LPCB mount of ***Aspergillus sp*** and **"b"** represents the extract stains the ***Aspergillus sp,*** **"c"**representsthe Gram Staining and **"d"** represents the extract stains the gram positive bacteria

FORMULATIONS OF COSMETIC SOURCE

The extraction was concentrated at 80°c and stored it in the container . Then acetone (solvent) were used for enhancing the colouring agent which introduced in formulating the cosmetic product , the favours such as flower, lavender, etc., are added . later it was applied to skin, hair and nail. The allergic study were done furtherly for manufacturing the natural cosmetic product. The seaweed extraction paves the way for better attempt in cosmetieucals.

DISCUSSION

The antibacterial activity of the selected marine green alga ***Caulerpa scalpelliformis*** was studied by using different solvents such as acetone, ethanol, and DMSO by well diffusion method against (both gram positive and gram negative bacteria) human pathogens. We have used different solvents from a low polar to highly polar to extract the all the possible active components from the *C. scalpelliformis.*
Further, the best solvent extract possessing high anti-bacterial activity will be subject to chromatographic techniques such as Column chromatography, TLC to identify the number and composition of components and the structure of the active components identified using 1H , and mass spectroscopy technique on future study (***Pandithurai M et al., 2015***) . The bacterial cultures of *Escherichia coli, Staphylococcus aureus, Klebsiella pneumonia, Pseudomonas aeruginosa* and *Salmonella typhi* were used for the present study. The antibacterial activity was assessed by measuring the zone of inhibition and compared with the standard antibiotic Ciprofloxain. The maximum activity against various human bacterial pathogens of the ethanol extract.
The main objective of this work was formulating the cosmetic product based on the color such as hairspray, nailspolish, lipstick from the natural marine source and to evaluate and compare the ability of different solvent extract of marine green alga *C. scalpelliformis*from the South East Coast of Tamil Nadu to produce bioactive compounds of potential therapeutic interest. The production of antibacterial activities was considered to be an indicator of the capability of the seaweeds to synthesize bioactive compounds. Because, marine natural products contain a wide range of novel bioactive compounds or antibiotics with distinctive complex structures because they developed unique metabolic and physiological capability.
Synthetic dyes have caused considerable environmental and health problems. In contrast, natural macroalgal pigments are eco-friendly and used in the textile industry, as food colorants, antioxidants, bio-indicators, and antimicrobial and anticancer agents. Though extensive research has been done to bring naturally abundant pigments from the laboratory to market, still their output cannot fulfill market demand if synthetic dyes withdrawn. Efforts in finding new natural sources for pigment production and decrease in production cost through optimization, strain improvement and genetic engineering have to be carried out to eradicate toxic synthetic dyes. Hence this study tried to give the Macroalgae-derived ingredients have been used in cosmetic formulations due to their technological properties. However, it is well established that the interest of the cosmetic

industry in macroalgae goes further than just using it as a source of excipients and technological additives. Macroalgae are a source of added-value compounds, with scientific evidence showing their benefits for human health and wellbeing. This can be a competitive advantage for this industry, namely in terms of finding and using novel molecules and agents that apparently have biological effects on skin, such as antiaging, antioxidant, moisturizing, collagen-boosting, photo-protective, whitening and melanin-inhibiting, anti-inflammatory, anti-cellulite and slimming, and antiviral and antibacterial activities.

This study has summarized some of the possible applications of macroalgae as active ingredients in the cosmetic field, highlighting the main compounds responsible for their bioactivity on skin (**Filipa B. Pimentel et al., 2017).**Various application study were attempted by using the macroalgae , includes the staining agent. The bacterial and fungal species are identified using the extractions of macroalgae shows the better results instead of gram staining and LPCB Method.

CONCLUSION

The overall aim of sample preparation is to prepare the crude seaweed extract for accurate detection, identification, and quantification of the target analytes by using chromatographic and spectrometric methods. This includes efficient extraction, removal of seaweed matrices, concentration, or dilution of the extracts. It is also important to strive to ensure that the extraction method is both inexpensive and environmentally friendly (**N.N. Misra et al., 2015).** The demand for natural products that inhibit/control or prevent melanogenesis and, consequently, skin pigmentation, is growing all over the world , especially for melanin hyperpigmentation dermatological diseases, as well as for cosmetic formulations for depigmentation . According to previous reports , other application studies also done by**S. Vinoth et al ., 2014** they were concluded the species of chlorophyta***C.scalpelliformis*** enhanced the development, maturation and germination of embryos in vitro and HPLC analysis revealed the presence of **6-benzylaminopurine and indole-3-butyric acid** plant growth regulators in the extracts. Seaweeds are a natural biostimulant providing an alternative to chemical fertilizers thereby increasing the production of the crop in an environment friendly manner.

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KASHMIR AND THE ABROGATION OF ARTICLE 370: AN INDIA'S PERSPECTIVE

Shally Rani
Research Scholar, Political Science, Desh Bhagat University, Amloh, Punjab, India

Abstract:

Article 370 was added to India's constitution in 1949. Article 370of the constitution of India relating to the state of J&K is now over 60 years old. The constitution came into force on 26 Jan 1950 and with it, unique provision. Thispaper throw light on consequences of deletion of article 370 about J&K by the existing government of Bhartiya Janta party (Aug5,2019) But some Kashmir Muslim think that this act brought more negative impact on their life. It has built emotional and psychological barriers between the people of Kashmir and the rest of India. Furthermore, revoking article 370 will allow the centre to declare emergency in the state except in case of a war as per the constitution order 2019, in place of this special status, all the provisions of the constitution will henceforth be applicable.

Keywords: Revoking article 370, Constitution, Jammu and Kashmir.

Introduction:

Like many other political Compromise, the history of article 370 of the constitution of India is rich and complex. It is a very controversial topic as the region is an international hot spot and the state is the only Muslim majority state in India. The article 370, creating special status for J&Khas been attributed primarily to Nehru's poor negotiation skills. Blame for its perpetuation has been placed on the congress and its politics of appeasement. But in 6Augusut2019 the J&K redistribute bill was introduced in Rajyasabha. Under this bill J&K will cease to be a state.Instead, the state will be converted to two union territories, that of Ladakh and J&K. The Prime Minister Narendra modi in a highly anticipated address to the nation after the abrogation of Special status to J&K under article 370. They explainthe rationality behind this decision and elaborated on the consequences of this move.

Objectives: -

1. To understand basic concept of article 370 in India.
2. Analyze the process to implement Fedral laws in the country.
3. To highlight the role of Bhartya Janta party and their political benefit.
4. To analyses the pros and cons after abrogation of article 370.
5. To highlight the impact of this decision on the people of Kashmir.

Research Methodology

To write this paper, the data has mainly concentrated on textual approach, books written by eminent scholars and articles, papers written on various National and International Journals has been considered to do the framework of this paper. Thus, secondary data has been used to write this paper.

Review of Literature:

There are number of puranic work on "Kashmir and the abrogation of article 370: An India's perspective" some of the important books and articles are under as under:

1. A.G Noorani[1]: This book is a collection of documents on article 370 of the constitution of India. It provides new insights on the negotiations preceding its enactment, the significance of the article, and the constitutional evolution of the state and its relationship with the union of India from 1946 to 2010. The author also discusses the Supreme CourtJudgment on this article and constitutional arrangement.

2. Justice A.S Anand (2016)[2]:The book deals with the circumstances which led to the creation of the state of Jammu and Kashmir, the effects of its creation and the influenced of other factors on the development of its constitution. The author also explains the accession of the state of J&K to India which has been a matter of some political controversy has been dealt with in detail and also talk about the J&K different constitution position from that of other Indian states and some other important factors have been discussed.

3. Iqbal Chand Malhotra[3]:This book provides answers to these gripping questions and join the dots in presenting the metric of a consistent and compelling argument regarding the future of the state of J&K.Delving deeper, the book also reveals amazing insights into the government of India's policy towards the state, right from 1889. The authors also explain the History of J&K from the time of its political and geographic consolidation under Maharaja Gulab Singh to present day India.

4.Sumit Dutt Majumder[4]: This book seeks to clarify the issues surrounding article 370 and 35A of India constitution. This book gave important information about constitutional political and legal matter about the article 370, the author also highlights the role of B.J.P government reconstituted the erstwhile state of J&K into two union territories. The author also talks about the factors which led the state to have its own constitution. These are some questions which have beenanswered in this book.

5.D.D Basu[5]:This book covers the ambit and scope of article 370 of the constitution of India has been examined. It also contains the list of important central acts which have been applied to the state from time to time .The author also highlight the Reorganization

[1] A.G Noorani; A constitutional history of J&K, Oxford University Press, 2014.
[2] Justice A.S Anand; The Constitution of J&K, it's development and comments, Universal Law Publishing an imprint of Lexisnexis, 2016.
[3] Iqbal Chand Malhotra; Kashmir and untold story: Declassified, Bloomsbury India, 2019.
[4] Sumit Dutt Majumder; Article 37o explained for the common man, Niyogi Books Pvt. Ltd.
[5]D.D Basu; Introduction to the constitution of India, S.C Sarkar, 1971.

of J&K Law which took place on 31 Oct 2019. According to this law division of Jammu and Kashmir region into two association zone, the territories of J&K, J&K and the territory of Ladakh union.

6. Ayjaz wani[6]: The author writes an article on 'life in Kashmir after article 370'.The author explains the lives of the people after Abrogation article 370. He also highlights the living standard of the people of Kashmir how they slowly and steadily limping towards normalcy the abrogation of autonomy without the consent of the Kashmiri's has raised the threat perception among the people of the valley.After 5 Aug people are feeling a heightened sense of fear and suspicion regarding their identity and culture issue such as religion, customer and language.

Historical Background:

British rule in India ends after partition. On that time Hari Singh Signs the instrument of Accession of J&K following an attack by Pakistani army,it occurred the conflict between India and Pakistan.[7]Mountbatten tried to make Hari Singh understand to join either India or Pakistan. [8]But Hari Singh decided to keep Kashmir independent nation up to 15 Aug 1947.[9] But when Pakistan attack on Kashmir Oct 1947. On that time there has no option for Hari Singh then he signed instrument of Accession and decided to join dominion of India and lost its sovereignty[10]Mr. Jinnah (Muslim Leader) lost his control.[11]In 1949 Sheikh Abdullah and three other colleaguesjoined the India constituent Assembly and negotiated the special status of J&K, leading to the adoption of article 370. The controversial provision was drafted by Sheikh Abdullah.

Legal and constitutional status of Kashmir prior to the voiding of article 370:

Article 370 of the constitution of India is described as "Temporary provision" that grants the state of J&K a special autonomous status within the India union. Under article 370(1)b the union parliament can only make laws for the state. "In consultation with the government of state". On certain matters that were specified in the instrument of Accession Namely, defense, foreign affairs, communication.[12]Other matters in the legislative subject lists can applyto J&K only with "Concurrences of the government of the state" Through a president order. The most important part of article 370 for purposes of recent development is article 370(3), which gives the president of India to power to amend or repeal article 370 itself through a public notification.

[6] Ayjaz Wani; ORF Special Report-Life in Kashmir after article 370.
[7] Press note drafted by Maharaja and sent to Patel, 23-oct-1947, Dass(ed), Supranote 10 Vol.1 P-64.
[8] Patel to Kak, 3-July-1947 Durga Dass(ed) Sardar Patel's correspondence:1945-50(Ahmedabad): Najivan Publishing house, 2015 reprint Vol. 1 at P-32.
[9] Nehru to Patel, 27-Sept-1947 Dass(ed) Supra notes Vol.1 at P-45,46.
[10] Dass(ed), Supra notes 10, Vol.1 at P-77.
[11] Dass(ed), Supra notes 10, Vol.1 at P-73.
[12] In clause 3 of instrument, the maharaja said: I accept the matters specified in the schedules here to as the matters with respect to which the dominion legislature may make law for this state, In clause 8, the maharaja continue to assert sovereignty over his state.

Article 35A:

Article 35 A added to India constitution in 1954. This article allowing the state of J&K to define permanent residents of the state and certain "Special rights and privileges" attached to such residency, including the power to restrict settlement to the state and acquire immovable property.

The B.J.P government closed the door for Political engagement in Kashmir by curtailing Article 370:

For the B.J.P, article 370 abrogation was no sudden idea or an underprepared plan. The BJP effort to penetrate J&K began in 2015 with the strategic sharing of power with PDP.The BJP being in power at the centre and in Kashmir, could go for the Jugular of the terrorists and broke their back, as the data show. The year 2019 recorded the maximum number of stone throwing incidents in Jammu and Kashmir.
The Modi government has Changed the perception of the world about not just Kashmir or Pakistan terrorismalso. On 5th-Aug-2019 Shri Amit Shah introduced the J&K (Reorganization bill2019)[13] making J&K a union territory with a legislative assembly along with union territory status to Ladakh without a legislative assembly.[14]

Further, the J&K reservation, 2Amendment bill (2019) to amend the J&K reservation Act 2004 was also introduced. This bill seeks to extend the 10% quota to economically weaker section of the Society in J&K in jobs and educational institution both the bill was passed by Rajya Sabha unanimously.

Against the Removal of Article 35A and 370:

Some scholars have urged that converting a state into a union territory is impermissible.[15]All Kashmir valley-based parties, including the National conference (CNC),People democratic party (PDP), Jammu and Kashmir people's movement (J&KPM) and others are opposed to any tinkering with article 35 A and 370 that give a special status to J&K. The congress party also want these articles to be protected. J&K chief minister Mehbooba Mufti also protect the article 35 A mufti asked her party workers to get ready for a big fight for the protection of article 35 A.

Important PROS of Abrogation of article 370:

1. India constitution applies on J&K.
2. Kashmir girls can marry any Indian.

[13] Constitution application of J&K order 2019.
[14] Under the 2018proclamation the president has suspended the requirement of referring a bill to the legislature under the provision the article 3 of the constitution.
[15] For intense, in the pages of Indian express, Pratap Bhanu Mehta has said that this would imply that "(w) e a simply a union territory that happen to be a state at the discretion of the center." Mehta supra note 2.

3. Indian can buy a property or land in J&K.
4. Better education and job opportunity are available for Kashmiripeople.
5. Panchayats will have the same right as in other state.
6. RTI is applicable in J&K.
7. Reservation of SC-ST is eligible.
8. Growth in tourism is also possible.
9. Stop drug smuggling inside India.
10. During the election, government will elect wisely. Transparency will possible.
11. Dual citizenship is cancelled, single citizenship applicable

Cons of Abrogation of article 370:

1. Single citizenship which is not accepted by many locals of Kashmir.
2. India's relation with Pakistan becomes worst which already very sensitive topic for every Indian.
3.The stability and development in J&K under doubtful circumstances.
4. There is a possibility of more spread of terrorism in India.
5. Indians have fear about their security.

Pakistan's Reaction after Article 370 Abrogation:

Pakistan's reaction has been one of outrage. Its Foreign ministry was Quick to say that India's move violates un-resolutions. On 7thAug Pakistan expelled India's high commissioner and recalls its own top diplomatic from New Delhi. It also announced the suspension of bilateral trade. Pakistan launched a diplomatic campaign to attract international support for its position on Kashmir.

Some Future results regarding the abrogation of 370:

1. The people of J&K have lost their Faith.
2. Dangerous to India democracy.
3. Internationalization of Kashmir's question.
4. The Risk of world war.
5. Fatal to the federal system.

Conclusion:
Article 370 of the constitution of India has always been the subject of dialogue. There has always been a urge to cancel the section 370 of J&K from the Hinduist parties &BJP,the old Jana Sangh and Rastriya Swayansevak Sangh, the Hindu party and the organization. But in the election of 2014 and 2019, due to the clear Majority of BJP its abolished article 370 and section 35 (A) of J&K is order to gain political advantage in the upcoming elections. So, in the end we can say that, if the present government fulfil the demands of the Kashmir people by giving them surety to help them each and every aspect of life.

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HOW TO USE DIET AND SUPPLEMENTS TO MAINTAIN IMMUNITY DURING COVID-19 PANDAMIC

Ramya.R[1] and Santhi. S[2]
[1.] Teaching Assistant, Department of Home Science, Alagappa University, Karaikudi
[2.] Teaching Assistant, Department of History, Alagappa University, Karaikudi

Abstract

Covid – 19 or Corona virus was declared as a global pandemic by the World Health Organization. And while the countries are grappling with imminent dangers that this virus poses to humanity, there are few key measures that individuals can take to fight this pandemic. While it is crucial to mention hygiene standards like washing your hands frequently, especially if you have travelled by public transport. Using an alcohol sanitizer, in case you are travelling to disinfect your hands, wearing a mask (cover your nose and mouth) and avoiding touching your hand or mouth. There are also certain methods to improve your immunity which is paramount at this juncture. The COVID-19 pandemic has focused attention on the role of the immune system, with "experts" and articles urging people to buy supplements or eat particular foods to "turbocharge" their immune systems. The truth is more subtle. As highlighted recently by the World Health Organization, a healthy lifestyle makes all bodily functions work better, including immunity. Having a healthy diet, including lots of fruits and vegetables, is a key component of a healthy lifestyle and plays a vital role in supporting a well-functioning and effective immune system to help protect against infection and other diseases. Individuals in certain pre-existing illnesses like diabetes, hypertension, cardio vascular disease, and respiratory issues are at a higher risk of having Covid 19 complications, it also aggravates with age as the general immunity reduces as you get older. In the younger generation with no underlying illnesses, Covid 19 can result in a minor infection, provided you have a robust immunity and do not engage in activities like smoking or vaping to combat the onslaught of the virus. Here is a list of measures you can undertake to improve your immunity.

Key Words: Immunity Nutrition, Vitamins, Balanced diet and Supplementary Foods.

Introduction

The coronavirus disease-19 (COVID-19) pandemic threatens to overwhelm the healthcare resources of the country, but also poses a personal hazard to healthcare workers, including physicians. Physicians are at an elevated risk of acquiring the disease through exposure to patients who may be symptomatic with the disease or its asymptomatic carriers across the spectrum of clinical specialties. Notably, the physician workforce is not only at risk of losing time spent in clinical care due to these exposures, but at a personal risk from severe disease that requires hospitalization and is associated with high morbidity and mortality. Notably, physicians 60 years of age and older are at a particularly elevated risk, with 80% of deaths in China concentrated in this age group,"

wrote researchers, led by Rohan Khera, MD, MS, cardiologist, University of Texas Southwestern Medical Center, Dallas, TX.(April 8,2020).

Corona virus started as an acute viral respiratory illness in Wuhan state of china at the fag end of 2019. It spread as a pandemic to all the countries infecting Lakhs of people killing many thousands globally. A lot of drugs have been tried in the setting of life-threatening respiratory disease and still the ideal combination remains elusive. In this deficient scientific evidence to control the pandemic, nutrition and diet should be supplemented to these patients (Adhikari et al., 2020). The dietary management should be considered in terms of improving immunity and utilizing the anti-viral properties of few nutrients. Eating a low-fat, plant-based vegetarian diet may boost the immune system. Vegetarians have been shown in a few studies to have more effective white blood cells compared to nonvegetarians, because of a higher intake of vitamins and lower intake of fat (Davison et al., 2016).

Considering the current pandemic of COVID-19 where no effective preventive and curative medicine is available, a healthy immune system is one of the most important weapons. There are several vitamins and trace elements which are essential for the normal functioning of the immune system. Furthermore, supplementations of these have shown positive impact on enhancing immunity in viral infections. Vitamin A and D supplementation has increased the humeral immunity of pediatric patients following influenza vaccination. High dose zinc supplementation has shown immune enhancement in patients with torquetenovirus (TTV). Similarly, selenium supplementation has shown a positive response after an influenza vaccination challenge. In addition to micronutrients, several herbals and probiotics also have shown effectiveness for treatment and prevention of viral infections. Moreover, several nutraceuticals and probiotics have also shown a supportive role in enhancing immune responses.

Materials and Methods

How does the immune system work?

The immune system is one of the most complex bodily systems, made up of a network of cells, molecules, tissues and organs all working together to protect the body. The immune system has a vital role: It protects your body from harmful substances, germs and cell changes that could make you ill. It is made up of various organs, cells and proteins.This complexity means that it cannot be modified acutely by a specific nutritional intervention. Rather, adhering to a healthy diet provides ongoing support to the immune system and may even delay the process of immunosenescence (the natural gradual deterioration of the immune system as we get older).

An antigen is any substance that can spark an immune response: In many cases, an antigen is a bacterium, fungus, virus, toxin, or foreign body. But it can also be one of our own cells that is faulty or dead. Initially, a range of cell types works together to recognize the antigen as an invader.

Results and Discussion

Can nutrition boost your immune system?

Good nutrition is always important, but during this pandemic, it’s even more important because a well-balanced diet of nutritious foods helps support a strong

immune system.In response to the COVID-19 pandemic the British Dietetic Association recently published a statement: "Simply put, you cannot 'boost' your immune system through diet, and no specific food or supplement will prevent you catching COVID-19/Coronavirus. Good hygiene practice remains the best means of avoiding infection."
There are many nutrients that are involved with the normal functioning of the immune system, which is why maintaining a healthy balanced diet is the best way to support immune function. Important nutrients for effective immune function are:

- Copper
- Folate
- Iron
- Selenium
- Zinc
- Vitamins A, B6, B12, C and D

No one food is recommended over another and eating a variety of foods will help to maintain a healthy balanced diet. The immuno-protection of many of these nutrients is based on their antioxidant capacity (oxidation is a chemical reaction that can damage cells) which is lost if consumed in excess.

Foods that increase immunity and with possible anti-viral properties

Citrus fruits

Plants in the genus produce citrus fruits, including important crops such as oranges, lemons, pomelos, and limes. Citrus fruit is one of the nature's best and easily available sources of vitamin C, a key nutrient in supporting our immune system. Citrus fruits are known to have other benefits like antioxidant, anti-tumour, cardio protective and neuroprotective effects. They have additional fibre content also. But what makes them significant is their immune boosting potential. Citrus as juice especially with sugar may not give all the benefits of the ingredients. The most important chemicals are the flavonoids (Lv et al., 2015).

Research has shown that many of these [nutrients] can protect us against chronic conditions including cancer and heart disease and may help support brain health and reduce the risk of kidney stones," says VandanaSheth, RD, a spokesperson for the Academy of Nutrition and Dietetics. Here are 10 research-backed health benefits of citrus fruits, from boosting your brain health to preventing wrinkles.

Other fruits

Even though almost every fruit is good for health and human immunity, it has been proved that apple, sitaphal and papaya have got antiviral effects against specific viruses (Suchitra and Parthasarathy, 2015; Konowalchuk and Speirs, 1978). Even-though extrapolation to corona virus is unscientific, the antiviral and immune boosting properties of the above said fruits is established.

Vegetables

Broccoli and other cruciferous vegetables were proven to help boost immunity. Researchers claim that sulforaphane, a chemical found in this vegetable, switches on the antioxidant genes and enzymes in specific immune cells.This effect combats free radicals in our body and prevent the disease getting worsened. Broccoli has also been found to have anti- viral properties against influenza viruses (Antonenko et al., 2013).

Nuts and seeds

Many nuts and seeds including almonds, peanuts and ground nuts have high vitamin E levels.Vitamin E, a lipid-soluble antioxidant commonly present in the membrane of all cells including immune cells. This is supposed to prevent stress induced damage to cells. Eating almondshave been recently used to treatcommonϑlu symptoms. It has been suggested that almonds exhibit some antiviral actions. The peanut skin has also significant antiviral activities according to recent research (Makau et al., 2018).

Turmeric and Garlic

The bright yellow spice, Turmeric, contains a compound called curcumin, which boosts the immune function. Garlic has powerful anti-inflammatory and antiviral properties which enhances body immunity.Apart from maintaining a healthy lifestyle and taking supplements, the Indian health ministry is also suggesting few organic and natural ways to practise as preventive measures to fight COVID-19. The Ministry of AYUSH has recommended the following self-care guidelines as preventive measures and to boost immunity with special reference to respiratory health.

- Drink warm water throughout the day.
- Practice Meditation, Yogasana, and Pranayama.
- Increase the intake of Turmeric, Cumin, Coriander and garlic.
- Drink herbal tea or decoction of Holy basil, Cinnamon, Black pepper, Dry Ginger and Raisin.
- Avoid sugar and replace it with jaggery if needed.
- Apply Ghee (clarified butter), Sesame oil, or Coconut oil in both the nostrils to keep the nostrils clean.
- Inhale steam with Mint leaves and Caraway seeds.
- While the battle against the Covid-19 pandemic is fought by our health care workers, we can do our bit by limiting our exposure to the virus by staying indoors, social distancing, eating healthy, hydrating and following basic hygiene protocol.

Elderberry

Elderberries are full of nutrients including minerals like phosphorus, potassium, iron, copper and vitamins, such as vitamin A, B, and C, proteins and dietary fibre. Elderberries have antibacterial and antiviral qualities which help fight cold and influenza.

Supplements and immunity boosting foods

While all the above-mentioned tips will definitely help, the need of the hour is a quick boost to your immunity system to keep it fighting fit. If you’re concerned whether you are getting the right amount of nutrients from your diet, consult with your doctor about a supplementation regimen to boost your immune system. Here are a few common supplements and super foods that can help.

Discussion

Vitamin A

Vitamin A is a fat-soluble vitamin, which is crucial for maintaining vision, promoting growth and development, and protecting epithelium and mucosal integrity in the body. It is known to play an important role in enhancing immune function, and having a regulatory function in both cellular and humoral immune responses. Vitamin A supplementation to infants has shown the potential to improve antibody response after some vaccines, including measles and anti-rabies vaccination (2.1 times) . In addition an enhanced immune response to influenza virus vaccination has also been observed in children (2–8 years) who were vitamin A and D-insufficient at baseline, after supplementation with vitamin A and D.

Vitamin C

This particular vitamin is a crucial participant in the army of immunity. It helps prevent the common cold. It acts as a powerful antioxidant and protects against damage induced by oxidative stress. For severe infections, including sepsis and acute respiratory distress syndrome (ARDS), high dose intravenous vitamin C treatment has been shown to significantly improve symptoms in patients.

Vitamin D

Vitamin D, another fat-soluble vitamin, that plays a vital role in modulating both innate and adaptive immune responses. Epidemiological data has linked vitamin D deficiency to increased susceptibility to acute viral respiratory infections. Recent reviews evaluating possible mechanisms suggest that vitamin D plays an important modulatory role of the innate immune responses to respiratory viral infections, such as Influenza A and B, parainfluenza 1 and 2, and Respiratory syncytial virus (RSV).Vitamin D supplements have a mild protective effect against respiratory tract infections. Most people are deficient in Vitamin-D, so it's best to consult with a doctor about taking a Vitamin D supplement to boost immune response.

Multi-nutrients supplements

Selected vitamins and trace elements support immune function by strengthening epithelial barriers and cellular and humoral immune responses. Supplementations with various combinations of trace-elements and vitamins have shown beneficial effects on the antiviral immune response

Trace elements

Zinc

Zinc is a vital component to WBC (white blood corpuscles) which fights infections. Zinc deficiency often makes one more susceptible to flu, cold and other viral infections. It is advisable to take a zinc supplement, especially for older people.Zinc is an essential trace element which plays an important role in growth, development, and the maintenance of immune function. Zinc deficiency has been associated with an increased susceptibility to infectious diseases, including viral infections. Studies have shown that the zinc status of an individual is a critical factor that can influence immunity against viral infections, with zinc-deficient populations being at increased risk

of acquiring infections, such as HIV or HCV. Few RCTs have evaluated the effect of zinc supplementation on the immune response.

Selenium

Selenium is another trace element that has a wide range of pleiotropic effects, ranging from antioxidant effects to anti-inflammatory properties. Low selenium status has been associated with an increased risk of mortality, poor immune function, and cognitive decline, while a higher selenium concentration or selenium supplementation has shown antiviral effects. This has been demonstrated in a study by Broome et al., who evaluated whether an increase in selenium intake (50–100 μg/day) improves immune function in adults with marginal selenium concentration. Selenium supplementation increased plasma selenium concentrations, and lymphocyte phospholipid and cytosolic glutathione peroxidase activities, the cellular immune response was increased (increased IFN-γ and other cytokines), with an earlier peak T-cell proliferation, and an increase in T-helper cells.

Magnesium

Magnesium plays an important role in controlling immune function by exerting a marked influence on immunoglobulin synthesis, immune cell adherence, antibody-dependent cytolysis, Immunoglobulin M (IgM) lymphocyte binding, macrophage response to lymphokines, and T helper-B cell adherence. Although some *in-vitro* and *in-vivo* studies suggests that magnesium is likely to play a role in the immune response against viral infections.A functioning immune system is crucial in the fight against COVID-19. To maintain it, the body needs sufficient vitamins and other nutrients. But that is exactly what many people lack.

Probiotic supplements

Probiotics are defined as live micro-organisms that confer a health benefit to the host, including on the gastrointestinal tract, when administered in adequate amounts. They also stimulate immune response by increasing the antibody production. The results of a meta-analysis by Kang et al. implied that probiotics have a modest effect in common cold reduction.

Nothing works without vitamins

"The measures being taken are all important. But it is also important that we pay attention to our nutrient status so that our immune system can function at all," said Gombart. This is especially important in stressful times like these, when we tend to comfort ourselves with junk food, he says. After all, getting enough nutrients is not really a focus of our interest at the moment.Yet vitamins C and D and other micronutrients such as zinc, iron and selenium are much more than just "nice to have." In the worst case, a nutrient deficiency can open the door to the viruses because the body is unable to defend itself against the invaders. For people who belong to a risk group, the danger of a severe course of disease is then particularly high.Unlike macronutrients such as fat, carbohydrates and protein, the micronutrients do not provide the body with energy, but they are nevertheless essential for the basic functions of an organism — not only for cell metabolism, but also for the defense system.

Improve Your Diet

The food you eat plays a key aspect in determining your overall health and immunity. Eat low carb diets, as this will help control high blood sugar and pressure. A low carb diet will help slow down diabetes and focus on a protein-rich diet to keep you in good shape. And regularly consume vegetables and fruits rich in Beta carotene, Ascorbic acid & other essential vitamins. Certain foods like mushrooms, tomato, bell pepper and green vegetables like broccoli, spinach are also good options to build resilience in the body against infections.You can also eat supplements rich in omega 3 & 6 fatty acids for your daily dose, if stepping out to buy groceries is not an option during social distancing. Some natural immunity supplements include ginger, gooseberries (amla) and turmeric. Some of these superfoods are common ingredients in Indian dishes and snacks. There are several herbs that help in boosting immunity like garlic, Basel leaves and Black cumin. Certain seeds and nuts like sunflower seeds, Flax seed, pumpkin seeds and melon seeds are excellent sources of protein and vitamin E.Probiotics like Yoghurt, Yakult and fermented food are also excellent sources to rejuvenate the composition of gut bacteria, which is important for nutrient absorption by the body. These are good options for the older generation too.

Conclusion

Planning and taking a proper diet are necessary in tackling diseases. Nutritional supplement is necessary to effectively counter viral illness and their ill effects. Hence a diet with a combined immune boosting and antiviral effects are important.For a viral disease like COVID-19, where no pharmacological strategies for prevention or treatment are presently available and where the exact time of the ending of the alarming situation is unknown, nutritional strategies for enhancing immunity is something to be explored. Therefore, achieving recommended amounts of calories and micronutrient will be a challenge and elective micronutrient supplementations may be beneficial especially for vulnerable populations such as the elderly.

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LIQUIDATION OVER ARBITRATION? – ANALYSING SURANA POWER v. BHEL

Dr. Binoy J. Kattadiyil
ICSI IIP, IPA of IBBI

Introduction

In a battle between choosing liquidation or arbitration, most parties, including the judicial authorities, would prefer to choose the latter for it allows settlement of monetary disputes outside the court of law. Insolvency and Bankruptcy Code 2016 dots the settlement mechanism so much so that the first course of action for insolvency disputes is a resolution process. Albeit the CIRP is different from other outside the court settlement mechanism since it involves access to the Adjudicating Authorities under IBC. Till date, 469 CIRPs have been appealed, reviewed, settled, or withdrawn; and 221 have reached settlement via Resolution Plans.[1]

The case of Surana Power v. BHEL lays open the limitations of a binding arbitral award to an insolvency process resulting in liquidation. In its most liberal sense, arbitration is a substitution, by consent of parties, for the tribunals provided by the ordinary process of law.[2]When we probe this definition, we find that "consent of parties" implies all parties to the dispute. In the present case, the Respondent- BHEL, a secured financial creditor was the sole accessory to an arbitration with the Corporate Debtor, among the secured financial creditors to the Corporate Debtor. While that in itself is not problematic, given certain conditions are satisfied[3], the other circumstances in the case are significant in understanding where the provisions of IBC draw lines to allow for fairness among stakeholders of the Corporate Debtor.

Brief Facts &NCLATs Judgement

Insolvency process against the Corporate Debtor (CD), Surana Power Limited was initiated on February 19, 2018.[4] Upon the lack of an approved resolution within the Committee of Creditors (CoC), liquidation was ordered soon after.[5]Previously on January 24th, 2018 the Respondent, BHEL had received an ex-parte arbitral award against the CD . The award granted BHEL lienover the secured assets of the

[1] The Quarterly Newsletter of Insolvency and Bankruptcy Board of India. Jan-March 2020, Vol.14.
[2] Arbitration Law and Practices in India: Recent Developments and Impact of Globalization, Anil Kumar. Thesis. Aligarh Muslim University. 2013. Shodhganga.
[3] Section 52 of the Insolvency and Bankruptcy Code 2016
[4] Order of February 19, 2018, In the matter of Surana Power Limited CP-646-(IB)-CB-2017
[5] Order of January 28, 2019, In the matter of Surana Power Limited CP-646-IB-2017

CD(equipment and goods lying at the site) and a charge over its entirely or partially erected facilities at the site was created.[6]

The Liquidator in the present case was unable to liquidate the assets of the CD without all the Secured Creditors relinquishing their securities.[7] The Respondent, BHEL was the only Secured Creditor to not provide any confirmation on their relinquishment once the liquidation proceedings were commenced until August 23rd, 2019 where they informed the Liquidator about their choice to realise their security interest under Section 52 of the IBC. The remaining Secured Creditors held 73.76% of the value of the secured assets of the CD, while BHEL held 26.24%. Despite the majority of the Secured Creditors' relinquishment, the Liquidator was unable to proceed with any further sale of assets.
Mr. Dwarkanath, the Liquidator moved to the NCLT to seek permission to sell the assets of the CD with the majority backing of the Secured Creditors. The NCLT held BHELs lien preferential over the charge of the other Secured Creditors, and the application was rejected, and thus an appeal was filed at the NCLAT. It was claimed that the Adjudicating authority had failed to appreciate the important fact that the secured creditors along with the Respondent had a charge over the Secured Assets of the CD, on which BHEL had been granted lien from the Arbitral Award, via a Hypothecated Deed dated 24th September 2010.[8]

The Appellate Authority's judgement ruled in favour of the Appellant Liquidator essentially holds that a secured creditor cannot claim superiority over other secured creditors in the same band, and that everyone must receive their fair share by following the waterfall mechanism of liquidation under Section 53 of the IBC. The NCLAT referred to the SARFAESI Act of 2002 which deals with the enforcement of security interest, which states that any steps vis-à-vis realization of assets by the Secured Creditors requires confirmation from the Creditors having at least 60% of the value of total debt of the CD.[9] It was held that stalling the liquidation process would be prejudicial to the rest of the shareholders since BHEL only possessed 26.24% share value of the Secured Assets. Thus, the relinquishment of the security interests of the other secured creditors sharing 73.76% shall be binding on the Respondent.[10]

Relationship between Arbitrations &IBC

There are a multitude of scenarios which involve the clash between insolvency or liquidation proceedings under the IBC and the arbitral proceedings. Mainly, orders have

[6]Mr. Srikanth Dwarkanath, Liquidator of Surana Power Limited Vs. Bharat Heavy Electricals Limited CA(AT)(Ins)No. 1510 of 2019
[7] Under Regulation 32 of the IBBI (Liquidation Process) Regulations, 2016
[8]Mr. Srikanth Dwarkanath, Liquidator of Surana Power Limited Vs. Bharat Heavy Electricals Limited CA(AT)(Ins)No. 1510 of 2019
[9] Section 13(9) of the SARFAESI Act 2002
[10]Mr. Srikanth Dwarkanath, Liquidator of Surana Power Limited Vs. Bharat Heavy Electricals Limited CA(AT)(Ins)No. 1510 of 2019

been passed in cases where the concerning issues deal with arbitral proceedings and awards after a CIRP is initiated and moratorium under Section 14 of the IBC- which bars the initiation and continuation of any judicial proceedings until the CIRP or Liquidation is finalised, is imposed. The intricacies of imposing a moratorium on any and all proceedings against the CD are significant to the whole insolvency and liquidation process. The table below enlists certain major scenarios.

Possible Scenarios	Legal Position	Cases
Arbitral claims made by the CD	The arbitration claim by the CD **will continue or can be instituted** after the CIRP is initiated. Since, Section 14(1)(a) only explicitly bars the institution of suits or continuation of pending suits or proceedings **against the CD.**	
Arbitral claims made against the CD	The arbitration proceedings **will not continue or can be instituted** after the CIRP. Since, Section 14(1)(a) explicitly bars the institution/ continuance ofarbitration proceedings against the CD.	*Alchemist Asset Reconstruction Company Ltd. v Hotel Gaudavan Pvt. Ltd.*[11]
Arbitral claims and counter claims made by the CD and the Opposite Parties	Pre-award stage of the Arbitral proceedings **may not fall** under the purview of Section 14(1)(a).	*Jharkhand BijliVitran Nigam Limited v IVRCL Ltd. (Corporate Debtor) &Anr.*[12]
Arbitral proceeding which had commenced before the CIRP under IBC	**IBC provisions**[13] **override the Arbitration Act 1996**. After initiation of CIRP, all parties pending arbitration along with the Creditors of the CD can file claims before the Resolution Professional.	*K.S. Oils Ltd. v The State Trade Corporation of India Ltd. &Ors.*[14]
Arbitral award given in favour of CD	Section 14 of the IBC **does not bar** the recovery of dues[15] owed to the CD.	
Arbitral award given against the CD	Section 14 of the IBC **bars** recovery of dues[16] against the CD.	

[11] AIR 2017 SC 5124
[12] Company Appeal (AT)(Insolvency) No. 285
[13] Section 238 of the Insolvency and Bankruptcy Code
[14] NCLAT, Company Appeal (AT) (Insolvency) No. 284 of 2017
[15] Section 30 of the Arbitration and Conciliation Act 1996
[16] Ibid

The case of Surana Power unique in the aspect of the relationship shared between arbitral proceedings and the IBC. In the present case, the Arbitral Award was given in prior of the initiation of the CIRP, and thus the liquidation process. The Respondent, in defence, had raised the case of *JM Financial Asset Reconstruction Company Ltd. Vs. Finquest Financial Solutions Pvt. Ltd. and Others*,[17] where the same Appellate Authority in circumstances similar to the present case, held that a secured creditor had a right to realise their assets even if the same assets are claimed by the other secured creditors under various sub-sections of Section 52 of the IBC, only if the Liquidator is satisfied that they had the first charge over the secured assets compared to the other secured creditors. The last part is the dividing factor which contributed to the NCLAT's judgement against BHEL's claim, since the Liquidator had already contemplated that BHEL did not have exclusive charges over the secured assets awarded via the arbitral award in 2018 due to the presence of the Deed of Hypothecation of 2010.

Priorities under the Waterfall Mechanism

Furthermore, thewaterfall mechanism gives priority to secured financial creditors over unsecured financial creditors. The mechanism says that if a company is being liquidated, these secured financial creditors must be first paid the full extent of their admitted claim before any sale proceedings are distributed to any other unsecured creditor.

Under Section 53 of the IBC, which deals with waterfall mechanism, top priority is given to costs related to the insolvency and liquidation process and dues of workmen of the CD. Followed by the debts of the Secured Creditors who relinquish their security interest, then the other employee dues and Unsecured Creditors, trickling down to the debts of the Secured Creditors who wish to realise their security interest and government dues (refer to Chart 1). The idea is that the most expensive debt should be paid first, followed by other debts and dues in priority

[17]Company Appeal (AT)(Ins)No. 593 of 2019

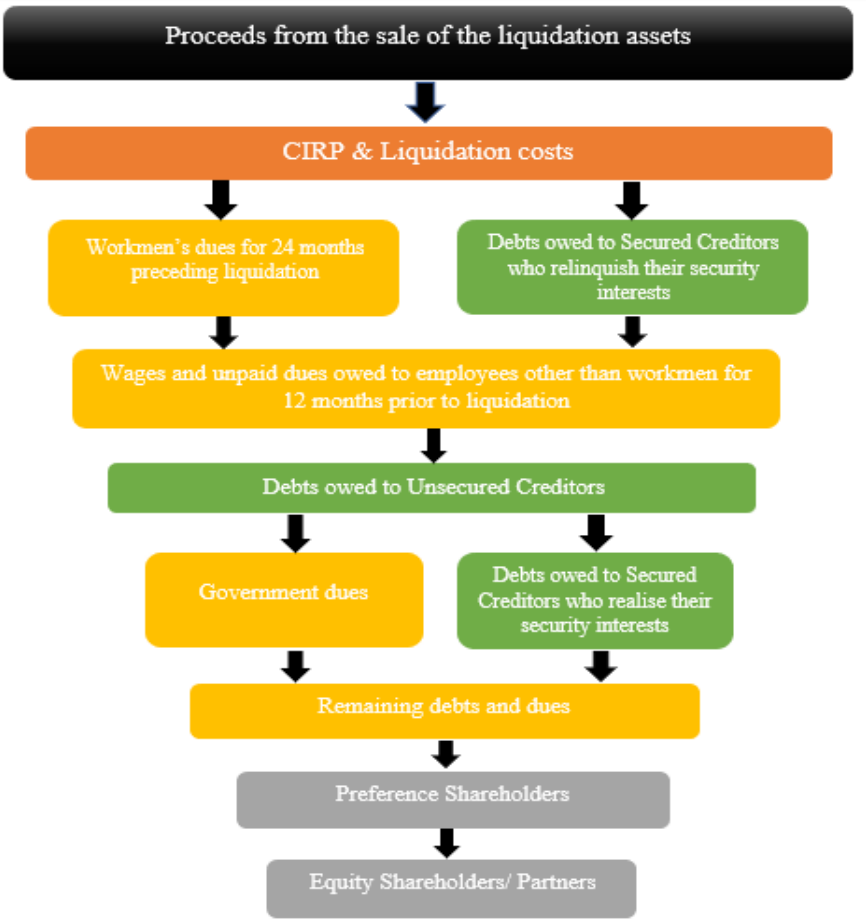

Chart 1

Conclusion

The Code gives arbitration its due when required but not to the detriment of the shareholders in an insolvency or liquidation. Various circumstances come into scrutiny to determine the efficacy of the arbitral awards and their proceedings. In the present case, if we assume that BHEL did not receive the Arbitral Award for the entire Secured assets of the CD, but a little portion equivalent to its share in the liquidation value with other 10 Secured Creditors, and BHEL wished to realise its security interest. Following the waterfall mechanism, the 10 Secured Creditors would receive their debts before BHEL, and the Appellate Authority would have upheld the decision of the NCLT. But in the present circumstances, BHEL being granted lien over the entire secured assets of the CD, while possessing only 26.24% of the asset value of the CD undermines fair distribution of debts and dues to the other participants of the waterfall mechanism,

especially the 10 Secured Creditors, especially when the Hypothecated Deed comes into play. Thus, the arbitral award was not upheld.

Discussing the importance of waterfall mechanism and same treatment to similar category of financial creditors is relevant to understanding the distribution of proceeds of the insolvency or liquidation process. As of end of 2019, the government is considering a new formula for this distribution of assets, debts and dues to reduce delays due to litigation concerning such doubt clearance as in the case at hand, ensuring the objective of the IBC is well-maintained.[18]

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STUDY ON KNOWLEDGE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) AMONG B.ED. TEACHER TRAINEES

Mrs. Kushbu Diwan
PH.D Scholar, Department of Education
Shri Rawatpura Sarkar University, Raipur (C.G.)

Abstract

The Present Quick-paced world is getting progressively portrayed by technology driven communication. This has changed the world into a large global connected community with regularly expanding effort of information and communication technology (ITC). Technology assumes an inexorably significant in people's lives, and it is visualized that technological knowledge will soon become a useful necessity for individual's work social, and even close to home lives the purpose of the study was to research the ICT knowledge among B.Ed. Teacher trainees' The investigator has used the survey method to collect the data. The investigator has chosen 80 students studying in B.Ed. course at Pt. Harishankar Shukla Memorial College in Raipur (Chhattisgarh). Finding of the investigation uncovered that, no significant difference between male and female B.Ed. Students Teachers on ITC knowledge. There was no huge contrast among Hindi and English B.Ed. Students Teachers on ICT Knowledge. Hence forth, B.Ed. student learners had moderate degree of ICT Knowledge and the urban B.Ed. teacher trainees mean scores was higher than the rural B.Ed. Teacher trainees.

Keywords: Information and Communication Technology (ICT), ICT Knowledge and B.Ed. Teacher Trainees.

Introduction

Information and communication technology (ICT) has pervaded in all social status uses influencing the technology fields such as launching satellites, managing business across the globe and also enabling social networking. The convergence of Personal Computer ,communication and substance advances, being know as ICT, Step by step it stood out of the scholarly world, business, government and networks to utilize it for creative beneficial Suggestions is getting less complex to use gadgets, for example laptop, palm top, I-pad etc.

21st Century is portrayed with the rise of information based society where in ICT assumes a critical job. The National Curriculum Framework 2005(NCF 2005) has additionally featured the significance of ICT in College instruction. With this background, significant change in outlook is basic in training portrayed by giving directions, community oriented learning and multidisciplinary critical thinking also, advancing basic reasoning abilities.

Government of India has reported 2010-2020 as the decade of advancement. Thinking and Critical Thinking abilities are laid at School level. It is alluring that reasonable ICT apparatuses and strategies ought to be coordinated into study all guidelines directly from essential stag to empower understudies build up their imperative aptitudes. The greater part of the devices, procedures and instructional exercises are accessible in open space and available on web.

Statement of Problem:

ICT has significant effect on the changing situation of education. It is the basic need of student teacher. Student teachers make Utilize of the ICT to learn and play. Through the ICT, The student can discover information assets in any discipline. They can likewise share their thoughts in any part of the world through, World Wide Web, E-mail, Power point Presentation (PPT) and release board framework. It prompts improve thinking and problem-solving.ICT is a superb instrument for student's teacher to make their showing extremely powerful. Email has changed the way, along these lines understudies work and convey inside couple of moments of endeavors a message to one or numerous individual can be formed, send and got. Chatting has become a very popular type of discussion. Chat groups direct the students live communication with others by composing words on PC. ICT encourages the students to develop their interest in studying through simulation and multimedia techniques. So the investigator attempts to concentrate on "Study on knowledge of information & communication Technology (ICT) among B.Ed. Teacher Trainees.

Variables

ICT Knowledge as an independent variable and B.Ed. Teacher Trainee as a dependent variable.

Objective

- To explore the ICT Knowledge among the B.Ed. Teachers Trainee.
- To find out the significant difference between male and female B.Ed. teachers Trainees on ICT Knowledge.
- To find out the significant difference between Hindi and English medium of B.Ed. teachers Trainees on ICT Knowledge.
- To explore out the significant difference between Urban and Rural B.Ed. teachers Trainees on ICT Knowledge.

Hypothesis

H1 -There is no significant difference between in ICT Knowledge among male and female B.Ed. Teacher Trainees.

H2 -There is no significant difference between in ICT Knowledge among Hindi and English Medium B.Ed. Teacher Trainees.

H3 -There is no significant difference between in ICT Knowledge among Rural and Urban B.Ed. Teacher Trainees.

Methodology

A descriptive survey research method was used for the study using questionnaires to collect data from the Teacher trainees students.

Sample

The Sample Consists 80 student teachers selected form Pt. Harishankar Shukla Memorial College in Kachna, District Raipur (Chhattisgarh) by using Random sampling Technique.

Gender
- Male - 27 (B.Ed. Teacher Trainees)
- Female- 53 (B.Ed. Teacher Trainees)

Medium
- Hindi - 50 (B.Ed. Teacher Trainees)
- English -30 (B.Ed. Teacher Trainees)

Locality
- Rural - 33 (B.Ed. Teacher Trainees)
- Urban - 47 (B.Ed. Teacher Trainees)

Tools

For this study Q test was developed to assess the ICT Knowledge among B.Ed. Student the assessment tool of ICT Knowledge among B.Ed. students consisted of the information and communication Technology.

Data Analysis and Interpretation:-

Hypothesis- 1: There is no significant difference in ICT knowledge among male and female B.Ed. Teacher Trainees.

Variable Gender	Number	Mean	SD	df	t-Value	Level of Significance
Male	27	17.14	1.1	78	0.30	Not Significance
Female	53	17.83	1.60			

The above table 1 revels that the calculated't' value 0.30 is less than the table value at 0.05 level of significance. There is no significant difference between male and female B.Ed. student teachers. Hence, above null hypothesis was accepted.

Hypothesis- 2: There is no significant difference in ICT knowledge among Hindi and English Medium B.Ed. Teachers trainees.

Table 2

Variable Medium	Number	Mean	SD	df	t-Value	Level of Significance
Hindi	50	17.76	1.55	78	1.29	**Not Significant**
English	30	10.04	7.02			

Not Significant at 0.05 Level.

The above table 2 revels that the calculated 't' Value 1.29 is less than the table value of 0.05 level of significance. There was no significant difference between Hindi and English medium B.Ed. teacher Trainees hence above null hypothesis was accepted.

Hypothesis- 3: There is no significant difference in ICT knowledge among Rural and urban Groups B.Ed. Teachers trainees.

Variable Locality	Number	Mean	SD	df	t-Value	Level of Significant
Rural	33	17.27	7.40	78	2.51	**Significant**
Urban	47	17.08	14.82			

Significant

The above table 3 revels that the calculated t-Value 2.51 is more than the table value at 0.05 level of significance. There was significant difference between Rural and Urban B.Ed. teacher Trainees hence above null hypothesis was rejected.

Major Finding of the Study

- There was no significant difference between male and female B.Ed. Teacher Trainees on ICT Knowledge.
- There was no significant difference between Hindi and English Medium B.Ed. Teacher Trainees on ICT Knowledge.
- There was significant difference between Rural and Urban B.Ed. Teacher Trainees on ICT Knowledge.
- Urban teacher trainees ICT knowledge was higher than the rural B.Ed. Teacher Trainees.

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Educational Implication

- Teacher trainee should have knowledge of ICT use and integration in order to bridge the digital divide in today's technological age.
- The utilization and coordination of ICT ought to be actualized over the educational plan so as to guarantee the full integration and utilization of ICT in teacher education and training.

- Impact ought to be made by government to post and give educators talented in ICT to every College to affect ICT aptitudes to the students.
- Awareness program should be conducted to the parents about the importance of ICT skill so that they also motivate and help their children to get ICT knowledge.

Conclusion

Present time technology is a part of almost every aspect of life and learning, Technology enables work and communication for business and pleasure often with a strong emphasis on hardware, software, portable devices, and "app" However it is not enough for teachers to be merely ICT knowledge. 21st century teachers and teacher trainees need a broader knowledge that guides that use of these tools and applications. Many research studies found teachers have moderated level of ICT Knowledge .in the present study investigator has found significant difference between rural and urban B. Ed. teacher trainees on ICT knowledge. Urban B.Ed. teacher trainees ICT Knowledge was higher than the rural teacher Trainees. Finding shows that urban teacher trainees students are more familiar with ICT than Rural teacher Trainees students.

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SATISFACTION AND ATTITUDE TOWARDS ONLINE LEARNING AMONG STUDENTS IN SELECTED NURSING COLLEGES

[1]Muthu Srinivasan Jayalakshmi, [2]K.Edvina Princy and [3]Asha A.V.
[1]Principal, Army Institute of Nursing, Guwahati, Assam
[2]Tutor, Army Institute of Nursing, Guwahati, Assam
[3]Tutor, St. Theresa College of Nursing, Rajaji Nagar, Bangalore

ABSTRACT

Background:
In educational settings, creativity is one of the most important things at any point. Online learning may be one of the best solutions in place of classroom teaching during covid-19.
Method:
A descriptive study was conducted at two nursing colleges, Guwahati, Assam and Bangalore, Karnataka. Data was collected using email, using astructured questionnaire consisting of socio-demographic information, to assess satisfaction and attitude towards online learning. Analysis of the data was done using inferential and statistical methods.
Results:
Among 270 students 87.03% were undergraduates and 12.97 % werepostgraduates. The result showed that the students' attitude and satisfaction regarding online learning is weak negative correlation. **(p value < .05).**
Conclusion:
This present study revealed majority of students' attitude was favourable towards online learning where only 9.26 % students' attitude was unfavourable. However students are satisfied with online learning as they are unable to attend classroom session due to covid-19 pandemic lockdown.

Keywords: Satisfaction, Attitude, Online learning

INTRODUCTION

Education is one of the driving forces for economic and social development of the country. It is necessary to find ways to make quality education, accessible and affordable to all, using the latest technology available(1).In this present situation , it becomes more critical because continuing the traditional method of class room teaching and learning pose a major challenge to every educational institution. Online learning or web based learning is in fact the only solution to tackle this problem. India as a developing country has many constraints to provide quality online education to satisfy the beneficiaries. Major reasons for this are institutional and technical infrastructure, culture, computer literacy and access.(1) The success of educational institutes depends on their student satisfaction and the quality of the services they offer to them(2)

Technology enhanced interactive learning (also known as e-learning) allows learning to be individualized, enhances collaborative learning, and realigns the educator's role from disseminator to facilitator of the learning process(4).E-learning can be viewed as a compliment not as a substitute for the traditional interactive class-room learning. Learner's attitude and satisfaction are two important factors which determine the success of online learning. Bhatta R, Shrestha R et al conducted a survey to assess the Factors Influencing Medical Students' Experiences and Satisfaction regarding online learning. The study has revealed that the level of satisfaction was highly correlated with performance expectations and learning climate, while computer self-efficacy and interaction had the weakest positive relationship.(5) As online learning continues to evolve, it is important for the educators and educational institutions to assess the satisfaction and attitude of the students in order to improve the quality of web based learning and to equip the educators for the effective implementation of the online learning. The present study aimed to assess the satisfaction and attitude towards online learning among students in selected nursing colleges.

1. OBJECTIVES

- To assess the satisfaction regarding online learning among nursing students
- To identify the attitude towards online learning among nursing students.
- To find out the association between satisfactions of nursing students regarding online learning with selected demographic variables.
- To find out the association between attitudes of nursing students regarding online learning with selected demographic variables.
- To find out correlation of satisfaction and attitude towards online learning among nursing students

2. RESEARCH METHODOLOGY

2.1. Study Design.

A descriptivestudy was conducted among 270 nursing students who attended online courses at colleges in Guwahati and Bangalore. All students who study in nursing colleges were included in the study.

2.2 Tools

Two tools were used in this study by the researcher for collection of patient data and achieving the aim of the study as follows;

Section A: Demographic variables

Section B: Structured questionnaire on level of satisfaction.

Section C: Structured questionnaire on level of satisfaction.

2.3 Data Collection:

The data was collected after obtainingprior permission from the concerned authority. Verbal consent was obtained from all participants prior to taking part in the study and data were collected by self-administered questionnaire through mail. The study was conducted in selected nursing colleges in Guwahati & Bangalore.

2.4 Data Analysis:

The collected data was analyzed in terms of descriptive and inferential statistics. Chi-square test was used to find out the association between level of satisfaction and attitude score of students with selected demographic variables. Pearson correlation test was used to find out correlation between satisfaction attitudes of nursing students regarding online learning.

3. RESULTS

3.1. Participants' Characteristics.

A total of 270 students in selected colleges were included in the study. The socio demographic variables of the study participants presented in the below given Table1.

Table 1: Participants' Characteristics. (n=270)

S.NO	VARIABLES	FREQUENCY	PERCENTAGE
1.	**Age**		
	≤ 18 Years	07	02.59 %
	≥ 18 Years	263	97.41%
2.	**Courses**		
	1st Year B.Sc Nursing	70	25.93%
	2nd Year B.Sc Nursing	70	25.93%
	3rd Year B.Sc Nursing	50	18.51%
	4th Year B.Sc Nursing	45	16.67%
	1st YearM.Sc Nursing	20	07.47%
	2nd Year M.Sc Nursing	15	05.55%
3.	**Previous exposure to online course**		
	Yes	130	48.15%
	No	140	51.85%
4.	**Resources for online learning**		
	Teacher's Guidance	260	96.30 %
	Friends	05	01.85 %
	Social Media	05	01.85 %
5.	**Devices used for online learning**		
	Smart Phone	233	86.30 %
	Smart Phone & Laptop	37	13.70 %
6.	**Number of online courses participated**		
	One	140	51.85 %
	Two	20	07.41 %
	Three	60	22.23 %
	Four & above	50	18.51 %

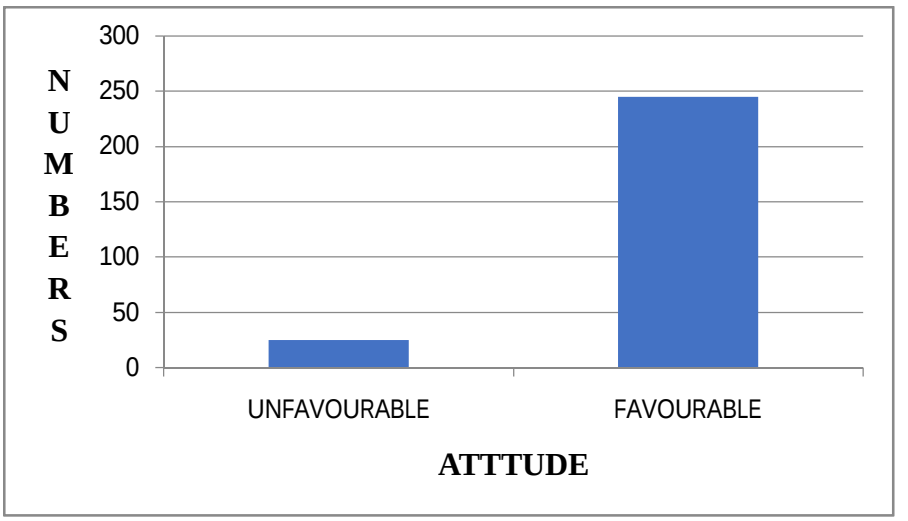

Figure 1: Students' Attitude of students towards online learning.

It shows that 245 students' attitude (9.26%) towards online learning was favourable whereas only 25 students attitude was unfavourable.

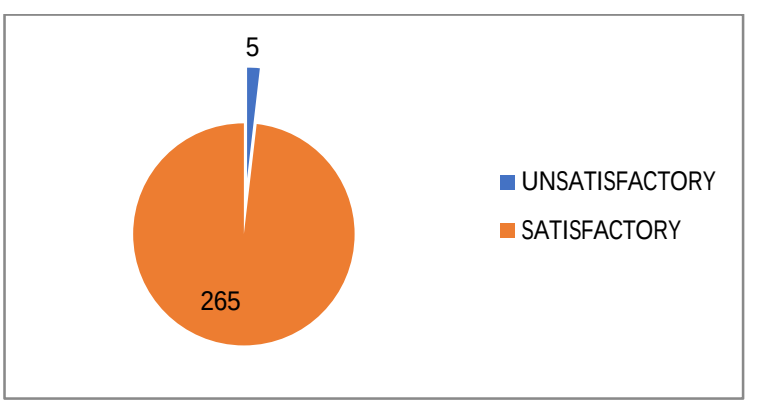

Figure 2: Students' satisfaction on online learning

It shows that most of the students' satisfaction on online learning (98.15%) was satisfactory and only 5 students' satisfaction (1.85%) was unsatisfactory.

Table 2: Association between Satisfactions with demographic variables (n=270)

S.No	Variables	Satisfaction		Total	Chi square	P value
		Unsatisfactory	Satisfactory			
1.	Age					
	≤ 18 Years	-	07	07	**0.006 (df-1)**	0.9383
	≥ 18 Years	05	258	263		
2.	Courses					
	1st Year B.Sc Nursing	05	65	70	**10.851* (df – 5)**	0.00001
	2nd Year B.Sc Nursing	-	70	70		
	3rd Year B.Sc Nursing	-	50	50		
	4th Year B.Sc Nursing	-	45	45		
	1st YearM.Sc Nursing	-	20	20		
	2nd Year M.Sc Nursing	-	15	15		
3.	Previous exposure					
	Yes	-	130	130	**4.737* (df-1)**	0.29521
	No	05	135	140		
4.	Resources for online learning					
	Teacher's Guidance	05	255	260	**0.011 (df-2)**	0.9945
	Friends	-	05	05		
	Social Media	-	05	05		
5.	Devices used					
	Smart Phone	05	228	233	**1.723 (df-1)**	.18930
	Smart Phone & Laptop	-	37	37		
6.	Number of online courses					
	One	05	135	140	**2.323 (df-3)**	.50812
	Two	-	20	20		
	Three	-	60	60		
	Four & above	-	50	50		

***p< .05 level significance**

Table 3: Association between Attitudes and Students' demographic variables (n=270)

S.No	Variables	Satisfaction		Total	Chi square	P value
		Unfavourable	Favourable			
1.	Age					
	≤ 18 Years	-	07	07	**0.085 (df-1)**	0.77063
	≥ 18 Years	25	238	263		
2.	Courses					
	1st Year B.Sc Nursing	05	65	70	**120.99* (df – 5)**	0.00001
	2nd Year B.Sc Nursing	01	69	70		
	3rd Year B.Sc Nursing	01	49	50		
	4th Year B.Sc Nursing	-	45	45		

	1st YearM.Sc Nursing 2nd Year M.Sc Nursing	04 14	16 01	20 15		
3.	Previous exposure Yes No	 19 06	 111 134	 130 140	**10.319* (df-1)**	.00132
4.	Resources for online learning Teacher's Guidance Friends Social Media	 05 - -	 255 05 05	 260 05 05	**46.163* (df-2)**	.00001
5.	Devices used Smart Phone Smart Phone & Laptop	 05 -	 228 37	 233 37	**0.373 (df-1)**	.54137
6.	Number of online courses One Two Three Four & above	 05 - - -	 135 20 60 50	 140 20 60 50	**28.967* (df-3)**	.00001

p< .05 level significance

Table 4: Correlation between satisfaction and attitude of nursing students towards online-learning.
(n=270)

Satisfaction		Attitude		r value	P value
Mean	**S.D**	**Mean**	**S.D**		
51.98	1.102	46.86	3.55	**-0.014**	**0.8188**

p< .05 level significance

Table4: It shows weak negative correlation between satisfaction and attitude of nursing students regarding online learning. It is a weak negative correlation as it is closer to zero.

RESULTS AND DISCUSSION:

The current study assessed the satisfaction and attitude of nursing students towards online learning. In Table 1, the findings of the study showed that majority of the students (98.15%) were satisfied with online learningand (90.74 %) had favorable attitude towards online learning mode. The demographic variables showed that majority of the students were in the age-group of more than 18 years same as the cohort of their group. Similar presentations were shown in a study conducted in Nepal regarding E-learning among the health science students. 87.4 % of the participants were in the age group of 19-25 years(5).The present study included participants from Bachelor and Masters course in Nursing, in contrast to a similar study done in Nepal where they included only bachelor students. Majority of the students were from Bachelor Course. Most of the students did not have previous exposure to online learning. Teachers lecture was the most used resource for the online learning. Very few students have used social media and other resources to enhance their learning. A comparison study conducted by

Alshahrani S, Ahmed E & Ward R to assess the influence of online resources on student lecture relationship in higher education. The results showed that students' use of the internet has improved with the help of lecturers.(6)

Smartphone was the medium used by majority of the students because of its availability. Few students had access to both laptop and smart phones. In contrast to this similar study conducted in Nepal showed that For academic learning, laptop was the most commonly used (48.8%) electronic device followed by smart-phone (46.8%) whereas iPad/tablet and desktop computer were limitedly used only by 2.2% of the respondents(5). Use of smart phone for e –learning by vast majority shows the user friendliness and easy access of the device. Financial factors can also contribute for the hindrance to use computers for E-learning. A major chunk of the students (51.85 %)had attended only one online course during this period. Lack of information and lack of interest may be the cause of this result.

The first objective of the study was to find the attitude of nursing students towards online learning. Figure 1 showed 90.74 % of the participants had favorable attitude towards online learning. Various factors can determine the attitude of students towards online learning. A study conducted in Thailand by Faderogaya SLM &Chantagul N among the undergraduate students regarding learning styles and attitude showed that there is a strong relationship between learning styles and attitude. Highest correlation was between social interaction and attitude.(7).The unfavorable attitude of few students can also be read in this light. Lack of group support and social isolation may be a major setback for the unfavorable attitude. A study conducted in Turkey by Ingec S.K also had similar results that majority had favorable attitude towards e learning. Some factors such as way of learning, self - motivation and learning methods had significant association with favorable attitude(8)

In the present study majority of the students (98.15%) expressed their satisfaction for online learning (Figure 2). A systematic review conducted by Bahramnezhad F, Asgari P et al. at Denmarkwith the aim of "evaluation of the evidence on students' satisfaction of e-learning and the impact of key factors upon e-learning and their usefulness in teaching. The review was done on 16 studies from around the world. It brought forth certain factors which contribute to the satisfaction of the learners. It's worth mentioning because the small number of participants who expressed dissatisfaction might have experienced any of the following factors. Learner related factors can be age, gender, Technical skills and previous exposure to the use of the devices. Instructor related factors are curriculum designing, evaluation methods etc. Management and technical support is the major factor which contribute to the satisfaction because it includes the internet speed, connectivity, security concerns etc.(9)

Table 2 showed the result of the Association between satisfaction and selected demographic variables indicated that satisfaction was significantly associated with demographic variables such as level of courses and previous exposure to online learning.

The systematic review also brought forth similar results that learner related factors can contribute to high degree of satisfaction(9).The association between attitude and selected variables were also assessed in the present study. Table 3 showed the results that attitude is also significantly associated with demographic variables such as courses, previous exposure to online learning, resources for online learning and number of online courses. A study conducted by Kerzic D &Tomazevic N et al. in Slovenian higher educational institutions exploring critical factors of the perceived usefulness of e-learning for higher education students revealed that e learning is found useful and satisfactory when the teachers are very well engaged in the class and students have a positive attitude towards the subject matter(10).

Assessment of correlation between attitude and level of satisfaction yielded a negative correlation in the present study. This result may be an indicator that the present generation is learning to live with the pandemic, being satisfied with the available resources even though they have an unfavorable attitude towards on line learning. This also indicates that they don't prefer online learning as they are exposed to online mode as one form offormal learning through online for first time. Amal IL & Lima SA conducted a cohort study "student's perception, attitudes and readiness toward online learning" showed that the perceived impact and readiness for e-learning were found to be less acceptable. (11)

CONCLUSION:

Learning is a social process. Many researchers and educators expressed the importance of use of technology as education expands to help students' e-learning. The recent digital technology has made more opportunity for continuous learning such as online learning. The present pandemic situation has increased the need for online learning. This present study has concluded that though the students' attitude was unfavourable, they are satisfied as they are left with no other option of learning in pandemic.

Conflicts of Interest:

The authors declare that they have no conflicts of interest.

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REDEFINING EDUCATION THROUGH HUMANISM

[1]Manisha Singh and [2]Prof.Arbind K Jha
[1]Research Scholar, [2]Professor
[1]Department of Education, Babasaheb Bhimrao Ambedkar University, Lucknow, India

Abstract

In today's world of competition, technology, deceit, conflict, war and chaos, the peace bird is seldom visible but nevertheless it still flies. Likewise, the spirit of humanism continues to thrive in the heart of many. Education which bears an important responsibility in building our personality need to work in this direction to blend the essence of humanism in our thinking, actions and spirit. Philosophy of Humanism which holds "welfare of mankind "as its fundamental principle and Humanistic Psychology of Carl Rogers and Maslow which holds the principle of "self- actualization "as must in one's personality. Therefore, by blending the two with each other and then incorporating them in Education may solve our purpose. Hence, this paper presents you with the bifocal lens through which education will be looked upon firstly theoretically and then practically in the name of "Humanistic Teaching Theory ".

Keywords Philosophy of Humanism, Humanistic Psychology, Education

INTRODUCTION:

HUMANISM-The Philosophy

…….Good, great and joyous, beautiful and free: This is alone Life, Joy, Empire, and Victory. (Shelly, 1820 as cited in Lamont , 1962).

The above words by the poet in his lyrical drama Prometheus Unbound give essence of the philosophy of humanism, which says that**Humanism**is a philosophical and ethical stance that emphasizesthe value and agency of human beings, individuallyand collectively, and generally prefers critical thinkingand evidence (rationalism, empiricism) over establisheddoctrine or faith (fideism) (Norman , 2004).It generally prefers critical thinking and rational evidence over acceptance of dogma or superstition. Humanism is a commitment to the perspective, interests, and centrality of the human, his belief in reason and autonomy as foundational aspects of human existence.

The meaning of the term humanism has fluctuated according to the successive intellectual movements which have indented with it. The term was coined by theologian Friedrich Niethammer at the beginning of the 19th century. Generally, however, humanism refers to a perspective that affirms some notion of human freedom and progress. In modern times, humanist movements are typically aligned with secularism, and today humanism typically refers to a non-theistic life stance centred on human

agency and looking to science rather than some revelation from a supernatural source to understand the world. The term humanism has been derived from the Latin word 'Humanus', meaning a system of thought primarily concerned with the HumanBeing and with human affairs in general. Humanism is a democratic and ethical life stance that affirms that human beings have the right and responsibility to give meaning and shape to their own lives. Humanism stands for the building of a more humane society through an ethics based on human and other natural values in a spirit of reason and free inquiry through human capabilities. Humanism is not theistic, and it does not accept supernatural views of reality. The question arises *--how this philosophy might be applied to the real world?* Humanists take the view that an individualwhether men or women are an integral part of nature, their welfare and happiness should be at the topmost priority, therefore they have a right to do the things for welfare of mankind as a whole.

HUMANISM IN INDIA:

Indian Culture is one of the oldest living cultures of todays. Humanism roots are also found in the culture of India right in the very first Hindu Vedas i.e the Rig Veda written around 1500 B.C.E. The Rig Veda deals heavily withskepticism and contains one of the earliestrecorded declarations of agnosticism:

"But, after all, who knows, and who can sayWhence it all came, and how creation happened?the gods themselves are later than creation,so who knows truly whence it has arisen?" (Rig Veda , as cited in The Religious Literary Project , Harvard Divinity School , 2016)

Types of Humanism:

The word Humanism has number of meanings but each term that defines humanism has a specific and definite meaning in itself giving birth to different types of humanism. The different types of Humanismas mentioned in American Humanist Association official page are -

Literary Humanism is a devotion to the humanities or literary culture.

Renaissance Humanism is the spirit of learning that developed at the end of the middle ages with the revival of classical letters and a renewed confidence in the ability of human beings to determine for themselves truth and falsehood.

Western Cultural Humanism is a good name for the rational and empirical tradition that originated largely in ancient Greece and Rome, evolved throughout European history, and now constitutes a basic part of the Western approach to science, political theory, ethics, and law.

Philosophical Humanism is any outlook or way of life centred on human need and interest. Sub-categories of this type include Christian Humanism and Modern Humanism.

Christian Humanism is defined by *Webster's Third New International Dictionary* as "a philosophy advocating the self-fulfilment of man within the framework of Christian principles." This more human-oriented faith is largely a product of the Renaissance and is a part of what made up Renaissance humanism.

Modern Humanism, also called **Naturalistic** Humanism, **Scientific** Humanism, **Ethical** Humanism, and **Democratic** Humanism, is defined by one of its leading proponents, Corliss Lamont, as "a naturalistic philosophy that rejects all supernaturalism and relies primarily upon reason and science, democracy and human compassion." Modern Humanism has a dual origin, both secular and religious, and these constitute its sub-categories.

Secular Humanism is an outgrowth of eighteenth-century enlightenment rationalism and nineteenth century freethought. Many secular groups, such as the Council for Secular Humanism and the American Rationalist Federation, and many otherwise unaffiliated academic philosophers and scientists, advocate this philosophy.

Religious Humanism largely emerged out of Ethical Culture, Unitarianism, and Universalism. Today, many Unitarian Universalist congregations and all Ethical Culture societies describe themselves as humanist in the modern sense.

Humanistic psychology:

Humanistic psychology is a psychological perspectivewhich rose to prominence in the mid-20th century inresponse to Sigmund Freud's psychoanalytic theory andB.F. Skinner's Behaviorism. The approach emphasizesan individual's inherent drive towards self-actualizationand creativity. Psychologists Carl Rogers and AbrahamMaslow introduced a positive, humanistic psychologyin response to what they viewed as the overly pessimisticview of psychoanalysis in the early 1960s.The theory of teaching with psychological perspective is rooted from the theories of Carl Rogers and Maslow. It is believed that the Human nature is rooted from the nature, and the nature is the major part of its characteristics. All the organisms have inbuilt tendency, that is to develop and grow as per their own needs and potential.Rogers "Self-actualization theory " is the description of the human being's motivation to realize and enhance inheritable potentials.

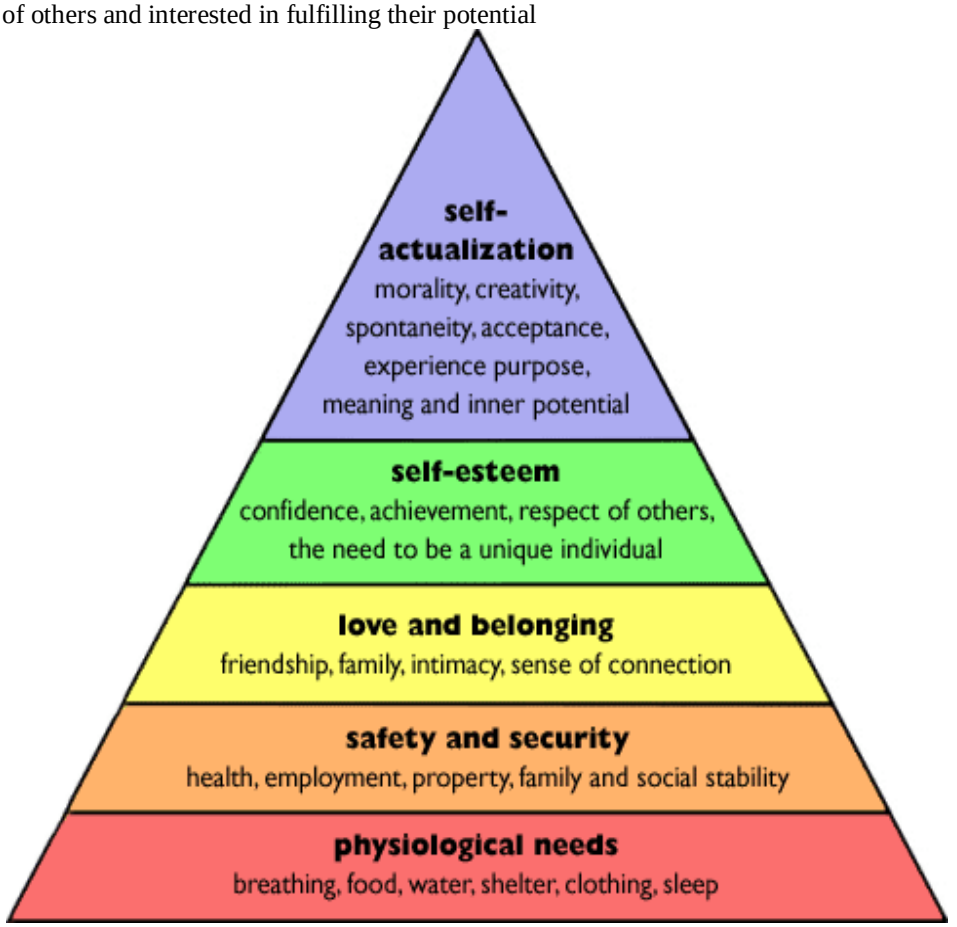
Rogers called an individual who achieves self-actualization a fully functioning person. According to Rogers, fully functioning people exhibit seven traits (Vinney , 2019):

- Openness to experience
- Living in the moment
- Trust in one's feelings and instincts
- Self-direction and the ability to make independent choices
- Creativity and malleability
- Reliability
- Feeling fulfilled and satisfied by life

In the 1960's, through Maslow's Hierarchy of Needs, "Self Actualization"was given the topmost importance .The order of needs were expressed very clearly through a pyramid and was connected to achievements of human , (depicted in Exhibit 1). Every need is specific in it and has its own importance.

1) Physiological Needs: Represents the most basic, instinctoid needs vital for survival, such as the need for water, air, food, sex and sleep.

2) Security Needs: Comprises of needs for safety, security, stability, protection, order, and freedom from fear and anxiety.
3) Social Needs: Include the needs for belongingness, love and affection, mostly satisfied through involvement in personal relationships as well as through social, community or religious groups.
4) Esteem Needs: Primarily of two types: esteem derived from others and self-esteem. The former comprises of externally derived esteem based on reputation, admiration, status, fame, prestige, social success and all characteristics of how others think and react to people. Self-esteem, on the other hand, results from internal feelings of adequateness and worthiness based on the confidence and feelings of being secure inside, in a person.
5) Self-actualizing Needs: The highest level of Maslow's hierarchy, it essentially connotes "becoming all that one is capable of becoming" (Maslow, 1970). Such people tend to be self-aware, concerned with personal growth, less concerned with the opinions of others and interested in fulfilling their potential



(EXHIBIT 1)

PHILOSOPHY OF HUMANISM AND HUMANISTIC PSYCHOLOGY TOGETHER IN EDUCATION (Theoretical Perspective)

- The underlying principle is that education should provide opportunities for empowerment (e.g. Freire 1974; Mezirow 2009; Rogers and Freiberg 1994).
- That students are learning in an environment with little power differential, and where unconditional positive regard and attendance to feelings is central (e.g. Rogers and Freiberg 1994; Gage and Berliner 1991).
- That emphasis is on the process of learning and developing metacognition rather than the product (e.g. Mezirow 1990a, 2009; Rogers and Freiberg 1994; Freire 1974; Gage and Berliner 1991).
- That choice for students in what they do and how they do it (and subsequent responsibilities of that choice) is a necessary component of a humanist educational environment (though this is generally expressed within the confines of the local situation, e.g. societal demands, a programme of study, etc.) (e.g. Rogers and Freiberg 1994; Cowan 2006; Freire 1974).
- That creativity of approach is encouraged (e.g. Mezirow 2009; Gage and Berliner 1991).
- An underlying faith that students have the potential to make appropriate (to them) choices and maximise their potential (e.g. Rogers and Freiberg 1994; Freire 1974; Mezirow 2009; Brockett 1997).
- That episodes of learning are part of a lifelong process and they are individual to the learner (e.g. Rogers and Freiberg 1994; Mezirow 2009).
- That students' judgement of their own progress is the more important (e.g. Cowan 2006; Rogers and Freiberg 1994; Gage and Berliner 1991).

THE APPLICATION OF HUMANISTIC TEACHING THEORY

According to both philosophy of humanism and humanistic psychology,the main aim of education in general should be "self-actualization" and "welfare of mankind".These both are closely related one can say, one is the way to achieve the othe.The actualization of self is the path towards the welfare of mankind. Without the self-actualization, welfare of mankind could not be achieved therefore, there is a need to consider a pedagogy which has features of both. A.Maslow and C.Rogers state the following principles of the effective pedagogical psychology: individualization, differentiation in the process of education; development and self-development of the students' abilities; acknowledgement of the students' inner motivation as a key factor in educational process's stimulation; respect to the students' personality; students' active involvement in educational process (Rogers, 2002; Maslow, 2002).Philosophy of Humanism focuses on a pedagogy that cultivates logics and reasoning in the minds of students so that they just don't believe on concepts and things just because they are put forward by some traditions or any authoritarian sources like supreme power and dogmas but make a decision on rationality.Buddhism school of thought has also given logics very importance. Buddhist logicians think of inference as an instrument of knowledge

(pramana) and, thus, logic is considered to constitute part of epistemology in the Buddhist tradition (Tanaka , 2013).
Blending both perspectivesi.e., philosophy of humanism and humanistic psychology one can draw these aims of Education:

- Self-actualization of an individual is must . "Self-actualization" is the education aim which is pursued by all of the humanism educators including Rogers. Rogers points out that what is the reason for people to learn, the only reason is to satisfy the self-actualization needs. "Self-actualization" is people's instinct need and it is the most important inner motility, even the power to promote the society. The aim of education is to promote "selfhood" to be realized. Therefore "self-actualization" becomes the basic education aim (Jingna , 2012).
- Welfare of individual and mankind should be focussed.Philosophy of Humanism which focuses on commonwealth and fraternity of freeman. It talks about Democracy as the base, while rationalism its centre, and sovereignty of man its apex (Mahakul, 2005) which are essential dimensions for the welfare of mankind.
- Student centred teaching process. According to Humanism teaching process should be such that, that the students must not feel burden, there should not be any forced discipline on them. The environment should be positive in which individuality of each student remains intact along with it he learns, develop, grow in every aspect.Methodologies used in the classroom should keep one thing in mind as a foremost priority that we do not make Roberts out of these students , there should be infusion of new technologies , pedagogies but everything should be planned keeping students welfare at the epicentre .They should grow at par with todays world and global competition around but humanistic elements in their personality should not be missed.
- Logic and reasoning of students should be developed. Philosophy of humanism pillar stands on two most important foundations which are Logic and Reasoning.Both are very important to be focussed on in today's Education. Logics as always been an importance source to understand knowledge more deeply, logic constitute to be part of epistemology in Buddhist Tradition.Logic as an art or a method of argument had been resorted to by men long before any systematic speculation on logic began. The question is therefore not one of logic or no logic but one of developed logic or primitive logic. It was after the philosophical speculations were more or less crystallized that attention was directed towards logic as a separate science (Chatterji , 1931-1932). Therefore, logic and reasoning in an individual must be developed through Education as one of the modes.
- Inner self or the true self should be given importance
- Rationalism should be the centre of all teaching process
- Integration of knowledge and ability
- Knowledge of inner self is must to keep balance with the environment. To develop personality as a whole , Carl Rogers " Self-Concept " is must to be imbibed in the students personality by trying to give them an environment where all three

components of "self-concept " can germinate in every student's personality.These components are (Ismail & Tekke , 2015)

- **Self-image** or how individuals see themselves. One's ideas about self-image can be positive or negative and impact what they experience and how they act.
- **Self-worth** or the value individuals place on themselves. Rogers felt self-worth was forged in childhood through individuals' interactions with their parents.
- **Ideal Self** or the person an individual wants to be. The ideal self-changes as we grow and our priorities change.

- **Teacher – student relationship** Rogers regarded the traditional relationship between teachers and students as "kettle and cup". The teacher is a kettle and the student isa empty cup. The teaching is to pour the water from the kettle into the cup. The student is passive absolutely. He thought if we want to change the present bad situation, we must establish the thought with the student as the subject, and respect the student, encourage them to think independently, at last make the student be independent and volunteer to do things, and they will become more confident (Jingna , 2012). Philosophy of humanism also believes that a teacher and student relationship should be such that there should be freedom of thoughts, liberty of questioning and both teacher and student as an individual should grow to their potential.

Research Methodology

The approach of the research paper is qualitative in nature having exploratory essence in itself. Literary Survey of the Literature available has been done by going through many research papers published in reputed journals and websites related to Philosophy of Humanism, Humanistic Psychology, Carl Rogers and Maslow's work on personality.The official sites like American Humanistic Association, blogs and interviews of Humanistic personalities were also explored.

Conclusion

In the world where Science is so much developed that Human Robert's are available, cloning of humans is in the making and with advent of Artificial Intelligence on one side but on the other side there are cold vibes among nations, cruelty towards living beings and where man is losing its individuality and liberty of thoughts, there is surely a major missing of essence of humanism in the personality we are growing with in this world of Inventions and technology . Education plays an important role in building our personality;therefore, it is very essential that Education must fulfil this missing element in the personalities of student's those are tomorrow's future. Philosophy of Humanism and Humanistic Psychology are those strong foundations which can show the way to the Education on how this missing element of "self" and "individuality "can be infused in the generation today.If we analyse and see to the education process today, it's not that we do not focus on pedagogies but what we have missed to focus upon is the humanistic values which should not be confused with religious values or any orthodox values that are part of any supernatural powers and dogmas but these humanistic values have their

roots in Philosophy of Humanism and Humanistic Psychology that must be part of our teaching methodologies and pedagogies . Fitzmaurice (2010) has suggested that we focus too much on teaching strategiesand tools, and 'context, ideology and values are not discussed' (Malcolm &Zukas 2001 as cited in Fitzmaurice 2010, 53), and this perhaps is a point to consider in academicdevelopment activities which are often focused on methods technically and superficially.

There is lots of future scope for research in this area. I will end my research paper on two questions to think about-

- What could be the pedagogies use to imbibe the humanistic education practically in the classroom?
- Do Science and Humanism hold anything in common? If yes,then on what basis?

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2. ²ªÀ¥À PÉ.¹, 2017, **ªÀZÀ£À zÀ±ÀðÉÀ,** C©£ÀªÀ ¨ÉAUÀ¼ÀÆgÀÄ.
3. ²ªÀ¥À PÉ.¹, 2018, **ªÀZÀ£À ¸ÀÆQ ¸ÀAZÀAìÄÄ.** C©£ÀªÀ ¨ÉAUÀ¼ÀÆgÀÄ.

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ARTIFICIAL INTELLIGENCE IN HEALTHCARE: DURING COVID19 AND AFTER COVID19 IN INDIA

Mrs. Anjna Joseph
Assistant Professor in Physics, Isabella Thoburn College
Lucknow, Uttar Pradesh, India

INTRODUCTION

India has a large population. A small section avails healthcare schemes run with the aid of the authority. Most people are ignorant of such schemes and face many fitness-related troubles. While humans get sick, they go to government hospitals but long ques in OPDs, massive rush and time taking system discourages them to go to there. To avoid these troubles, they go to nearby quacks for the remedy. To triumph over this, we want dispensaries in every locality with a purpose to no longer only reduce the rush in hospitals but also provide desirable, right and timely treatment for all. For dispensaries authorities need infrastructure in addition to health workers. As in line with WHO file primarily based on censes of 2001 there had been 80 medical doctors (which includes allopathic, ayurvedic, unani and homeopathic) consistent with a one hundred thousand and 61 nurses per one hundred thousand of the population (Anand & Fan, 2016)the doctor- patient have become little better as MCI sum of registration of doctors indicates ratio as 1:1595 as in step with population of 1.33 billion. Although the number of doctors has improved in comparison to the number of doctors in 2001 however still we are much under the WHO norms(Bureau, 2018) . The ratio among health specialists and populace is a big constrain to offer health services to all. The ratio in rural vicinity is worse than this. To get more expert medical practitioner is a long- time purpose which cannot be performed in a day. We cannot increase the sum of medical practitioner in a single day but we can take assistance of artificial intelligence to meet with the call for medical experts. Artificial intelligence can aid marvellously in area of healthcare. Artificial intelligence is a combination of more than one technology. They can work as machine learning, Natural language processing, Rule-based expert systems, Physical robots and robotic process automation(Davenport & Kalakota, 2019). Artificial intelligence cannot be an alternative choice to human beings but it can assist human beings to provide required outcomes. Right now, because of this pandemic the requirement of medical examiners has expanded many folds and because of its air born nature, the number of patients are growing day by day. With the assistance of AI, we can discover signs and symptoms and may carry out medical and laboratory checks easily.

METHOD

This research paper is descriptive in nature and secondary information is required to explain the goal of this paper. For this writer has reviewed literature thru databases of Google scholar, PubMed and Scopus the use of terms, artificial intelligence, AI remote

monitoring, drug discovery, health workers and COVID19. Accumulated statistics later analysed. Through this paper the writer desires to discover the application of artificial intelligence in healthcare region in COVID19 and after COVID in India

SCOPE OF ARTIFICIAL INTELLIGENCE IN HEALTHCARE SERVICES

Detecting and Diagnosing of the disease

Data is knowledge, and with the assist of digital health records (EHR) AI can augment the extent of probably lifestyles-saving information of patient and these large records helps health workers to create a demographic map to hit upon ailment outbreaks in early levels in specific areas of the country. This could be a beneficial tool to find out the regions that are going to be badly suffering from illnesses like Dengue fever, Malaria, Tuberculosis or COVID 19 and provide the well timed facts to health department officials to take activate action and to reduce the detrimental effect of the sickness in the locality.

In December 2019 first case was detected for COVID19 and soon maximum of the international locations of the sector get stricken by it. Early analysis of the disease become critical to reduce the rate of spreading. To assist in early diagnosis a deep mastering version turned into developed to distinguish community acquired pneumonia from COVID19 on the premise of chest CT scans(Li et al., 2020).AI plays an important role in diagnosing the sicknesses with the help of digitized statistics which includes, detection of breast cancer based totally on mammograms, assessing the danger of sudden cardiac death or other coronary heart sicknesses based totally on electrocardiograms and cardiac MRI images, classifying pores and skin lesions in skin pics and locating signs of diabetic retinopathy in eye image, detecting lung cancer or strokes primarily based on CT scans(*Artificial Intelligence in Medicine | The Top 4 Applications*, n.d.).These records assist doctors to diagnose a affected person and on occasion it really works as a 2nd opinion for them(Reading, 2019).

Tracking and Monitoring

Telehealth is getting clinical advice via mobile or laptop- based telecommunication(Kuziemsky et al., 2019) . Even as in far off tele tracking information series is executed via allotted devices and internet of things (IOT). High risk sufferers of various health associated issues like cardiac hassle, neurological and psychological problems need steady monitoring. If you are dwelling in a rural area AI turns into an excellent aid for the affected person and their close family members as there it is very difficult to rent a medical examiner for the patient (Langen et al., 1994). In telehealth AI can provide help for the people dwelling away in rural area, AI can expand algorithms to attach them with the proper health expert as consistent with their needs. In hospitals and health centres for the duration of chronic disorder control when a patient wishes more than one doctor to clear up his/her problem AI can offer aid and assist them to get proper clinical recommendation.AI facilitates in retaining the

document of affected person's situation and administrate remedy also. IOT presents records to public health agencies for monitoring COVID19 (Ting et al., 2020).
Digital DHIS2 gives information of humans coming back from COVID 19 inflamed international locations. In addition, this time of pandemic when reverse migration is on its top. Human beings are going back to their villages in which medical resource is negligible. In such situations artificial intelligence can play a big role in monitoring the COVID effective humans. AI based drones may be used in keep an eye at the those who are not wearing masks and are not following the health guidelines (Kapoor et al., 2020).

Development of drugs

In a traditional procedure, to find out a drug for a particular ailment is a long- time period system. It begins with research and improvement and ultimately reaches to the market. This process takes minimum 10 years. At the same time AI can lessen its time length through evaluating all of the viable outcomes considering all of the parameters.AI primarily based drug screening strategies can help us to understand the shape and capabilities of various viruses that's an vital tool for designing capsules(*AI Can Play a Big Role in Vaccine Development for COVID-19 - Express Pharma*, n.d.).AI has given a brand new existence to computer based totally drug layout and novel textual content development(Alimadadi et al., 2020) with the use of its powerful expertise discovery in database capacity (Zhong et al., 2018).

Sharing workload of medical professionals

In India there are 20 medical professionals to take care of 10,000 people. The phrase medical examiner consists of allopathic doctors, AYUSH, Dentists, Nurses and midwives, Pharmacists, Ophthalmic assistants, Radiographers and Technicians (Rao, n.d.). At some stage in this pandemic the workload of health workers has improved an awful lot greater than typical. To lessen their load AI can assist by way of detecting the early signs and symptoms of the sickness, diagnose and assist human beings to obtain proper treatment (Vaishya et al., 2020).AI can help in nursing care of infected humans and reveal their situation with out getting tired. They can hold the information of the wide variety of admitted sufferers and number of the beds available. Although AI may be a terrific help for medical experts however it cannot way replace them.

FUTURE OF AI IN HEALTHCARE IN INDIA

Artificial intelligence is a necessity at this stage in COVID19 and after COVID19 in India. There are many areas of healthcare like symptomatic case reviews, monitoring and tracking, report preserving in which AI can help health workers. Indian government also felt AI's requirement in healthcare before COVID19. Its programs in healthcare in rural regions for developing health data repositories, enhance health quality (*Artificial Intelligence Task Force*, n.d.) and digital pathology (Aayog, 2018). Authorities has planned to use AI to lessen the cost of medical screening and prediction of disease out-

break with the help of AI (*Artificial Intelligence Committees Reports | Ministry of Electronics and Information Technology, Government of India*, n.d.).

CONCLUSION

Artificial intelligence is a great help in healthcare. AI can help to gather early warning of disease out-break and inform health officers, maintaining records of number of beds available in hospitals. It can also take care of thermal screening of people entering in hospital during COVID19.AI can provide a great help in detection of cancer, since they have big data, they can draw conclusion in seconds. AI and Machine language can speed up the drug discovery process. Using AI, the quality of screening and pathology can be improved. AI can help in surveillance across regions of high risk.AI can never be a substitute for health workers, it can assist them for better results.AI can be a boon if we use it wisely.

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A STUDY ON CUSTOMER ATTITUDE TOWARDS DAIRY PRODUCTS IN MADURAI NORTH

[1]Mrs.M.Parimala[2] and Ms.S.Suruthi
[1].Associate Professor, Department of Commerce, Lady Doak College, Madurai, India
[2.] PG Student, Department of Commerce, Lady Doak College, Madurai, India

ABSTRACT:

Milk and dairy products are most essential commodities in our daily life and it provides nutrition to all of us. A dairy product means from the milk of mammals it is produced by the dairy Industries for sales. Dairy products like creams, milk powders, butter, cheese, lactose, chocolates are edibles items. Dairy products and Industry of such dairy products provides livelihood to millions of people in the world. The consumers attitude is the study of how, why and where people buy or not to buy the particular products The objectives is to find out the consumer preference, satisfaction level, factors influence to buy dairy products are studied in selected areas of Madurai North District. The present study is based on the both primary and secondary data. With the help of well structured questionnaire primary data has been collected. One hundred respondents by convenient sampling method are selected for the study. From the data collection, analysis made on various tools like Percentage, chi-square test, Likert Scaling, Garret Ranking Method and one way ANOVA. Percentage is calculated on the basis of age, sex, education, monthly income. A dairy product is one of the major quality food items.

Key Word: Dairy Products, Customer, Attitudes, Stratification

I. INTRODUCTION:

India is the largest producer of milk. Food products which contain major portion of milk along with other components are referred as dairy products. Dairy products are highly nutritious and play a vital role in human diets. Milk is an essential component of people in their day today life. From the milk so many dairy products are produced. The animals that produce milk are called as mammals like cow, goat, sheep, and buffalo. Such milk contains calcium which is necessary for strong bone and a tooth of human begins. Dairy products include yogurt, cheese, butter, paneer and ice-cream which are rich in carbohydrates. People consume dairy products on the basis of their preference and attitude Consumer behavior focuses on how individuals make decision to spend their money on consumption. Consumers are influenced by the marketing activity. Customer attitude never remains the same, it changes due to various factor. The study covers the individual attitude and behavior to understand the wants and needs towards dairy products.

1.2 OBJECTIVES OF THE STUDY:

- To analyze the consumer behavior towards dairy products.
- To investigate the factors determining the consumer preference towards dairy products.
- To identify the satisfaction level of consumers towards dairy products.
- To analyze the consumption pattern of the respondents towards dairy products.

1.3 HYPOTHESES:

Sl.No	H0/H1	Description	Testing Methods
1.	H0	There is no significant relationship between age and the factors influencing them to purchase dairy products.	Chi – Square Test
	H1	There is a significant relationship between age and the factors influencing them to purchase dairy products.	
2.	H0	There is no significant relationship between gender wise classification of the respondents and opinion on consumption of dairy products.	
	H1	There is a significant relationship between gender wise classification of the respondents and opinion on consumption of dairy products.	
3.	H0	There is no significant difference between age wise classification and source of awareness on dairy products.	One Way ANOVA
	H1	There is a significant difference between age wise classification and source of awareness on dairy products.	

1.4. SCOPE OF STUDY:

The researcher focused only few dairy products such as milk, ice cream, cheese and paneer and customer attitude, level of satisfaction towards such dairy products. Moreover the study was focused only the selected areas in Madurai North namely Andar kottaram, Veerapanjan, Gomathipuram and Matuthavani.

1.5 STATEMENT OF THE PROBLEM:

Dairy is one of the most important nutritious foods which are normally consumed by all age group irrespective of the rich and poor. Dairy foods are healthier and balanced diet. The consumption pattern of dairy products differs from one person to another. So, the researcher was interested to study the customer attitude and changing behavior on consumption of dairy products.

1.6 REVIEW OF LITERATURE:

Abinaya. K and Shanthi. A (2018)[1]A study on consumer preference on dairy products. The researcher identifies that the government has also sponsored scheme called

[1]Abinaya k and Shanthi A "A study on consumer preference on the dairy products in Madurai district, Tamil nadu" **international journal of advance research and development,** vol.2, issue 8, 2018.

"strengthening infrastructure for quality and clean milk production" to ensure clean milk production to meet out the demand of the consumers. The cost and productivity of dairy product is analyzed. The study made on identifying the costumer buying pattern of dairy products to improve the processing and marketing of dairy products by the dairy industry for the economic development of a country.

Elangovan. N and Gomatheeswaran. M (2015)[2] studied on consumer behavior towards various brands of milk and milk products. The primary data are collected from 120 consumers in Coimbatore district with the help of a well structured questionnaire. Consumer lifestyle are influenced by various factors like culture, subculture, values, demographic factor, social status and also the internal makeup of the consumer which are emotions, motivates of buying knowledge. It is found that Aavin is the most preferred brand and most of them buy the milk and milk products from retail shops only.

Rubaina (2010)[3]A study was made towards the customer preference in dairy products. The study had dealt with the classification of customers preference and various factors which influenced them while select the branded dairy products. The study is made to give suggestion to the company, that the company should make surveys to know the expectation of the consumer towards their brand and products and to improve themselves to attract more customers. The company can advertise their product through mass media to expand the sales and to attract new customers.

1.7 OPERATIONAL DEFINITION:

1.7.1 Dairy product: Dairy products or milk products are a type of food produced from or containing the milk of mammals.

1.7.2 Customer: A customer is a person who purchases dairy products according to his needs and wants.

1.7.3 Attitude: A tendency to respond positively or negatively towards a certain idea, object, person, or situation. Attitude influences an individual's choice of action, and respond to challenges and rewards.

1.7.4 Satisfaction: A persons feeling of pleasure resulting from a positive perception of consuming dairy products.

II. METHODOLOGY:

Research Design: Descriptive research design

Determination of sample size:

- *Sample Size* : 100
- *Sampling Technique* :Convenient Sampling Technique

[2]Elangovan N and Gomatheeswaran M "A Study on consumer behavior towards various brands of milk and milk products with special reference to Thudiyalur town at Coimbatore district n Tamil Nadu" **International journal of multidisciplinary research and development**, vol.2, April 2015.

[3]Rubaina, "A study on customer preference towards dairy products", 2010.

Sources of Data:

- *Primary Source* : Questionnaire was developed for the purpose of data collection.
  - Weighted Average Method, Garrett Ranking Method was adopted to measure the responses.
- *Method of Data Collection:* Interview schedule was adopted to collect data

Framework of Analysis:

- Descriptive Analysis : Bar and Pie Diagram
- Inferential Statistics : t Test and One Way ANOVA

III. ANALYSIS:

PERCENTAGE ANALYSIS

TABLE No.1.1

GENDER	**NO. OF RESPONDENTS**	**PERCENTAGE**
MALE	55	55%
FEMALE	45	45%
TOTAL	**100**	***100***
AGE		
1 - 20 YEARS	16	16%
21 - 40 YEARS	51	51%
41 - 60 YEARS	27	27%
61 YEARS & ABOVE	6	6%
TOTAL	**100**	**100**
MARITAL STATUS		
MARRIED	52	52%
UNMARRIED	48	48%
TOTAL	**100**	**100**
TYPE OF FAMILY		
NUCLEAR FAMILY	81	81%
JOINT FAMILY	19	19%
TOTAL	**100**	**100**
OCCUPATION		
GOVERNMENT EMPLOYEE	3	3%
PRIVATE EMPLOYEE	32	32%
BUSINESS	22	22%
OTHERS(Students)	43	43%
TOTAL	**100**	**100**

AVERAGE QUANTITY OF ICE CREAM,PANEER, CHEESE&FLAVOURED MILK PURCHASED BY RESPONDENT

TABLE No:1.2

ICE CREAM	NO. OF RESPONDENTS	PERCENTAGE
0 - 300 GRAMS	22	23%
301 – 600 GRAMS	49	52%
601 GRAMS – 1 KG	17	18%
1 KG & ABOVE	7	7%
TOTAL	***95***	***100%***
PANEER		
0 - 300 GRAMS	25	26%
301 - 600 GRAMS	46	48%
601 GRAMS - 1KG	20	21%
1KG & ABOVE	5	5%
TOTAL	***96***	***100%***
CHEESE		
1 PACKET OF CHEESE A WEEK	51	55%
2 PACK	27	29%
3 PACK	10	11%
MORE THAN 3	5	5%
TOTAL	***93***	***100%***
FLAVOURED MILK		
250 ML	39	42%
500 ML	34	37%
750 ML	6	7%
1 LITRE	13	14%
TOTAL	***92***	***100%***

FREQUENCY OF BUYING ICE CREAM,PANEER, CHEESE&FLAVOURED MILK

TABLE No:1.3

ICE CREAM	NO. OF RESPONDENTS	PERCENTAGE
DAILY	3	3%
ONCE A WEEK	69	73%
ONCE A MONTH	12	13%
OCCASIONALLY	11	11%
TOTAL	***95***	***100%***
PANEER		
DAILY	1	1%
ONCE A WEEK	74	77%

ONCE A MONTH	13	14%
OCCASIONALLY	8	8%
TOTAL	***96***	***100%***
CHEESE		
DAILY	3	3%
ONCE A WEEK	30	32%
ONCE A MONTH	37	40%
OCCASIONALLY	23	25%
TOTAL	***93***	***100%***
FLAVOURED MILK		
DAILY	11	12%
ONCE A WEEK	39	43%
ONCE A MONTH	27	29%
OCCASIONALLY	15	16%
TOTAL	***93***	***100%***

WEIGHTED AVERAGE METHOD
SOURCE OF AWARENESS ON DAIRY PRODUCTS
TABLE No:1.4

CONSIDER	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
VALUE	**5**	**4**	**3**	**2**	**1**

S.No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean Score
1	Friends and relatives are the important source of awareness	69	15	9	6	1	4.45
2	Visual media namely television	19	67	7	5	2	3.96
3	Pamphlets of the product sustain awareness	23	48	18	10	1	3.82
4	Shop display triggers curiosity	36	42	11	9	2	4.01
5	Shop keepers word of mouth helps in knowing about the product more.	32	47	13	7	1	4.02

From the above table, it is clear that friends and relatives are the important source of awareness on dairy products with the mean score of 4.45%,.Visual media namely television mean score of 3.96%,Pamphlets of the products mean score of 3.82%,Shop display mean score of 4.01%,Shop keepers word of mouth mean score of 4.02% rated by the respondents.

OPINION ON CONSUMPTION OF DAIRY PRODUCT

TABLE No:1.5

S.No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean Score
1	Milk product consumption is an essential part of my diet	74	20	4	2	0	4.66
2	consuming milk products promote health care	22	71	6	1	0	4.14
3	I consume milk product because of its nutritional value	36	54	9	1	0	4.25
4	I have the habit of consuming milk product during celebrations	25	37	15	18	5	3.59

From the above table, it is clear that opinion of the respondents differ with various factors. Milk product consumption is an essential part of diet with the average mean score of 4.66% and the habit of consuming milk products during celebration is rated as least score 3.59% by the respondents.

FACTORS THAT INFLUENCE TO PURCHASE DAIRY PRODUCTS

TABLE No:1.6

S.No.	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean Score
1	I look upon the quality of milk products	71	25	4	0	0	4.67
2	I consume when price is reasonable	13	70	6	9	2	3.83
3	Taste is the first and foremost factor which I consider	35	50	10	4	1	4.14
4	I prefer on the product freshness	50	37	12	1	0	4.36
5	Available in required quantity influences my choice	33	40	22	2	3	3.98
6	Gifts and offers influence my purchase decision	13	29	28	20	10	3.15
7	I consider the brand loyalty while choosing a product	34	44	18	3	1	4.07
8	Advertisement influences my purchase dec;ision	12	25	42	15	6	3.22

From the above table, it is clear the respondents look over the quality of dairy products while purchasing rated with 4.67%. Gifts and offers influence the purchase decision is rated with 3.15% by the respondents

FACTORS THAT INDUCES TO SWITCH OVER TO OTHER BRANDS

TABLE No:1.7

S.No	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean Score
1	Frequent change in price	56	22	9	10	3	4.18
2	Poor quality of products	26	63	4	7	0	4.08
3	Change in taste	33	48	14	5	0	4.09

4	Not easily available	35	43	12	8	2	4.01
5	Poor packing	27	34	31	5	3	3.77
6	No discounts and offers	9	25	24	26	16	2.85

From the above table, it shows frequent change in price induces the respondents to switch over to other brands has been rated with 4.18% by the respondents. No discounts and offers induces the decision on switching over to other brand has been rated with 2.85% by the respondents.

GARRETT RANKING METHOD
SATISFACTION LEVEL OF RESPODENTS TOWARDS DAIRY PRODUCTS

TABLE No:1.8

S.NO.	FACTORS	TOTAL SCORE	AVERAGE SCORE	RANK
1	Affordable price	6352	63.52	II
2	Good Quality	6760	67.6	I
3	Good taste	5541	55.41	III
4	Gifts and offers	3601	36.01	VI
5	More flavors'	3933	39.33	IV
6	Brand	3813	38.13	V

From the above analysis it is stated that good quality gives higher satisfaction while purchasing and consuming dairy products is ranked as first by the respondents, affordable price on purchase is ranked as second by the respondents and good taste gives satisfaction level is ranked as third and more flavours is ranked as fourth and brand is the foremost thing considered is ranked as fifth and finally gifts and offers while purchasing gives satisfaction is ranked as sixth by the respondents.

ONE WAY ANOVA
DIFFERENCE BETWEEN SOURCE OF AWARENESS AND AGE WISE CLASSIFICATION OF THE RESPONDENTS USING ONE WAY ANOVA

H0 - There is no significant difference between age wise classification and source of awareness on dairy products.
H1 - There is a significant difference between age wise classification and source of awareness on dairy products.

AGE*SOURCE OF AWARENESS
ANNOVA TABLE No:1.9

SOURCE OF AWARENESS	AGE (in years)	N	MEAN	STANDARD DEVIATION	F	P-VALUE
Physical	1-20 YEARS	16	18.0000	3.42540	3.180	.027
	21-40 YEARS	51	20.3725	3.78925		
	41-60 YEARS	27	21.1481	2.72741		
	61 AND ABOVE	6	21.3333	2.25093		
	TOTAL	***100***	***20.2600***	***3.51510***		

From the above table, it has been interpreted that as the p-value is less than 0.05, at 1% level of significance and so the null hypothesis(H0) is rejected and the alternative hypothesis is accepted(H1). It is concluded that there is a significant difference between age wise classification of the respondents and source of awareness on dairy products.

CHI-SQUARE TEST

TESTING OF RELATIONSHIP BETWEEN AGE WISE CLASSIFICATION OF THE RESPONDENT AND THE FACTORS INFLUENCING TO PURCHASE DAIRY PRODUCTS USING CHI-SQUARE TEST

H0 - There is no significant relationship between age and the factors influencing them to purchase dairy products.
H1 - There is a significant relationship between age and the factors influencing them to purchase
dairy products.

AGE * FACTORS CROSS TABULATION
TABLE No:1.10

FACTORS				TOTAL
Age	**LOW**	**MEDIUM**	**HIGH**	
1-20 Years	8	7	1	16
21-40 Years	6	33	12	51
41-60 Years	1	22	4	27
60 and above	0	4	2	6
Total	**15**	**66**	**19**	**100**

CHI SQUARE

TEST	VALUE	DEGREE OF FREEDOM	ASYMP. SIG.(2-SIDED)
Pearson chi-square	**21.631a**	**6**	**.001**

From the above table it is understood that majority of the respondent lies between the age group of 20 - 40 years of age. The p-value is less than 0.05 at 1% of level of significance and so the null hypothesis (Ho) is rejected and the alternative hypothesis is accepted. Therefore there is a relationship between age and the factors that are influencing them to purchase dairy products.

TESTING OF RELATIONSHIP BETWEEN GENDER WISE CLASSIFICATION OF THE RESPONDENT AND OPINION ON CONSUMPTION OF DAIRY PRODUCTS USING CHI-SQUARE TEST

H0 - There is no significant relationship between gender wise classification of the respondents and opinion on consumption of dairy products.

H1 - There is a significant relationship between gender wise classification of the respondents and opinion on consumption of dairy products.

GENDER * OPINION CROSSTABULATION
TABLE No:1.11

	OPINION			TOTAL
Gender	**LOW**	**MEDIUM**	**HIGH**	
Male	1	23	31	55
Female	1	20	24	45
Total	**2**	**43**	55	**100**

CHI SQUARE

TEST VALUE		DEGREE OF FREEDOM	ASYMP. SIG. (2-SIDED)
Pearson chi-square	**.101a**	**2**	**.951**

From the above table it is understood that p-value is more than the level of 0.05 at 1% level of significance and so the null hypothesis is accepted, and the alternative hypothesis is rejected. It is concluded that there is no significant relationship between gender and opinion on consumption of dairy products.

IV LIMITATIONS OF THE STUDY:

- The sample size is limited to 100 and the study is focused only on Madurai North.
- The opinion and satisfaction level of dairy products does not remain the same in the minds of consumers for a longer period.
- The study focuses only on dairy products like milk, cheese, paneer and ice cream.

V FINDINGS:

- The Educational Status of the respondents shows that 71% of the respondents are Graduates. It is concluded that majority of the respondents are Graduates.

- From the analysis it was observed that 43% of the respondents are Students and Homemakers and 32% of the respondents are working as a Private Employee and 22% of the respondents are carrying out their Business and 3% of the respondents are Government Employee.
- From the analysis it is observed that 38% of the respondent's monthly income is Rs. 30000 – Rs. 60000 and 31% of the respondent's monthly income is Rs. 10000 – Rs. 30000 and 21% of the respondent's monthly income is Rs. 60000 & above, 10% of the respondent's monthly income is below Rs. 10000.
- It is observed from the analysis that 54% of the respondents purchase dairy products in Grocery Shop and 7% of the respondents purchase dairy products in Departmental Stores.
- It is observed from the analysis that relatives and friends are the important source of awareness on dairy products with the mean score of 4.45% of the mean score and the least is pamphlet of the products sustain awareness on dairy products is 3.82% rated by the respondents.
- It is observed that opinion of the respondents differs due to various factors and Milk product consumption is an essential part of my diet says respondents with the average mean score of 4.66% and I have the habit of consuming milk products only during celebration is rated least with 3.59% by the respondents.

VI SUGGESTIONS:

As all the people from different age group consume dairy products, the companies can go for introduction of new, attractive and innovative products like Baby milk, Added nutrition for school going children, Extra nutrition for sports person, Diet milk for pregnant mothers, Calorie conscious milk products for patients and aged persons. This will result in increasing the number of new dairy product consumers and retain the existing consumers.

- The five factors namely freshness, nutritional value, low price, easy availability, and brand image makeup the measures of consumers' preference. It is suggested that these factors should be the major components of the Unique Selling Proposition.
- The milk brands have to reduce the price of the products based on the affordability of all kind of people. The producers have to ensure the availability of the products at all times for the convenience of the people.
- Age is the major factors that decide on the consumer purchase decision and factors that are influencing them to purchase.
- Quality is more expected since, dairy products are available in a limited validity period people are more concern about the quality of purchase. Increasing the quality may change the attitude of the consumers towards dairy products.
- Increase in purchase of dairy products may occur due to good quality of products availability. Climatic changes, weather conditions, and festivals also increase the customer attitude towards dairy products. So, the producer should ensure availability of dairy products on all time at all basis of occasions.

VII CONCLUSION:

Customer attitude is a study of why, when, where and how to decide on purchase or not purchase a products. The study was made on customer attitude towards dairy products and it mainly focused on customer attitudinal changes and behavior towards consuming dairy products. Since, dairy products have nutritional value purchase decision varies according to the perception of consumer. The data collection was made in order identify the customer attitudinal changes towards dairy products. Quality is the major component expected by the consumer on dairy products and other factors like affordability, brand, required quantity, more flavours are also considered by the consumers. Age is the major demographic factor that decides on the purchase decision of the consumer. Children look for the flavours, gifts and offers while adults and other age group look for nutritional value and quality of the products. The attitude of customer differs according to the age, it is concluded that there is a relationship between age and the factors that are influencing the consumer to purchase dairy products.

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A STUDY OF IDENTIFICATION OF GAP BETWEEN THEORY AND PEDAGOGICAL PRACTICES IN SCIENCE CLASSROOMS

Ms. Bhawna Shokeen[1], Dr. Neha Gupta[2]
[1]Researcher, Amity Institute of Behavioral and Allied Sciences
[2]Supervisor, Amity Institute of Behavioral and Allied Sciences

Abstract:

The present research focuses on the pedagogical practices in science classrooms as recommended in NCF 2005 and NCERT position paper for science teaching 2006. Objectives of the research were to identify the gap between these recommendations and actual practices in science classroom and to analyze the teachers' attitude towards science and its pedagogy. The study was conducted in 3 Schools of Delhi NCR. 3-4 teachers from each school were interviewed and 90 students of classes 6th to 8th (30 students from each school randomly) were given questionnaire. Schools overall were also observed for their infrastructure, facilities, laboratory and school culture. The researcher concluded that there is a huge gap between how things are on papers and how things are actually received by the children. Amendments are required not only at the level of school curriculum, but also at the level of teacher education and the agencies providing teacher education should be under watch because this is what is leading to debarred growth in the field of education, despite of having a strong and intellectual theoretical basis.

Key words: NCERT position paper for teaching science 2006, NCF 2005, pedagogical practices, Science.

Introduction

Science is a subject that is related to our daily life, our environment and our body.Science like many other subjects, is much more interesting if it makes sense to us. The idea of developing scientific temper was identified and focused upon by the honorable Prime Minister of that time, Pt. Jawaharlal Nehru. Moving forward with his thoughts and ideas, Science Education turned out to be a very important discipline in the world of education. With science wars and movements growing in number, it became all the more important to step forward towards a better understanding of science and our environment.

It was after such movements, that it was realized that science is no more a subject to be practiced in laboratories only and every scientific revolution has an impact on the lives of the people around it, hence science cannot be viewed in isolation, rather it has to be viewed as a part of society.

With this thought, the National Policy on education (1968, 86), the National Curriculum Framework (2005) and many other policy documents laid emphasis on reframing the structure of science education in Indian classrooms.

National Curriculum Framework (2005) and many other policy documents laid emphasis on reframing the structure of science education in Indian classrooms. It was to help children realize that learning science doesn't require rote learning concepts; it rather requires development of scientific skills. Hence, the National Curriculum Framework 2005 has been a revolutionary measure taken in terms of curriculum design from primary till higher secondary level. There are various recommendations in the NCF, regarding school curriculum as well as the changes that teacher education curriculum requires. It also places importance on the fact that learning has become a source of burden and stress on children which basically hampers the quality of education.

According to NCERT Position paper (2006), the objectives of Teaching of Science are to enable the learner to know the facts, laws and principles of science and their applications, consistent with the stage of cognitive development of the learner. Which help student acquire the skills like understanding the processes and methods that lead to validation and generation of scientific knowledge. It also focuses on nurture the natural curiosity of the students and aesthetic sense and creativity in science and technology. Also relate to the environment whether natural environment, artifacts or people, local as well as global, and appreciate the issues at the interface of science, technology and society. To provide learners the requisite theoretical knowledge and practical technological skills to enter the world of work. Also imbibe the values like honesty, integrity, cooperation, concern for life and preservation and protection of the environment. Also to develop a historical and developmental perspective of science and to enable learners to view science as a social enterprise.

Thus, learning of science at school level develops different skills and abilities among students for example solve problems of daily life, develop skills of observation, interest and curiosity about the natural phenomenon, and develops vocational and productive skills, scientific skills that link Science learning to Productivity, also critical, logical and creative thinking. At primary school, teaching learning has to be joyful, and should give ample opportunities to the students to explore their surroundings, interact with people and situations. And then should be given opportunity to discuss about it. The main objectives at this stage are to arouse curiosity about science, and train child to explore phenomena and through hands-on activities develop basic cognitive and psychomotor skills. The curriculum should help the child internalize the values like concern for life and environment. The NCERT's position paper (2006) on teaching of science suggests that an ideal science curriculum should have cognitive validity which means the curriculum must be age appropriate, within the child's cognitive level i.e. in content, process, language and pedagogical practices must be age appropriate. An ideal science curriculum should further have content validity, which means that the curriculum must convey the correct and significant scientific facts and content. Then the paper suggests that the curriculum should also have process validity, ethical validity, environmental validity and historical validity, basically every fact should be true. Based on this suggestion only, the NCF 2005, introduced a curriculum of science which has theme based till primary classes and NCERT designed books based on those themes. These books were divided in themes rather than rigid topics.

Need and significance

The key issues and concerns that the science education is facing today has been the large gap that separates the curricular objectives and their implementation through syllabus, textbooks, classroom practices and examinations that takes place in the school. Science is not a type of subject which supports rote memorization. It requires exploration, curiosity, experimentation. The researcher through this study tries to identify the gap between theory of science education and implementation of the design and recommended curriculum in classroom practices.

Methodology

Sample:

The researcher used the random sampling technique. The study was conducted in 3 Schools of Delhi NCR. 3-4 teachers from each school were interviewed and 90 students of classes 6th to 8th (30 students from each school randomly) were given questionnaire. Schools overall were also observed for their infrastructure, facilities, laboratory and school culture.

Tools and techniques:

The researcher used descriptive research technique. Which include both qualitative and quantitative methods. Qualitative research can help researchers to analyze the thoughts and feelings of research participants. It may enable the researcher to development an understanding of the meaning of the responses that respondent gives through their experiences. There are many ways of conducting qualitative research, and for this study researcher chose interview schedule (semi structured interview) and observation schedule as research tools. It was used to analyze the attitude of the teachers towards science as a subject and its pedagogy. Also there is a questionnaire for a quantitative data to analyze the gap. Researcher used self-constructed questionnaire and contain 25 statements related to science classroom practice and its pedagogy. Statistical technique used is average/mean for questionnaire.

Objectives

1. To study the pedagogical practices adopted by the teachers in science class rooms.
2. To study and analyze the teachers' attitude towards science and its pedagogy.
3. To identify gap between theory and practice methodologies of teaching science.

Research questions

1. What are the pedagogical practices (as prescribed by NCF and NCFTE) that teacher follow or adopt in order to achieve the goals of an ideal science curriculum in science classrooms?
2. What is the attitude of the teachers' towards Science and its pedagogy?

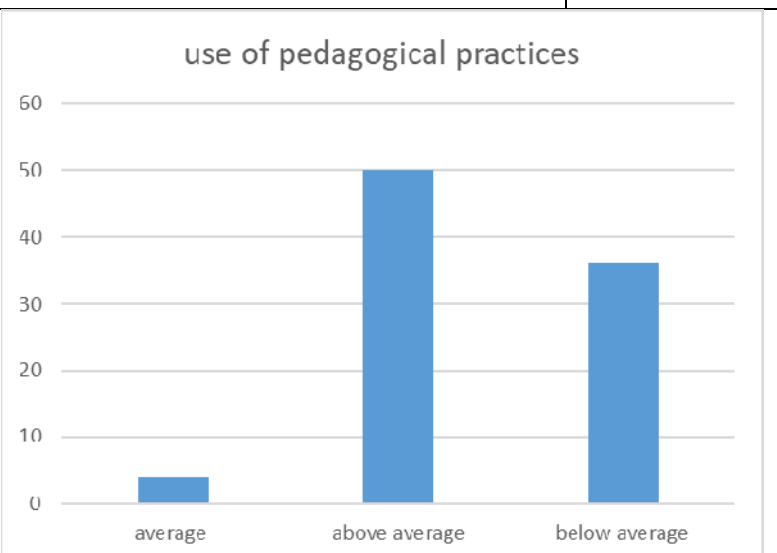
3. What are the gaps between theories and pedagogical practices done by the teachers in science classrooms?

Data analysis and interpretation

Objective 1: To study the pedagogical practices adopted by the teachers in science class rooms.

To analyze this objective questionnaire was used:-

Number of Students scored average	4
Number of Students scored above average	50
Number of students scored below average	36



Graph 1: Distribution of scores for use of pedagogical practices

It is evident from above graphthat how many students are experiencing, how much pedagogical practices. 50 students scored above average which means maximum students are taught with maximum number of pedagogical practices. Whereas 36 students scored below average means only few pedagogical practices are adopted in their class by their science teacher. Overall, maximum students are learning in a student centered environment and science pedagogical practices are being practiced.

Objective 2: To study and analyze the teachers' attitude towards science and its pedagogy.

To know and study the teachers' attitude towards science and its pedagogy, interview schedule was employed or used, answers of the teachers were analyzed on the following parameters:

- Teacher's Understanding of Science as a subject.
- Teacher's awareness about the themes prescribed in NCF 2005 and different pedagogical practices they know.
- Teacher's understanding about the integrated approach of science textbooks at primary level.
- Teacher's meaning of a problematic situation in a Science Classroom.
- Teacher's approach towards Motivating the child to pursue sciences.
- Teacher's views on workshops and seminars conducted to enhance pedagogical practices.

All these parameters are in some way or the other connected to each other. And all of them point in a single direction that many things need to be revisited and need to be thought through. We cannot put the entire blame on the teachers and we cannot put blame on policy makers either. But the researcher observed that the primary class teachers were facing problem in handling the class due to which they were not able to use different pedagogical practices in the class.

On the other hand teachers of elementary classes also face problem in handling the class so mostly first the use deductive approach for teaching and then give students chance to learn on their own through experiments and hands on activity.

Objective 3: To identify gap between theory and practice methodologies of teaching science.

By analysis of objective **a** and**b** through questionnaire and interview schedule, we can easily see the gap.

Firstly, most of the teachers do have knowledge of pedagogical practices and are aware about different recommendations present in NCF 2005. Only very few were unaware of some of the recommendations.

Secondly, teachers still view science as one of the difficult but important school subject because it can be used as a great career option later in life. They do very less to motivate students and to develop interest in the subject.

Another gap is that most of the teachers try to adopt maximum pedagogical practices in her science classroom, there were some external factors that hampered the classroom learning for example some teachers were forced to complete the syllabus on time and some other were facing problem in handling the class due to large number of students in one class only. So the find little tough to practice much pedagogical practices. The issue of student-teacher ratio was faced by many teachers, especially primary class teachers, because handling primary students is much difficult than the elementary students.

Conclusion

In conclusion, there is a huge gap between how things are on papers and how things are actually received by the children. Amendments are required not only at the level of school curriculum, but also at the level of teacher education and the agencies providing teacher education should be under watch because this is what is leading to debarred

growth in the field of education, despite of having a strong and intellectual theoretical basis. Proper time should be given to the teaching –learning process, teachers must not be forced to only complete the syllabus, schools and teachers must reflect upon the students learning and also reflect upon the teaching methods and student-teacher ratio must be proper so that effective learning could take place in science classroom.

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INDIAN BRAND WITH AN INTERNATIONAL IMAGE: CURRENT TRENDS IN TERMS OF VISUAL COMMUNICATION

Ms.Himani
Assistant Professor
Research Scholar, School of Performing and Visual Arts
IGNOU, New Delhi

Abstract

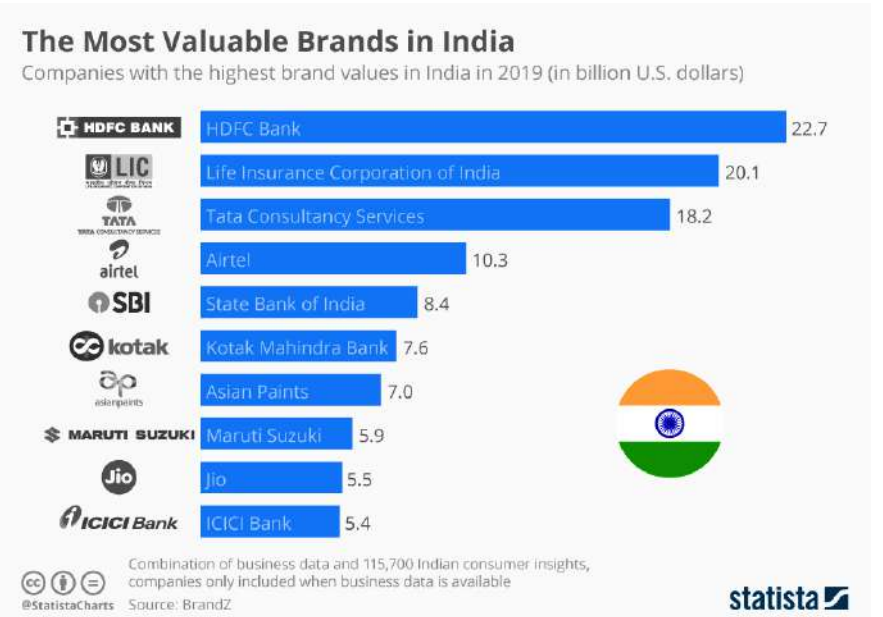
The purpose of this study was to explore the continuously growing Indian Brand Industry with the International Market Image. Case study of a national brand with an international image will explain the research in detail. The research shows consumers every day positive and significant experience with national/international Brands, how a brand affect consumers in general life and the impact factor of a particular Indian brand with an international image in continuously growing industry of multiple brands. This research explains the development and success of an Indian Brand trending in the International Market with that particular fine international Image. The research suggests the industry to enhance consumer experience by implementing experiential marketing strategy and more study of the Unique Selling Point (USP) of the international stylization in coordination to the Indian base of brand side itself, which refers to the high value of product, service and visual communication of the brand. This descriptive and conceptual paper looks at the ingredients of an Indian brand and how it emerged through times with that international image. This paper also analyses the Indian Brand market Scenario in India, and explains how the Indian Brand Market is yet to achieve its boom.

Keywords: Indian Brand, Luxury Brand, Indian Brand Market, International Image, Case Study of an Indian Brand.

Introduction:

The top brands in India are ones that have a fairly long history of operation in India and a record of doing so with a commendable amount of success. These companies are also the brand leaders in their respective segments. Companies like Tata and Amul have been established names in the Indian market as well as the psyche of the Indian consumers thanks to the overall quality of their services and other aspects of their business operations. Here are few brands with the highest brand value in India, showing the 75 most valuable brands in India.HDFC came out on top with a brand value of $22.7 billion and was one of four banks ranked among the top 10. According to the report by statista, phone maker Jio was the brand which most improved its standing, growing its value by 34 percent. This led to the company climbing one rank into position 9, overtaking ICICI Bank. Other brands that improved their ranking were Infosys (29 percent value growth) and Maggi (24 percent value growth). Newcomers to this year's ranking were hotel chain Oyo in rank 30 with a brand valued at just over $2 billion as

well as food deliverers Swiggy (rank 39, $1.6 billion) and Zomato (rank 61, $1 billion). The new generation of Indian startups were no match yet for more established brands, with consumer technology and retail companies making up only 5 percent each of the ranking.



Making a brand name popular is no easy feat. It requires a great deal of vision, marketing acumen and near to perfection execution of strategies to achieve such targets.With a population of over a billion and growing, India still remains a big consumption story that's attracting every prominent multinational to either expand its presence here or set up shop if it didn't have a presence.Some of the Indian companies, however, are busy expanding their global footprints. They are going abroad to secure natural assets (such as mines or oil fields) or intellectual ones (intellectual properties) or because their major markets are located in other parts of the world. This expansion has created multinational giants from India that are as global as any of their counterparts. To find the most internationalised Indian companies, Indian School of Business (ISB) along with Brazil's Fundacao Dom Cabral did a survey based on Tran's nationality Index (TNI) that was developed by the United Nations Conference on Trade and Development (UNCTAD).The TNI helps to measure internationalisation of a company. The top 15 transnational companies earned 75 per cent of their total revenues from international operations, held 57 percent of their total assets overseas, and employed 20 per cent of their overall workforce abroad.

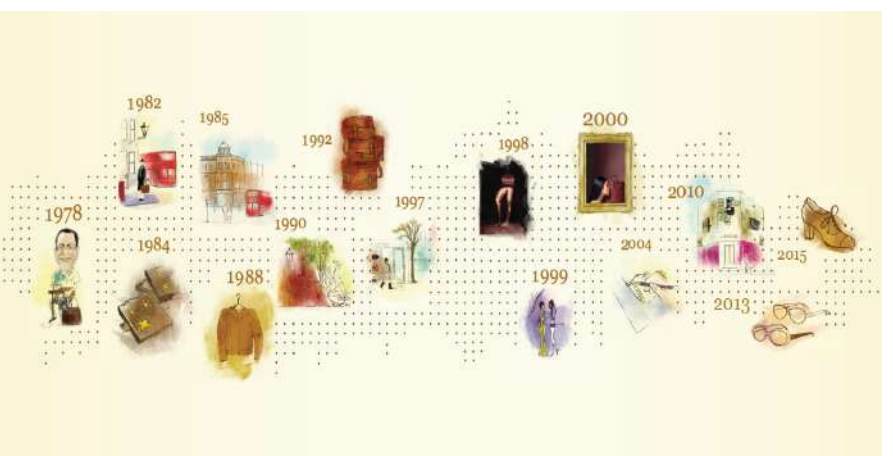
Indians, usually have a belief that overseas brands offer more value for money when compared to their Indian counterparts. But at the same time, it is important to note that

there are countless Indian origin brands out there that offer significant global competition to foreign brands. This even includes some Indian Start-ups that have gone on to disrupt markets in countless countries.To add to that, millennial professionals and entrepreneurs returning to the homeland after living the 'western' dream, have begun to find meaning in the uniqueness of their roots. The rise of the Indian Swag - the proud expression of all things Indian, is finding a new form of expression that celebrates the vibrant and aesthetic heritage of the country.

Case Study of Hi-design: Defining an Indian Brand and Litreature

Our very own National Brand with a fine International Image in Luxury Brand Segment.Founded in 1978 as a two man workshop, Hidesign has grown into a global brand recognized for its quality, ecological values and personalized service. Hidesign has grown from its artisan roots to an international brand with over 60 exclusive retail stores and a distribution network across more than 20 countries.

Hidesign is a leather goods manufacturer based in Pondicherry, India. In 2018, the company had operations in 24 countries including USA, UK, Australia, Kenya, UAE, Spain, Portugal, New Zealand and Sri Lanka. The leather goods segment of Hidesign contributes to 160 crore of revenue.Hidesign has grown into a global brand recognized for its quality, ecological values and personalized service. By keeping its focus on a classic contemporary look, Hidesign caters to the savvy and sophisticated urban professional. The leather collection includes handbags, clutches, briefcases, laptop cases, wallets, belts and garments. It can be found at premium international outlets, including John Lewis and House of Fraser in the UK, Myers and David Jones in Australia, Stuttafords and Edgars in South Africa, Lifestyle and Shoppers Stop in India and Parkson, Robinsons and Isetan in Southeast Asia.



Picture Credit: Hidesign

Development of the Brand:

Hidesign started in 1978, as a hobby by DilipKapur on his return to India after his Ph.D. in International Affairs in the United States. The first few bags were different compared to anything being manufactured in Europe and America at that time. From small alternative shops in San Francisco and London, the bags moved to the first adventurous department stores in the early 1990s in London, California and Australia. Hidesign launched its first exclusive boutique in India in 1998 and has quickly grown to 84 exclusive stores and a distribution network in 23 countries that has placed its product in over 2000 stores across the globe.Hidesign stands out for the sensuous naturalness of its high quality leathers and the smooth soft glow of its solid brass fittings in the leather goods it handcrafts.The name Hidesign was formed by merging the words “Hide” and “Design”. The brand was promoted worldwide in fashion magazines and in trade journals. In 1980’s Hidesign entered UK through a local distributor. In 2002-03 the brand went for the expansion in India. The brand promoted their leather bags in different special occasions and several promotional campaigns.

Struggle, Survival and Success:

The brand has a wide product folio. The brand targets the segments rather than masses. They have the most expensive leather bags in India which makes it an upper class Brand. Initial challenges Hidesign faced was its “High Price”. It was perceived as boring rather than cool product in Indian Market. Apart of several challenges Hidesign kept growing in the Industry with its multiple Unique Selling Pointsi.e. Craftsmanship (brand still uses the traditional craftsmanship and 70% work is done by hand), Hide’s they use are completely handpainted, it does not cover its leather with layers of pigments and paint or emboss it with artificial patterns to hide defects as in low quality materials. Nor does Hidesign use electroplated steel or zinc fittings. It is ecological, and believes in the highest ecological values.

With strengths like Global Presence, Quality leather and First one to introduce luxury retailing in India in terms of Leather Products, Hidesign maintained its high end value in Indian Brand Industry. Their Success Key Factors Includes the distinctive design, promotional campaigns and effective distribution channel like westside, shoppers stop.Hidesign believes in being artisanal: at the brand’s atelier there is no mass production, no assembly line. Hidesignproducts are all handcrafted using leathers that come from the brand’s own tanneries, brass buckles that are exclusively sand casted and polished painstakingly by hand at Hidesign’s own brass forge. The craftsmen still knot every stitch ending by hand, and Hidesign cutters still cut leather with fine pointed knives, a skill that takes two years to master. With an average work experience at Hidesign of over 17 years, the brand have one of the most skilled teams of craftsmen in the leather goods industry in the world.As a policy the companyalso repairs the product sold by them irrespective of the age of the product giving the customers alife time after sales support.These processes enable the company to makeproducts that are rich in character, texture and individuality. Also in order to ensure high level ofquality and to support online quality checks, the company follows a system of ‘route card’

whichrecords that who did the cutting, the stitching, and the supervision as well as on which date theseactivities were carried out.

The recent book on luxe market written by Glyn Atwal, Soumya Jain (2012) "The Luxury Market in India: Maharajas to Masse" provides strategies to guide brands entering this high-potential market and capture the luxury rupee. "The Cult of the Luxury Brand: Inside Asia's Love Affair with Luxury" by Radha Chadha andPaul Husband explore how and why an amazing "luxeplosion" is rocking Asia, sweeping up not just the glitzyupper crust, but secretaries toting their Burberry bags, junior executives sporting Rolex watches, and university students in Ferragamo shoes. Hong Kong boasts more Gucci and Hermes stores than New York or Paris. India,the new kid on the luxury block, with the Brand's like Hidesign is now proudly standing with these best brands of the world or one can say the best luxury brands around the world.

Future of the brand:

Forty years on, while global ambitions are still intact, Hidesign thinks India is where the real action will be when it comes to the future. But the Indian market poses its own set of challenges.Hidesign manufactures and markets leather products such as handbags, briefcases, laptop bags, travel bags, wallets, and accessories. More recently it has added shoes and sunglasses to its portfolio. As of 2018, it has five manufacturing facilities – one in Sikkim, another at Baddi in Himachal Pradesh, two in Puducherry, and one tannery in Chennai.The reputation of the brand in some sense is more in proportion to the sales that the brand had generated.

Indians are moving from a saving and necessity driven living to a far more indulgent lifestyle. Theresult has been the birth of an era of consumption. Also,cashing in on this "indulgent living" and "status based needs" areinternational brands that have entered the country. Iconic brands like Gucci, Aldo, and Louie Vuittonetc have make a place in the Indian market with promising growth figures and there are still more International players looking to seize the opportunity in the coming years.Hidesign is going to focus on the domestic market in future with maximizing opportunities at Airports. The brand is also looking forward for relationship marketing in India and Overseas.

Revenue growth

Hidesign's revenue in India has grown from ₹11.3 crore in the year ended March 31, 2010, to ₹160 crore in the year ended March 31, 2018. Indian consumers made up 75-80 per cent of Hidesign's customer base. Though it started out as a men's brand, women (aged 25-30 years) came to be recognised as a key target segment for Hidesign. Women account for 65 per cent of the footfall in Hidesign stores and 80 per cent in e-commerce, accounting for 55 per cent of the sales. This is also a segment that is not easy to satisfy; competition in the men's segment is less.WhileHidesign has a robust internationalisation strategy, Hidesign is to grow at a faster rate in international markets, it would have to do things that could result in diluting the brand, such as compete on price.

Major Plans

The Brand do not really want it to be a product with just distributor in between, it really want the customer to know Hidesign – as a brand and be in touch with the consumer directly. The Indian consumer will be around 75-80% of its customer base. Hidesign have 84 stores and in near future, they are getting another 12.In the second year of its operations, the company expects to double growth on the back of further increases in sales as it expands its footprint and brings in additional product categories.The company plans to make more investments as it undertakes expansion of the brand in the International market.

Objective of the paper:

This paper covers the following objectives:

- To determine the concept of an Indian Brand with An International Image.
- To determine the effect of an Indian brand in international brand trends.
- To study how a brand communicate visually.
- To explain how the Indian Brand Market is on the verge to achieve its boom.

Research Method:

The vicinity of study is of conceptual nature making use of secondary data. The key objective of thisresearch is to connect the gap between an Indian Brand and the International trends. The paperis of descriptive nature. It is to provide answers to the questions of who, what, when, where, and how associatedwith the research problem of the Indian Brand Market; a descriptive study cannot conclusively ascertain answers towhy. Descriptive research is used to obtain information concerning the current status of the phenomena and todescribe "what exists" with respect to variables or conditions in a situation. This study will rely primarily ondeductive reasoning. The paper is oriented towards describing the concept of International Image of an Indian Brand. The entire paper is to deal with the market in Indian perspective.

The significant data is collected from various sources: Bulletins of Reserve Bank of India, publicationsfrom Ministry of Commerce(Govt. of India), The Changing Face of luxury in India 2013(CII-IMRB report),newspapers(Times of India, The Business Line, The Economic Times etc) has also been included. Several websites like also plays a role in data collection. The data collectedfrom sources is evaluated to find out the inferences for further suggestions and recommendations.

Suggestion and Conclusion: The Road Ahead

Consumers can “need”,“obsessed” and “own” on an item. The simple reason to hunt for the name andspend irrationally is the brand itself. While they value and buy international brand offerings, none candeny the widespread appreciation of Indian roots and culture. From Kashmir to Kannyakumari, ample numberof cultures and traditions are in the queue. None of them have uniform definition of luxury. Every royal familyhad their own craftsman so as to have their status held high. It is almost impossible to think of that consumptionpattern today. As far as India is

concerned,Consumers are sharing their preferences through the actions they take. India hasbeen dealing in International market since ages, from supply side as well as from demand side and even to add more wedo have foreign brands to avoid the consumers travel abroad.

Adding to that we have some Indian Brands with International Image which can stand proudly in International Market and compete the International Brands. The brands and retailers that have mastered theirfields are moving on to more innovative approaches such as price, promotion, location-based service,customized services etc. After all, it is more than a product – it is about storytelling.Primarily, marketers do analyse how a product fits to be a long-term strategy. The product should notbe a one-time deal. Then, the product should meet a specific goal. Word of mouth is imperative to International Brand Image.

A large number of consumers in India are lured into experiencing the brand being influenced by the peers. The strength of the chain is known by the weakest link and this is the reason why perfection needs toperfect. It calls for a 360-degree tailored approach to serve the client. Despite its mass-reach, out-of-homeadvertising must be targeted to the affluent audience. Large-scale out-of-home efforts need to tap what consumers are craving: status, exclusivity, high-design and pleasure. The two most tedious issues regarding the Indian Brands are: defining it and advertising it. The target clientele is extremely differing fromthe normal good. So every step has to be equally different and cautious. The Indian Brand Industry The luxury industry is expected dobetter in near future along with the economy, and customers will be spending more for their very own Indian Brand with the international flavour.

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A STUDY ON THE EFFECT OF SOME MACROECONOMIC FACTORS NAMELY BULLION PRICE (LBMA), CRUDE OIL PRICE (WTI), FOREIGN EXCHANGE RATE, USAGNI PER CAPITA AND THE GDP OF USA ON THE EXPORT MARKET OF RMG SECTOR OF INDIA

[1]Ms. Radhika Agarwal and [2]Dr.Sougata Banerjee
[1]Masters of Fashion Management (2019-2021)
[2]Associate Professor, Department of Fashion Management Studies
National Institute of Fashion Technology, Ministry of Textiles, Govt. of India., Block-LA, Plot 3B, Sector-III, Salt Lake City, Kolkata, WB. India

Abstract

In this research study an attempt has been made to identify the impact of certain macroeconomic international factors namely Bullion Price (London Bullion Market Association), Crude Oil Price (West Texas Intermediate), Foreign Exchange Rate, US GNI per capita and the GDP of US on the Export Market of Ready Made Garments (RMG) sector of India for the period of 13 financial years (FY 2006-07 – FY 2018-19) through multiple and linear regression. USA imports the largest value of RMG from India, so USA was taken as representative State of RMG Importing countries from India. GNI per capita of USA turned out to be the most significant predictor in multiple regression. Further to understand the trend and to forecast the value for all the six variables (independent and dependent) time series analysis was applied. Actual data of some of the variables of FY 2019-20 was compared with the forecasted value and it was found that the actual values fall in the forecasted range apart from this fit of the forecasted model is also been found good. Value of RMG Export, Forex Rate (US$ to INR) and GDP of USA have been forecasted with inclining value while GNI per capita and Bullion Rate have been forecasted to have declining trend. Crude Oil Rate is going to have a stagnant value as per the forecast.

Keywords: RMG, Export, Macroeconomic Factors, Regression, Time Series Analysis.

Background Study

The Indian Textile Industry is one of the largest and a significant sector of economy of India in terms of domestic share as well as the exports, contributing around 7% to the industry output, 2% share to the Gross Domestic Product (GDP) and around 15% towards the export share/foreign exchange earnings of the country(Indian RMG Industry, 2019). The Ready Made Garments (RMG) sector is the largest sector of the Indian textile industry (50% of textile industry) which emerged because of a highly profitable export market.India being heavily engaged in export of garments to the international markets has its major RMG export destinations as United States, United Arab Emirates, China, United Kingdom and Bangladesh as per financial year 2018-19(Indian Ready Made Garments-Industry Overview, 2019).Industrialization is a boon for the RMG sector for this sector has the capability to blend with the changing trends in the market as well as the ever changing demand of the people through innovation, thereby making it self-dependent(Ramanathan & Prasad, 2014).The textile items exported by India during FY 17 was worth US$ 36.6 billion of which RMG exports accounted for 47.7% and reached US$ 17.5 billion(Textiles and Apparel, 2018).While there was a marginal growth of 2.4% in RMG exports in the year 2017, it saw a negative growth rate of 3.8%in the year 2018. This was because the competitiveness of the Indian players reduced after GST came into picture. Also there was a fall

inIndia's garment exports as it faced severe competition from countries like Bangladesh, Sri Lanka, etc. which enjoyed low cost of production and duty access in major markets(Indian RMG Industry, 2019). As of now, RMG exports from India stood at US $ 10.03 billion as per April-November'2019. Being one of the significant sectors for Indian export market, the RMG sector may be affected by some macroeconomic international factors. India's export to the US Market is the highest in the RMG sector (DGCI&S, India's RMG Exports to World - Country Wise (Top 10), 2016)that's why as a country USA was chosen for the study as a representative State highest of importing countries of RMG export.

The role of international trade is significant for the economic development of a country. India, being a developing economy, brings a long lasting ramification from international trade on country's economic health and is considered as the most significant foreign trade market having a large export and import industrial base. The trade history between India and USA is remarkable in all terms and different commodities which the country exports. In respect to Indian exports, USA holds a share of 30.54% of total garments and accounts for 29.84% in knitwear exports and 31.07% in woven garments exports as per 2015-16 annual report(Roy, 2009). Nearly 100 countries have good trading relations with USA of which India plays a significant role, exporting more than 200 RMG items to USA(Rakwal, 2016).

(Aziz, 2011)conducted the study which revealed that India's RMG sector is rich in low cost skilled and unskilled labour and skills, value additions and the operational flexibility giving greater global market access. However, this sector, despite being confident of its potential noticed a critical decline because of the recession and economic slowdown in countries like US and Europe which had caused the demand for global markets to decrease and also resulted in liquidity crashes as an effect of hike in prices of cotton, rupee appreciation and an increase in the cost of wages.The study (Ramanathan & Prasad, 2014) observed that the readymade garment export business of India has been witnessing increase in number of foreign buyers for which garment manufacturers should continuously ensure quality of finished products and try to attract buyers by introducing variations in designs.

Bullion or Gold market is where the precious metals like gold and silver are traded by the trader which is considered safe to reduce inflation or to use as an investment. The gold rates are regularly traded off in the market. Many bullion markets exist around the globe but the largest one is the London Bullion Market Association (LBMA) while others are considered as over-the-counter (OTC) markets. The financial year 2018-19 noticed the fall in the value of globally exported gold by -3.2%. Today the forex and gold markets are being integrated as one of the important players of these markets is the bank(Sarker & Ghosh, 2007).The selection of this factor to study its effect on the RMG exports of India due to the fact that the movements and fluctuations in the gold prices are interesting and significant from the point of view of economic and financial aspects. Also the gold prices are carefully and regularly monitored by the international markets and its position is evaluated(Ahmed, Muhammad, & Farjad, 2017).

The demand and the availability of the gold determine its rate in the market. Gold has been traded as opposed to Dollar since history. Dollar backed commodities such as gold is influenced by a stronger dollar which makes the gold expensive to buy in other currencies, further reducing its demand. As dollar is widely accepted as a global trading currency, the fluctuations in gold rate have always been influenced by the dollar. A decrease in dollar value will result in an increase in prices of gold (Rani & Vijayalakshmi, 2014).

In this researchan attempt was made to develop a prediction equation through multiple linear regression that will allow the estimation of the value of the dependent variable based on the knowledge of multiple independent variables. As a dependent variable RMG Exports to USA for 13 years were taken from 2006 to 2018 and as independent variables, Bullion (Gold) Market (LBMA) Rate, Crude Oil Price (WTI), Forex Rate (US $ Price w.r.t INR), US GNI per capita and US GDP were taken as macroeconomic factors. The *aim* of the study was to detect whether the

particular independent variables affect the dependent variable at all and if so, to estimate the magnitude of this effect. An effort was also made to forecast the value dependent and independent variables till 2022 through time series analysis and to establish a reliable predicting model.

Literature Review

Crude Oil

The impact of the oil on the growth of the exports is very evident. It makes trade accounts of India vulnerable to fluctuations in international prices.Being the largest component of Import Bill of India, an increase in the prices of oil will lead to a fall in the foreign reserves of the economy which will have an impact on the purchasing power of the economy with respect to global trade(Ganesh & Soundarapandiyan, 2017). There is a possibility of major shifts in price, mainly for economies exercising monopoly.The policies are not appropriate enough to deal with the influence of oil prices around the world for which it is important for Governments to look into the short-term as well as the long-term volatility/fluctuations of oil market(Ahmed, Muhammad, & Farjad, 2017).The study (Hsu & Chen, 2012) revealed that when there are significant fluctuations in oil prices, there will be a fall in the global trade which will reverse globalization.

Forex

Apart from factors such as bullion rate and crude oil price, the foreign exchange rate is one major factor determining the relative health of the country's economy, thereby playing a significant role in the trade level of a country. Thus, the exchange rates are the most viewed and analysed and are subject to manipulation by the economic reforms/measures of the government. With an increase in the amount of trade volume, the forex market has witnessed a significant position(Ahmed, Muhammad, & Farjad, 2017). The RMG sector has also seen a fall in its growth as it is one area where exchange rate matters.

(Shimu & Islam, 2015)in their study on the effect of macroeconomic factors on the export market growth of RMG sector of Bangladesh found out that the positive growth of exchange rate, inflation rate, real interest rate, and female unemployment rate is negatively related to the growth of RMG export which reveals that the positive growth of RMG exports in the global apparel market has a strong support by the macroeconomic stability of the country.

The study (Kaur, 2009)found out that Exchange Rate, Real Effective Exchange Rate and Relative Export prices significantly impacted the export competitiveness of many manufactured export sectors. The study (Oskoo, 1991) indicated that the trade balance and the real effective exchange rate were cointegrated in the long run for few Less Developed Countries (LDCs).

GNI per capita

Per capita GNI or per capita income is the dollar value of Gross National Income (GNI)/ country's income in a year divided by the population(Venkatraghvan, 2012). The per capita income of United States (US) has been considered for the study. A growth in per capita income indicates improvements in standards of living of the economy as a whole(Raut, 1990).Currently, the per capita income of US stood at US $63,170 in 2018, with an increase by 6.96% from 2017(U.S. GNI Per Capita 1962-2020).

According to the study of (Flach & Janeba, 2017)to examine the relationship between the income inequality in destination country and export prices and trade trends revealed that inequality in income distribution results in an increase in average prices. The strength of the effect of high prices in unequal destinations is based on per capita income.The study of (Tarasov, 2012)established a model indicating a relationship between trade costs and the development levels of countries that includes the impact of per capita income on trade volume which found out that the costs of market access is significant to fit model to data. The study (Slaughter, 1997)indicated that trade plays a role to cause convergence of per capita income for the countries which are linked by trade.The study (Blejer & Mario I. , 1978) found out that with the increase in per capita

income, the goods that are labour and natural resources intensive are replaced by human and physical capital intensive goods and goods having low elasticity of income are replaced with ones having high income elasticity.

The study (Flach & Janeba, 2017)predicts that a more unequal income distribution in a destination country leads to higher average prices, though the effect is nonlinear and disappears for rich enough countries. Controlling for income per capita, prices are systematically higher in more unequal destinations, and the strength of this effect depends on income per capita. In the study of (Tarasov, 2012) it was found out that there is strong empirical evidence that countries with lower per capita income tend to have smaller trade volumes even after controlling for aggregate income.The study of (Slaughter, 1997)provides interesting insights to indicate that trade might have helped in causing convergence of per capita income. For countries which are both somehow linked by trade and converging, trade helps cause the convergence.

The last factor taken into consideration is the Gross Domestic Product (GDP) which is the total value of all finished goods and services in monetary terms that have been produced within an economy during a given time period(Smith, 2020). For this study, the GDP of US has been taken into consideration as it is the most widely accepted measure globally to assess the overall size of the country and its economic performance(Capelli & Vaggi, 2013).GDP for US relates to the dollar value for all goods and services purchased which includes private, non-profit as well as government sectors.A rise in GDP indicates strength of the economy while a fall in GDP points towards the weakness of the economy(Smith, 2020). It is a significant indicator of a country's economic health (Sarokin, 2019).Currently US rank first in terms of highest GDP than other countries(U.S. GDP 1947-2020).

(Ganesh & Soundarapandiyan, 2017)in their study analysed the effect of crude oil price on the economy of India with respect to GDP and the Consumer Price Index (CPI) which found out that there is an increased dependence on the oil imports by India, not only affecting the Indian economy as a result of increased inflation, decline in exports and investments and a fall in GDP but also causing fluctuations in oil price in the global market. It revealed that as a result of increase in CPI, the crude oil price falls and vice versa and a significant difference between crude oil price and GDP but no significant difference between CPI and GDP was observed.

The study (Sharma & Dhiman, 2016)found out that there exists a favourable relationship between the factors- GDP, exchange rate, labour, FDI & technology factors and the textile exports where rise in costs of labour lead to fall in exports while depreciating value of Indian Rupee increased the performance of exports. Other factors too indicated a significant influence on the Indian textile exports.

The study (Jayachandran, 2013)found out that the exchange rate negatively impacts real exports imports which will decrease India's real exports due to rise in fluctuations in exchange rate. Also, in long run, GDP positively impacts real exports of India while the effect becomes insignificant in the short run.According to the study (Chan, Au, & Sarkar, 2008) the factors which significantly impacts the textile exports of India are Gross Domestic Product (GDP), real exchange rate, per capita GDP and population growth rate of the importers.The study of (Sarker & Ghosh, 2007) conducted to examine the efficiency of Indian stock market, foreign exchange market as well as the gold or bullion market revealed that the silver market was the most efficient followed by the security and the foreign exchange markets. Also gold was found to have the least degree of efficiency than the other markets.

The study of(Lizardo & Mollick, 2010)found out that prices of oil have significant influence on the movements of USD Dollar against major currencies. A rise in real oil prices results in depreciating USD against net oil exporter currencies while oil importers currencies depreciates relative to USD.The study(Bhutt, Rehman, & Rehman, 2014) revealed that there exists a significant inverse relationship between the rate of exchange and exports where an increase in value of exports will result in an increase in the demand for Pak rupee, leading to its appreciation

against USD in the long run.The results of the study of (Arfaoui & Ben Rejeb, 2017)revealed that the oil and USD price were negatively related to stock prices but gold and USD critically affected the oil price. The gold price was respect to changes to oil and stock prices and the USD while the oil and gold prices significantly affected the USD.

Objective of the study:

The objectives of the research paper are:

- To study the effect of macroeconomic international factors: Bullion Price (London Bullion Market Association-LBMA), Crude Oil Price (West Texas Intermediate), Foreign Exchange Rate (USD price in terms of INR), GNI per capita and the GDP of US on the export market of Ready Made Garments (RMG) sector of India for a period of 13 years (2006-18) through multiple regression.
- To forecast the future trends of RMG exports of India and other variables on the basis of past data, for a period of 2019 to 2022 and to forecast the predicted value for all the dependent and independent variables through time series analysis.

Research Methodology:

This study is of quantitative nature.Quantitative research is concerned with studies using statistical tools and analysis to collect findings (Marczyk, DeMatteo, & Festinger, 2005).Within quantitative research, this research is a causal-comparative research. This method of quantitative research is based on identifying the cause and effect relationship among the dependent and independent variables.This study is based on the causal research design. A causal research method, also known as explanatory research, identifies the cause and effect relationship between two variables(Bhasin, 2020). This research design has been used in this study to understand the variations that take place in independent variables which causes changes in dependent variable.

The variable which is being predicted and tested is termed as a dependent variable and the variables which are believed to affect the dependent variable are termed as Independent Variables(Foley, 2018). In this study, The RMG Exports of India is the dependent variable and all the global macroeconomic factors- Bullion Price, Crude Oil Price, Foreign Exchange Rate of US Dollar w.r.t INR, Per Capita Income of US and GDP of US are the independent variables.

This research is entirely based on the use of secondary data only. The data and the literature for the research were collected from reliable secondary data sources (Muhammad & Kabir, 2016). The data in this research has been collected from various published research papers, annual reports of Apparel Export Promotion Council (AEPC), government websites, reputed journals and books.

- The export data of Ready Made Garments (RMG) sector of India has been extracted from Government of India websites for study.
- The factors chosen for the study are Bullion Price (London Bullion Market Association-LBMA), Crude Oil Price (West Texas Intermediate), Foreign Exchange Rate (USD price in terms of INR), GNI per capita and the GDP of US.
- The Price of Gold is considered based on the London Bullion Market because it is by far the primary and the largest traded market globally(What is a bullion market?, 2017).
- The factors- GNI per capita and GDP for US were chosen because the India's total RMG Export is highest for USA as on Jan-Dec 2018 and Jan-Dec 2019(Update on India's Export Trend, 2020).
- For the study, Real GDP of USA has been taken into consideration and not the Nominal GDP. The total market value of final output of the economy refers to the Nominal GDP which is unadjusted for inflation while Real GDP is nominal GDP, adjusted for inflation, depicting changes in real output(Comparing Real and Nominal GDP).

- The data for the RMG exports of India and for all the international macroeconomic factors except GNI per capita and the GDP has been taken for a period of 13 financial years from FY 2006-07 to FY 2018-19.
- For the factors, namely Per capita income and the GDP of USA, the data collected is in calendar year from 2006 to 2018.
- The closing prices of each month in a financial year of variables (Bullion, Crude Oil and Foreign Exchange) were extracted and the average price was calculated for that financial year for 13 years from 2006-07 to 2018-19.
- As per data availability, the data for FY 2019-20 was not taken for analysis because the researchers wanted to tally it with the predicted data to prove that the forecasted data lies within the range.
- The value of the data for all the variables is expressed in terms of US $ apart from UD $ Exchange rate which has been expressed in Indian National Rupee (INR)
- While the study was done during Covid-19 pandemic and so the effect of COVID-19 Lockdown on the economy was not taken into consideration.
- The data was taken from FY 2006-07 onwards because of the Multifiber Arrangement (MFA) which imposed a ceiling on the exports till 2004. MFA was an agreement of global trade on textiles and garments, imposing a ceiling on the amount of textile exports that developing countries could export to developed countries (Kenton, 2019).
- The data for India's RMG exports for 13 financial years was extracted from the Annual Reports of Apparel Export Promotion Council (AEPC) for different years- (Annual Report 2018-19), (Annual Report 2017-18) and (Annual Report 2014-15).
- The data for all the independent variables was extracted from various websites. The data for Bullion and Crude Oil prices were extracted from the (Indexmundi). The Foreign exchange rates for USD in terms of INR was extracted from the (USD/INR)while the data for GNI per capita of USA and USA GDP were extracted from (Macrotrends Web site) and (Amadeo, 2020) respectively.

Data Analysis Tools*:*

- RMG Exports was considered as the dependent variable (X) and the other macroeconomic variables were taken as the independent variables (Y_i) and Multiple Regression Analysis has been done for the research study. Multiple regression analysis is a strong statistical tool to analyse the relationship between two or more independent variables and the dependent variable(Anderson, Business Statistics for dummies, 2015).
  Multiple Regression Equation: $y = b_1x_1 + b_2x_2 + \ldots + b_ix_i + c$
  Where, 'y' is the dependent variable, 'x' is the independent variable, 'b' is the slope of the line and 'c' is the y-intercept.
- Time Series Analysis has also been carried out in the research to forecast the future trends. Time Series Analysis is a statistical tool that uses the data in series of time periods to forecast the future trend based on past year trends (Brockwell, Davis, & Fienberg, 1991).
- To analyse the data, SPSS 16 and Microsoft Excel was used.

Findings &Analysis

Multiple Regression Analysis

Regression analysis is used in order to fit a linear model to the data and to predict the values of an outcome variable (dependent variable) from one or more predictor variables (independent variables)(Field, 2017).Multiple regression analysis is a strong statistical tool to analyse the relationship between two or more independent variables and the dependent variable(Anderson, Business Statistics for dummies, 2015).There are 3 major objectives for using multiple linear

regression analysis. Firstly, in the study it has been used to identify the strength of the effect that the independent variables have on a dependent variable. Secondly, it has been used to forecast effects or impacts of changesi.e., to understand how much will the dependent variable change when we the independent variables are changed. Thirdly, multiple linear regression analysis is used to predict the trends and future valuesand is used to get point estimates(What is Multiple Linear Regression?).

Multiple Regression model has been used by taking RMG Exports of India as Dependent variable and Bullion Rate, Crude Oil Price, Forex of US$ with INR, USA GNI per capita and USA GDP as Independent variables for 13 Financial Years from FY 2006-07 to 2018-19 to identify the impact these independent variables will have on the RMG Exports. Multiple Regression coefficients estimate the independent variables and explain the relationship that exists among the predictor variables with the dependent variable. In linear regression, coefficients predict the values that explain the dependent variable.

For the Multiple Regression analysis initially all the independent and dependent variables were taken in the SPSS software using enter method. Enter method is a default method in SPSS which uses all the entered or specified explanatory variables even if there is no statistical significance among them(Tranmer, Murphy, Elliot, & Pampaka, 2020).This method is useful when a small set of predictors are dealt with and when the researcher is not sure of the independent variables that will create the best prediction equation (Selection Process for Multiple Regression).

Table: 1: Correlations

		RMG exports	Bullion	Crude Oil	Forex	USA GNI per capita	USA GDP
Pearson Correlation	RMG exports	1.000	.549	-.407	.934	.971	.873
	Bullion	.549	1.000	.283	.410	.458	.332
	Crude Oil	-.407	.283	1.000	-.523	-.483	-.575
	Forex	.934	.410	-.523	1.000	.958	.933
	USA GNI per capita	.971	.458	-.483	.958	1.000	.919
	USA GDP	.873	.332	-.575	.933	.919	1.000

A value more than 0.8 or 0.9 indicated a high correlation which requires excluding one or two variables from the data.According to (Tabachnick, 1996) the independent variables with a bivariate correlation more than 0.70 should not be included in multiple regression analysis. A correlation coefficient having an absolute value more than 0.9 indicates a very high and strong relation between variables (Ganti, 2020). This often requires excluding one or two highly correlated independent variables from the data.

In Table: 1, the correlation between GDP with Forex, GDP with GNI per Capita and Forex with GNI per capita was very high with a correlation value of 0.933, 0.919 and 0.958 respectively.Thus, for the study, the independent variables Forex and USA GDP were removed and further regression was carried out for the remaining independent variables- Bullion, Crude Oil and USA GNI per capita with the dependent variable. A strong correlation between these variables can be explained by the following:

- GDP is the standard measure of the country's economic size(Coyle, 2015). It is the widely used indicator of the economic value as it measures the production value of all residents(Capelli & Vaggi, 2013).It includes all the economy's final goods and services irrespective of its consumption by households, firms or government. It is used widely as a measure of economic activity(Stiglitz, Sen, & Fitoussi, 2008).A growth in per capita income

indicates improvements in standards of living of the economy as a whole(Raut, 1990).Both being economic indicators of a country, measures the economic growth of the country. Thus, there exists a high correlation among these variables.

- A high correlation in Forex can be supported by the fact that fluctuations in the forex rate do not affect RMG orders. This is because Forex as a rate contract protects the buyer from the fluctuations in the currency prices (Chen, 2019). This will enable the buyer to pay the exchange rate agreed on rather than the market value of exchange rate at that time (Delaney, 2019)

Table: 2: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.978[a]	.956	.942	741.78222	2.300
a. Predictors: (Constant), USA GNI per capita, Bullion, Crude Oil					
b. Dependent Variable: RMG exports					

The correlation coefficient squared or coefficient of determination, $R^2$is the measure of the amount of variability in one variable that is shared by theother(Field, 2017).The higher the value of R^2, the better the model fits the data(Ghani & Ahmad, 2010).An R^2value of 1 indicates that the regression predictions fit the data perfectly. As per Table:2, the value of $R^2$is 0.956 which is near to 1 and suggests that model fit is good. Therefore 95.6% of variation in the RMG Exports can be explained by Bullion Price, Crude Oil Price, and USA Per Capita Income.Adjusted R^2measures how much variance in the outcome can be accounted for. The higherthe value of adjusted R^2, the better the model fits the data(Ghani & Ahmad, 2010).Here the value of Adjusted R squared is 0.942.

Table: 3: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.085E8	3	3.616E7	65.717	.000[a]
	Residual	4952167.767	9	550240.863		
	Total	1.134E8	12			
a. Predictors: (Constant), USA GNI per capita, Bullion, Crude Oil						
b. Dependent Variable: RMG exports						

The ANOVA indicates if the overall model gives a significantly good degree of prediction of the outcome variable(Field, 2017).F measures the amount of variability which the model can explain relative to how much it can't explain, i.e. it is the ratio of how good the model is in comparison to how bad it is(Field, 2017).Table:3, shows that the independent variables statistically significantly predict the dependent variable, $F = 65.717$, $p < .001$ (i.e., the regression model is a good fit of the data). A significance level which is smaller than 0.05 or 0.01 (here, 0.000)having large F value (the F-value 65.717 is the Mean Square Regression divided by the Mean Square Residual) indicates that the results are not because of random chance. The significance level of Anova Statistics is 0.000, which is less than 0.05, so the null hypothesisi.e. $F \neq 0$ is rejected.Thus, F is desirable. Therefore the regression equation can be accepted(Banerjee, Datta, & Daga, 2018).The independent variables reliably predict the dependent variable.

Table:4: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-26433.098	4994.914		-5.292	.000	-37732.379	-15133.816					
	Bullion	1.407	1.043	.139	1.349	.210	-.953	3.766	.549	.410	.094	.458	2.183
	Crude Oil	-1.786	17.591	-.011	-.102	.921	-41.580	38.007	-.407	-.034	-.007	.445	2.248
	USA GNI per capita	.735	.092	.902	8.006	.000	.527	.942	.971	.936	.558	.382	2.618
a. Dependent Variable: RMG exports													

The coefficients table indicates the variables which significantly predicts the dependent variable individually(Hinton, McMurray, & Brownlow, 2014).The multiple regression equation takes the following form: $y = b_1x_1 + b_2x_2 + \ldots + b_nx_n + c$

where, b_i's (i=1,2…n) are the regression coefficients, which represent the value at which the criterion variable changes when the predictor variable changes and 'c' is the value of constant(Multiple Regression).So as per Table:4, the regression equation is:

RMG Exports = 0.139*Bullion + (-0.011)*Crude Oil + 0.902*USA GNI per Capita - 26433.098

Unstandardized coefficients indicate how much variability exists between the dependent variable and the independent variable when all other independent variables are held constant(Multiple regression using spss statistics). Although the *b*-values and their significance are statistically important, however their standardized versions, i.e. the *beta*-values are easier for interpretationas they are independent of the units of measurement of the variables(Field, 2017). So the concept of standardized coefficients comes into picture when the units of measurement of independent variables are different. They are used to eliminate the units in which the independent and dependent variables are expressed(Bhalla, 2015). Thus, in this study, since Forex is expressed in INR while other variables are in USD, standardized coefficients were taken into consideration for regression equation.The standardized *beta* values indicatethe change in outcome in terms of the number of standard deviations as a result of one standard deviation change in the predictor, thus giving a better insight of the predictor's significance in the model. Each ofthese values has an associated standard error which indicates the extent to which *beta*-values would vary for different samples and these standard errors indicates if the *b*-value differs significantly from zero or not(Field, 2017).

Also, looking at the significance level for each variable, USA GNI per capita with a p value of 0.000 is a significant predictor of RMG Exports because the value of $p < 0.05$ while other variables are less significant predictors of RMG Exports as the value of p is more than 0.05.

So, the most significant factor that influences the RMG Exports of India is GNI Per Capita of USA.The standardized coefficient of Bullion price is positive 0.139. It means that when there will be an increase in the international gold pricethe RMG Export of India to USA or RMG Import of USA from India may also increase. Increase of gold price indicates increase of investment in the gold market which further indicates that the economy has the money circulation and doing good. It can be logically deduced that if the purchasing power of the masses increases then the consumption increases and the import may also increase to fulfil the demand in the domestic market. Whereas, the Coefficient for Crude Oil Price is negative 0.011 which indicates that if the international crude oil price falls then the import of RMG of USA from India may increase. A drop in crude oil prices directly affects the prices of gasoline and petroleum, lowering the shipping or transportation costs (Beattie, 2020)which eventually leads to a fall in procurement cost. The logical interpretation of the prediction is that if the crude oil price falls then the transportation and shipping costs will reduce which will further reduce the procurement cost for the importing country as the exporters will also like to leverage the advantage to their clients. Similarly, USA GNI Per capita has a coefficient of positive 0.920.

An increase in the per capita income of US means that people of US will have more money to spend and higher purchasing power, which again may give rise to more impulse purchase. Their standard of living increases and they start spending more on RMG. This will lead to US importing RMG from India resulting in increase in India's RMG exports.

Next the researchers tried to attempt multiple Regression using step-wise method in order to verify further and tally the impact of the predictor variables on the dependent variable. Stepwise method is a method of adding predictor variables to the regression which best correlate with the dependent variable, and remove variables that least correlate(Hinton, McMurray, & Brownlow, 2014).A stepwise regression both adds and removes controlled variables as per requirement in each step(Ghani & Ahmad, 2010).This method helped the researchers to get an idea of what are the possible predictors. All the five independent variables were entered but apart from USA GNI Per Capita all the other variables were removed from analysis. According to Table:5, R^2 value of 0.943 and Adjusted R^2 Value of 0.937 was predicted which indicated a good fit for the linear regression model and further it indicated a standardized coefficient of 0.971 (refer Table:6) with a low significance p value of 0.000 indicating that the USA GNI Per Capita is the most significant predictor for the RMG Export of India to USA.Durbin-Watson Test was also run to test for autocorrelation in the residuals from the multiple analysis. AsValues from 0 to less than 2 indicate positive autocorrelation and in the study the value got is 1.749 so it can be interpreted that there is no autocorrelation.

Table: 5: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.971[a]	.943	.937	769.82748	1.749
a. Predictors: (Constant), USA GNI per capita					
b. Dependent Variable: RMG exports					

Table:6: Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	95% Confidence Interval for B	Correlations	Collinearity Statistics

		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-27833.068	3094.886		-8.993	.000	-34644.867	-21021.269					
	USA GNI per capita	.791	.059	.971	13.431	.000	.661	.920	.971	.971	.971	1.000	1.000
a. Dependent Variable: RMG exports													

Apart from this SimpleLinear Regression for each independent variable with dependent variable was done by the researchers to assess the prediction impact of the independent variables. According to Table: 7, USA GNI Per Capita was found as most important predictor with highest Standardised Coefficient of 0.971 with a R^2 Value of 0.943. An increase in the foreign exchange rate (appreciation of the dollar versus the rupee) will lead to fall in the relative price of Indian RMG. This means that the inputs being imported for production becomes cheaper(Habibi, 2019)causing a rise in external purchasing power. This will induce countries to procure more worth of RMG from India, resulting in demand for Indian RMG which will eventually cause a rise in India's exports of RMG.R^2 Value of Bullion Rate and Crude Oil came up to be too low, indicating the worst fit for the model.

Table:7: Simple Linear Regression

Variable Entered	*R^2*	*Adjusted R^2*	*Constant*	*Standardized Coefficients*	*Collinearity*	*Partial Correlation*
				Beta	*Eigen Value*	
Bullion	0.302	0.238	7037.146	0.549	1.971	0.549
Crude Oil	0.166	0.090	18721.929	-0.407	1.973	-0.407
Forex	0.873	0.861	-1918.285	0.934	1.985	0.934
USA GNI per Capita	0.943	0.937	-27833.068	0.971	1.998	0.971
USA GDP	0.762	0.741	-25417.219	0.873	1.998	0.873

a. All requested variables entered
b. Dependent variable: RMG exports

Eigenvalue is a measure which indicates the amount of variance by a proposed factor. Factors having an eigenvalue of 1 or more than 1 are considered to be significant for the study(Hinton, McMurray, & Brownlow, 2014).

Time Series Analysis

Time Series Analysis is a statistical tool that uses the data in series of time periods to forecast the future trend based on past year trends(Brockwell, Davis, & Fienberg, 1991).The process of Time

Series Modeler identifies exponential smoothing, univariate ARIMA and multivariate ARIMA models fortime series and provides forecasts(IBM SPSS Forecasting 25). Expert Modeler in SPSSidentifies and estimates the ARIMA or exponential smoothing model automatically that best fits the series with one or more than one dependent variables.This eliminates the need of identifying a model fit for the series through trial and error (Time Series Modeler).

The model estimated for RMG Exports was an ARIMA (0,1,0) model with zero order of auto regression, one order of differencing, and zero order of moving average, Brown's linear trend model was used for Bullion, USA GNI per Capita and USA GDP, Simple model was estimated for Crude Oil while Holt's linear trend model was identified for Forex.

Table: 8: Model Fit

Fit Statistic	Mean	SE	Minimum	Maximum	Percentile						
					5	10	25	50	75	90	95
Stationary R-squared	.189	.300	-.006	.741	-.006	-.006	-.002	.033	.437	.741	.741
R-squared	.769	.243	.318	.952	.318	.318	.581	.874	.933	.952	.952
RMSE	387.962	530.951	.247	1111.376	.247	.247	2.564	94.855	1045.170	1111.376	1111.376
MAPE	6.728	5.906	1.245	17.186	1.245	1.245	1.489	5.688	11.038	17.186	17.186
MaxAPE	23.137	28.785	3.272	79.565	3.272	3.272	3.939	13.193	38.968	79.565	79.565
MAE	309.470	430.744	.200	905.931	.200	.200	1.977	65.685	839.043	905.931	905.931
MaxAE	722.994	980.375	.498	2038.746	.498	.498	4.332	189.097	1945.874	2038.746	2038.746
Normalized BIC	7.441	6.708	-2.596	14.234	-2.596	-2.596	1.454	8.073	14.102	14.234	14.234

This section provides the goodness-of-fit measures used in time series modelling:

The above Table: 8, indicates a combined value of stationary R-squared for all the variables.

- *Stationary R-squared* is a measure which is used to compare the stationary part of the model to a simple mean model. It can be negative with a range of negative infinity to 1. Negative values mean that the model under consideration is worse than the baseline model while the positive values mean that the model under consideration is better than the baseline model.
- *R-squared* is an estimate of the proportion of the total variation in the series which is indicated by the model and can be negative with a range of negative infinity to 1. Negative values mean that the model under consideration is worse than the baseline model while the positive values mean that the model under consideration is better than the baseline model. So here, the value of R-squared is also positive (0.769) and between 0 & 1 which proves good model fit(IBM SPSS Forecasting 25).

Table: 9: :Model Statistics

Model	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	Statistics	DF	Sig.	
RMG exports-Model_1	0	7.311E-16	.	0	.	0
Bullion-Model_2	0	-.006	.	0	.	0
Crude Oil-Model_3	0	.000	.	0	.	0
Forex-Model_4	0	.741	.	0	.	0
USA GNI per capita-Model_5	0	.065	.	0	.	0
USA GDP-Model_6	0	.335	.	0	.	0

**The scientific notation E to the -16 power tells that the value is divided by 10 raised to the 16th power. It is just a way R prints numbers that are either too big or too small.*

In Table:9, Stationary R-squared is a measure used to compare the stationary part of the model to a simple mean model. It can be negative with a range of negative infinity to 1. Negative values mean that the model under consideration is worse than the baseline model while positive values mean that the model under consideration is better than the baseline model(IBM SPSS Forecasting 25). In the study, the value of Stationary R-squared for RMG Exports is positive and lies between 0 and 1, i.e., 7.311E-16 (0.0000000000000007311) which indicates that the model fit is good. Similarly, the value of stationary R-squared for Crude Oil, Forex, USA GNI per capita & USA GDP are also positive except for Bullion which is too, only negative by -0.06. So the model statistics table indicates that since stationary R-squared value for all variables except bullion lies between 0 and 1, so this model is accepted well and fit for the study.

Table: 10: :Forecast

Model		2019	2020	2021	2022
RMG exports-Model_1	Forecast	16761.08	17366.17	17971.25	18576.33
	UCL	19207.20	20825.50	22208.06	23468.58
	LCL	14314.96	13906.83	13734.44	13684.09
Bullion-Model_2	Forecast	1241.37	1219.68	1197.99	1176.30
	UCL	1621.87	2068.97	2618.03	3254.13
	LCL	860.86	370.38	-222.05	-901.54
Crude Oil-Model_3	Forecast	62.82	62.82	62.82	62.82
	UCL	95.66	109.26	119.69	128.49
	LCL	29.98	16.38	5.94	-2.85
Forex-Model_4	Forecast	72.33	74.83	77.32	79.81
	UCL	79.68	82.20	84.73	87.26
	LCL	64.99	67.45	69.90	72.36

USA GNI per capita-Model_5	Forecast	55135.00	54406.93	53678.86	52950.79
	UCL	57364.14	58862.51	60778.16	63059.43
	LCL	52905.85	49951.35	46579.57	42842.16
USA GDP-Model_6	Forecast	19.06	19.51	19.95	20.39
	UCL	19.60	20.37	21.19	22.05
	LCL	18.52	18.64	18.71	18.74
For each model, forecasts start after the last non-missing in the range of the requested estimation period, and end at the last period for which non-missing values of all the predictors are available or at the end date of the requested forecast period, whichever is earlier.					

The above Table:10, computes the forecasted values for all the independent and dependent variables considered for the study along with their Upper Confidence Limit (UCL) &the Lower Confidence Limit (LCL). It gives the absolute value for each variable which is the predicted value as well as the range values, UCL & LCL.

The actual value of RMG Exports of India for FY 2019-20 (15489 USD Mn.) was not included in the data set but was referred in the study to compare the predicted value with the actual FY 2019-20 value. On comparing, it was found that the actual value for RMG Exports lies within the predicted range of UCL and LCL of RMG Exports, i.e., 15489 lies between 19207.20 and 14314.96. The data for FY 2018-19 of RMG exports (16156) was also compared with the predicted value and it too, lies within the range of UCL (19773.20) and LCL (14880.96).On comparing the actual value of Gold price and Crude Oil Price for FY 2019-20*(refer Annexure 1)* with the predicted value, it was seen that the actual value also lies within the range of predicted UCL and LCL. This indicates that the model can perfectly predict the prices for Bullion and Crude Oil markets for future years.

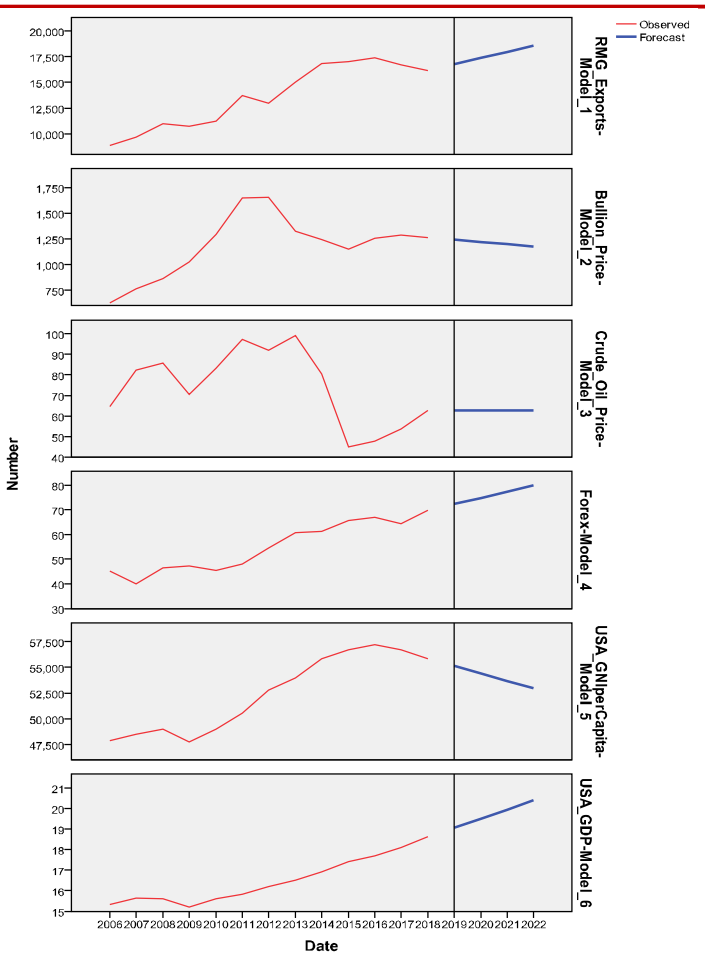

Fig.1:Forecasted values from 2019 to 2022.

TheFig:1, graph indicates that the predicted values are in good agreement with the observed values, indicating model has satisfactory predictive ability. The following observations have been made from the graph:

- The slope of RMG indicates an upward trend in RMG exports which suggests that the exports of RMG will increase in the coming years.
- Bullion has a downward slope indicating a fall in gold prices in the future years.
- The slope of Crude Oil indicates a stagnant growth in prices.
- Forex has an upward slope indicating that the US Dollars will become costlier in the future years.
- GNI per Capita of USA observes a downward trend indicating that the per capita of income of Americans will continue to fall in the coming years.

- GDP of USA has an upward slope indicating a rise in GDP level of the country in coming years.

Conclusion:

Being a significant sector of Indian economy and export sector, the Ready Made Garment (RMG) sector was chosen for the study. In this study, the researcher tried to examine the impact of some international macroeconomic factors namely, Bullion price, Crude Oil Price, Foreign Exchange Rate (US$ to INR), USA GNI per capita and GDP of USA have on the RMG exports of India. For the purpose, multiple regression analysis was carried out on the data for 13 Financial Years from 2006-2007 to 2018-19. India and USA has a remarkable trade history in all terms and different commodities which the country exports(Roy, 2009). India's export to the US Market is the highest in the RMG sector (DGCI&S, India's RMG Exports to World - Country Wise (Top 10), 2016) that's why as a country USA was chosen for the study as a representative State highest of importing countries of RMG export.The results revealed that while Bullion Rate, and GNI per capita of USA have a positive impact on the RMG exports of India, while Crude oil price negatively define India's RMG exports. GNI per capita of USA turned out to be the strongest predictor in both the methods used for Regression in the study. The Standardised Coefficients of Bullion Rate and the Crude Oil Rate came out to be low also while for GNI it was quite high (0.902). Both "Enter" and "Stepwise" Method were used in SPSS for identifying the strongest predictor(s). The R^2 Value of 0.956 in "Enter" Method and 0.943 in "Stepwise" Method indicates the good fit of the prediction model. To understand the relationship between the scalar variable and individual independent variables, simple linear regression was also performed for all the predicting variables. It was found GNI per capita of USA is the strongest predictor followed by Forex Rate (US$ to INR) and GDP of USA. For rest of the two variables namely Crude Oil Rate and Bullion Rate the model fit was not acceptable.

Time series analysis was also conducted to forecast how the dependent and the independent variables will behave in future. The forecasts of the future trends of RMG exports found out that actual value of exports for FY 2019-20 lie within the predicted range and so the model can perfectly predict the trends. RMG exports predicted a 3.74% increase in exports from FY 2018-19 to FY 2019-20. FY 2020-21 forecastedan increase in exports but the growth rate fall from 3.74% to 3.61% which continued even for FY 2021-22. There was further decline in the growth rate to 3.48% in FY 2022-23 though there was an increase in the value of exports. For the study, the actual data for FY 2019-20 was not included so that the forecasted value forFY 2019 can be compared with the actual value. Since the actual India's RMG exports value for FY 2019-20 lies within the predicted range, so we can assume that for the FY 2020-21, 2021-22 and 2022-23, this model can perfectly predict the data for India's RMG Exports as well as for other parameters. Thus, this model is statistically more accepted. From the forecasted graph it is observed that RMG Export of India to USA, Forex Rate (US$ to INR) and GDP of USA have a positive slope indicating a rise in the value of the variables, while GNI per capita of USA and Bullion Rate have a downward slope indicating a fall of value of the variables. Crude Oil Rate Graph shows a parallel line indicating a stagnant value for the variables. If the recent trend is followed for the calendar year 2020 for all the six forecasted variables a similar trend can be observed for most of the variables. While the study was done, effect of Covid-19 pandemic and the Global Lockdown on the economy were not taken into consideration.*Future scope of work;*This study was made for USA, so with the same model and method, it can be carried out for other countries as well. This model can be used to predict future trends and analyse the impact of independent variables and how they define exports of other countries.

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Annexure:

The value of India's Exports of RMG and five variables namely Bullion Price, Crude Oil Price, Forex Rate, USA Per Capita Income and USA GDP for 13 Financial Years.

FY	India's RMG Exports (USD Mn.)	Bullion PriceLBMA (USD per troy ounce)	Crude Oil Price WTI (USD per barrel)	Forex Rate (USD Price in terms of INR)	USA GNI per Capita (USD)	USA GDP (USD Trillion)
2006-07	8895	628.4	64.71	45.07	47880	15.34
2007-08	9693	765.84	82.26	39.98	48500	15.63
2008-09	10951	867.17	85.77	46.38	48980	15.61
2009-10	10719	1023.02	70.62	47.14	47730	15.21
2010-11	11217	1293.97	83.24	45.46	48990	15.60
2011-12	13737	1645.58	97.28	48.03	50570	15.84
2012-13	12962	1654.33	92.01	54.42	52770	16.20
2013-14	15001	1327.08	99.04	60.77	53950	16.50
2014-15	16847	1246.96	80.57	61.27	55850	16.91
2015-16	16990	1151.17	44.87	65.60	56740	17.40
2016-17	17388	1258.59	47.83	66.97	57180	17.69
2017-18	16722	1284.97	53.66	64.49	59060	18.11
2018-19	16156	1263.06	62.82	69.87	63170	18.64
2019-20	15489	1462.25	54.78	-	-	19.07

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TEACHING-LEARNING AND ASSESSMENT: RETHINKING TOWARDS THE HIGHER EDUCATION LANDSCAPE IN COVID-19 SCENARIO

Neloy Sarkar
Assistant Professor of Education, Gobardanga Hindu College
Gobardanga, North 24 Pgns.,West Bengal

'Teaching is more than imparting knowledge, it is inspiring to change'
- William Arthur Ward

Abstract:

Education is at a turning point, it has reached a moment where it is incapable of healing itself with its current conceptual, intellectual and moral capabilities. Higher education is in crisis because of pandemic in world environment and impacted their daily functioning. This functioning is currently undergoing to a massive transformation as a result of the digital revolution. The present study will examine the present teaching, learning and assessment process in challenging situation of COVID 19 Pandemic. Learners are learning with the aid of new technologies. A dramatic change seen in the teaching learning and assessment process that leading to substantial gain in outcomes by system. The COVID 19 crisis has resulted in Indian higher education system going into an unprecedented institution wide lockdown since the month of March, 2020 and disrupted the above mentioned activities. The main focus of this paper is to returning of higher education sector of India in the view point of teaching learning. This is the time we need to provide the vision for an educational system that integrate all the different elements which make the thinking regards of higher education landscape towards a changing scenario. The central challenge is whether our system will be able to adapt and incorporate the new power of technology driven teaching learning for students of higher education sector. This change will create new opportunities to learn and develop a broader view which will develop a societal change that make the educational resources available to everyone.

Key Words: Higher Education, Teaching-Learning, Assessment, Digital revolution, COVID 19

Introduction:

The global higher education landscape has dramatically changed in the past few months due to spread of the corona virus. Students across the higher education sector of India have been significantly impacted of this virus. Higher educational institutions have had to face devastating epidemics that have impacted their daily functioning. Students across the higher education sector have been dramatically impacted by the spread of this virus, from travel restriction to social distancing, isolation measures and others restrictions. Currently the temporary closed of higher education institutions due to the

COVID-19 pandemic and also India is now locked down to fight against this crisis situation. This locked down system regards to closure that affects the higher education sector of India. It is the time to think about teaching learning system of various courses in higher education. Face to face contacting is temporary prohibited and students are survived in insufficient resource environment. It is the creativeness and mastermind of policymakers how they can bridge a gap for this in a positive or negative way. This paper therefore identifies what policymakers thinking related to teaching-learning and assessment process in higher education sector that is impactful under this circumstance. Higher education institutions teaching learning is questioned now interestingly we choosing an alternative form to conduct as regular basis without existence of normal classroom. The paper also affirms that teaching-learning and assessment process may be more effective that meet the demands of the learners.

The process of addressing crises in the higher education sector seems cyclical. This can include different protocols and imposing the school closures which offering distance learning. This approach may include adjustment to the academic calendar, standard of examinations, continuing with distance learning. On the other hand, disengage of students from the learning process has reversing gains in learning result. An even disengagement in learning process can bring some learning challenges that may not effectively start up the learning strategies or cannot access the information. University Grants Commission (UGC) and other apex education bodies have also issued some specific guidelines for Indian higher education institutions (HEIs) during this temporary closing situation. In this situation teaching-learning process has been undertake to move classes into online system. These measures will have varying degrees of impacted the large number of students that they enrolled in different courses and the faculty employed by the system. Higher education leaders are also concerned that this pandemic could have a deeper impact for this sector as well as disrupted the current admission cycle and also create a cash flow crunch, slowdown research and other academic activities.

This paper examines those aspects which will address the new thinking of the policy maker and educational administrators who find out specific way under this crisis situation. Diana Laurialld (1993) in her book '*Rethinking University Teaching*' proposed a theoretical framework for the employment of learning technology that also embraced wider pedagogical perspectives. After two decades later the educational use of Information and Communication Technology (ICT) for teaching-learning and also assessment process in higher education institutions has grown beyond this stage. It is the time to rethink about our students performance that addressed by their skills, knowledge, understanding. The greater collaboration made possible by ICT has created new requirements for the students in an artificial classroom environment. UGC and other stipulated bodies already taken some measures in this connection to evoke a new teaching-learning environment as that act a tool for delivery of online interaction and make them to assess. This is the contention of this paper to become rethink the system in terms of epistemological purpose and to harness new technologies in the monitoring and analysis of the complex interactions and behaviours of the students. This reform is in sum a '*Paradigm Shift*' in perspective driven by present considerations including the aims of education itself, required to reforming existing discipline and inventing the new

one that will turn the new mark underlying of new identity of Indian higher education sector as recognized by modern network world.

Background of the Study:

The pandemic regarding Corona virus has created significant challenges for the global higher education community. The decision to temporary close of higher education institutions since the mid week of March 2020 which is prompted by the principle of WHO i.e. large gatherings of learners that can cause serious risk to spread. No one knows for sure how long those closures are likely to last. Initial measure has taken by several governments in teaching learning. Impact of the pandemic on higher education is abrupt. UGC declares in his notification to conduct teaching-learning and assessment through various online platforms. While the impact of the pandemic on higher education there was no contingency plan to continue the classes and other assessment activities. Pandemic adds a further degree of complexity to higher education because of the unresolved challenges. Across the world we seen great progress in expanding learning opportunities for all, access is not now enough in this situation.

Review of Related Literature:

Williams, P.(2019). In his work entitled as 'Rethinking University Assessment' highlighted those aspects that are addressed by formal assessment methods. This paper also argues the case for universities to align assessment methods to meet the need of twenty first century knowledge worker. The author identifies a new conceptual model for assessment. Various chart, figure shows the rethinking against existing assessment criteria under this study. This paper concludes with a significant recommendation for policymakers and focus should be on the quality of collective achievement.

Objectives of the Study:

Objectives of the study are as follows;

i. To know the various teaching-learning and assessment process involves in higher education.

ii. To know the current impact of pandemic situation on teaching-learning of higher education sector.

iii. To find out the changes and challenges in teaching-learning and assessment activity in present situation of higher education.

iv. To make a comparison the teaching-learning and assessment process with present and before pandemic situation.

Teaching-learning and Assessment Process: Teaching and learning was started from our ancestor and it will continue as long as human being survival in the earth. In higher education teaching-learning modalities considered diversity in all aspects of experiences including individual or collaborative. Main vision is imparting of quality education and expanding opportunities to all the learners. Assessment of learning plays a key role in promoting learning. In higher education teaching-learning and assessment scheduled

prepared at the beginning of every academic year. Various teaching-learning process have been used in higher education sector such as to enhance the knowledge of students as well as acquired experience measured by assessment tools in classroom or course completion. Different teaching-learning approaches in higher education;

- **Student-centred learning**: Generally referred to collectively as active learning. In this model of education teacher is more a facilitator. Teaching becomes a matter of creates the learning directly on knowledge.
- **Experiential learning**: Improvement and understanding of the subject are framed jointly by student and teacher by recalling their learning experience. This types of learning is superior, subordinate to communication also problem solving.
- **Project based teaching**: Teacher of the department give small projects/assignments to the group of students in different courses.
- **Learning-oriented Assessment:** This kind of assessment is multisource method that promotes student learning for the present and future. In higher education system consists of three criteria i.e. learning tasks, self and peer assessment and feedback (Carless, Joughin, &Mok, 2006; Carless, 2015)
- **Summative and formative assessment:** Very popularize method to assess the student's achievement during and after completion of academic session. Gibson and Shaw (2011) say that formative assessment includes unit test, midterm tests. Internal assessment. In higher education most assessment strategies such as course assignments, serve as both formative and summative function.

Impact of Pandemic on Teaching-Learning in higher education:

The global higher education landscape especially teaching-learning, assessment method dramatically changed in last few months of this year due to outbreak of COVID-19. Students, teachers and administrators have been impacted by this outbreak. In higher education sector it affects largely. To know the impact of this pandemic researcher used some secondary data from different sources to draw its effect. At first, let we see what does all higher educational institutions to fight with corona virus;

Measures taken by the all higher educational institutions are as follows:

- ✓ Suspension of all classes in UG & PG Level
- ✓ Postponed or rescheduled of semester examinations
- ✓ Consideration to long term uncertainty
- ✓ Alternative way to conduct teaching-learning.
- ✓ Attendance.
- ✓ Research Activities.

The COVID-19 scare is giving sleepless nights to students who were to appear in final year examination. The conventional Indian higher education system follows face to face teaching learning even though the trend of audio-visual teaching aids in classrooms was introduced. Some universities in India are offering online classes. Another important issue faced by higher education institutions how would they make up for the loss of time on account of closure of institutions. The closure of higher education institutions in global environment not only interrupts the teaching, the closure coincides with assessment process and result of cancelled or postponed. These effects are largest for

the students from disadvantaged backgrounds. The major concern is employment; those who have completed their degree may have fear in their minds from the corporate sector due to the present situation.

- Impacted Study Plans: QS survey data (April, 2020) shows corona virus impacted the plans of study either out of state or abroad. 46% of selected sample agreed with this statement, 29% are not agreed and 25% don't know. So it is cleared respondents have changed the plans to study others as a result of corona virus effect on higher education.
- Transformation in delivery method: The pandemic has transformed the centuries old chalk-talk teaching model to one driven by technology adoption. `

The pandemic has significantly disrupted the higher education sector as well, which is critical determinant of a country's economic future. A large number of Indian students enroll in universities in abroad, that worst affected by the pandemic. Students have now been barred from leaving the countries. If the situation persists it decline in the demand for international higher education is expected.

What changes in Teaching-learning and assessment in Higher Education:

As we know after the outbreak of the pandemic in result of closedown of all higher educational institutions. Under these circumstances, the greater collaboration made possible by Information and Communication Technology (ICT) that creating new environment to teaching-learning as well assessment activity of higher education sector. It has therefore to rethink become necessary measures of realistic problems.

Changes in teaching-learning: this pandemic transformed traditional method to pushing of technology in teaching-learning system. In present time the mode changes in online education. So delivery of teachers talk shifted away by use of technology. This is called as e-learning method.

Effects on research: Research has been affected in a negative way, it is true that non-lab based research can be conduct but lab based is not possible to carry out under this situation. Only secondary data is available in website. Research is totally stalled. It may causes of delay in submission.

Rethink to copping up the Indian Higher Education in Pandemic Situation:

In these crisis situation policymakers, other academicians as well as authority such as UGC, MHRD and also the individual head of higher education institutions in India took decision some possible alternatives or solutions for uninterrupted education during COVID-19. The following are the steps towards a new teaching-learning and also assessment of student's progress;

- At first, with the help of electricity, digital skills of teachers and students and internet connectivity, it is necessary to explore the digital learning platform. It will create a diverse online platform where artificially maintain of classroom environment in home.
- Students those who coming from low income group or disability perspective, the distance learning programme can be introduced in this time.

- Reforms in use of technology that could be integration in present Indian education system. The main purpose of boosting retention of the syllabus by using innovative technology.
- Make effective educational practices which are needed for the capacity-building of young minds. In this perspectives Central and State government need to take measures to ensure the overall progress of learner.
- UNESCO IESALC (2020) has published recommendations for higher education institutions in relation to the COVID-19. These include the reliable information to facilitate of open access courses for quality higher education across the world. Authorities are to need the preparation in effective manner.
- Measures should be taken to mitigate the effects of pandemics on job offers, internship programme and research work.
- Measures are essential to ensure continuity of learning. Open source digital learning, Learning Management Software (LMS) should be adapted to online teaching. Need to ensure the minimum accessibility of learning to the students.
- Strategies required preparing the higher education sector for the demand-supply trends across the teaching-learning environment.
- Important to reconsider the pedagogical methods by seamlessly integrating classroom learning with e-learning modes for build a unified learning system.
- Maximize online learning. That will be effective to keeping student retention and maintaining access in online class. This online learning will infuse a virtual study culture.
- Higher education institution will implement these changes in response to this pandemic situation. They should analyze the steps to take action regarding safeguards.
- In assessment purpose teacher can use the technological help to assess their progress day by day or in a week. Formative assessment tool can be introduced. Teacher must prepare some question in close ended form and send their students to check progress. In this connection need to train the teachers by various online course i.e. Professional development Course, Faculty Development Programme, Online Training Course etc.
- Prepare a time for the resumption of face-to-face classes. Knowing of advance the provisions, processes and mechanisms.
- Government and higher education institutions should create coordination mechanism.
- Design the pedagogical measures to evaluate the learning outcomes and also for disadvantaged students.
- Creating and organizing a framework for higher education institution to run this system now and Post Pandemic period.

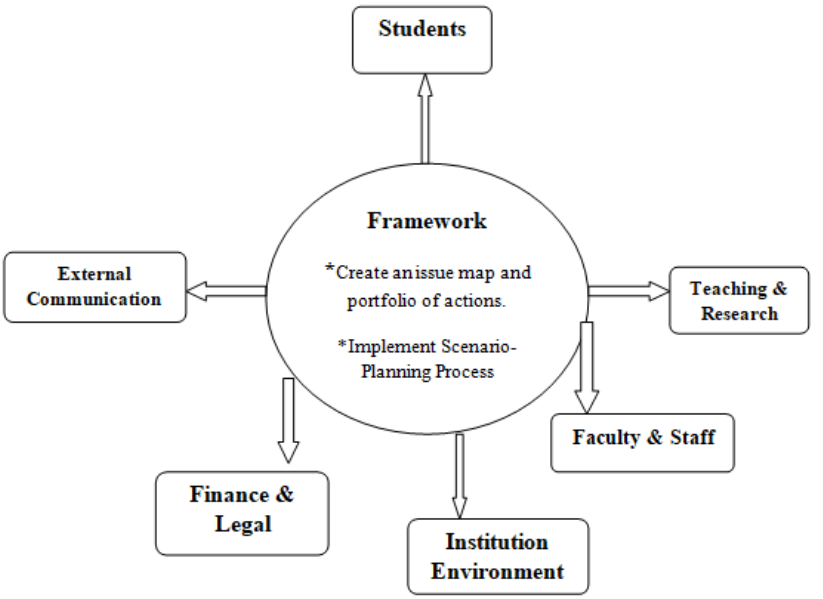

Figure 1: A Possible framework for COVID-19 integrated higher education landscape. Source: Federal Emergency Management Agency, McKinsey & Company

Challenges: Higher education will face unprecedented challenges as a result of the rethinking on newly transformed higher education landscape of the corona virus outbreak. Need to combat many struggling to navigate this crisis to maintain consistent teaching-learning process.

- Challenge in Digital Learning: The first challenge is to access internet connectivity in rural and backward area.
- Challenge in e-teaching: Many online platforms are available to conduct teaching from home. But there is problem to conduct the lab oriented content demonstration.
- Outcome of e-learning: The online process initiated only in pandemic situation. We are unfamiliar to outcomes of this process, so how we will assess our learners that will fulfill each and every terminal behavior.
- Poor Infrastructure: Poor physical infrastructural facilities seen in most of higher educational institution, it is another challenge to conduct the processes.
- Equity and quality.

Teaching-learning and Assessment process of Pre and Present COVID-19 scenario:

The present situation has forced the higher education in dilemma and suspended physical classrooms also shifted to online classroom. The traditional teaching-learning

and assessment has changed to their nature in digital environment as they can reshape of function. Present situation is very difficult to continue on long-term basis. This study reflects some dimensions that make a comparative discussion of teaching-learning and assessment process of higher education related to pre and present pandemic environment.

Dimension	Pre COVID-19 scenario	Present scenario
Mode (Teaching-learning)	Face-to-face teaching-learning environment in educational institutions.	Transition to digital online education(Google classroom, Edmodo, Moodle and many others)
Assessment	Students prepared themselves throughout the year for traditional evaluation system.	Online assessment system through online viva-voce Google forms etc.
Nature	Teaching-learning from classroom	Teaching-learning from home
Classroom environment	Cultural diversity within classroom	Virtual Study culture
Effectiveness	Quality of education through multidimensional objectives, proliferation of courses and integration with training and success.	E-learning make 'new normal' transformation, higher education creates technology adaption activities.

Conclusion:

Education is a process by which a person's body, mind and character are formed and strengthened. Present Pandemic affect the education sector adversely in India. In these uncertain times higher education institutions continuously strive to deliver high quality teaching-learning and consistent communication to the students. Moreover higher education system is especially vulnerable. Online teaching-learning and assessment are not substitutes for classroom lectures. Its make a digital divide and leads to discrimination. It is also important to establish quality assurance mechanism and quality benchmark for online teaching-learning developed and offered by higher education institutions in India as well as e-learning platform. Need to take decision on methodology and assessment parameters so that quality of teaching-learning may not differ across the country. It is important to remember that flexibility and the ability to quickly adapt to changing situation that serve higher education institution well in coming days.

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ILLUSION PIN: TRICKING THE EYE TO DEFEAT SHOULDER SURFING ATTACK BY USING HYBRID IMAGES

Sharan L Pais,Nikshita, Pooja Shetty, Priyanka S N and Tharunya U P
Department of Information Science and Engineering
Alva's Institute of Engineering and Technology Mijar, Moodbidri

Abstract

We evaluate 20 years of proposals to exchange text passwords for general-purpose user authentication on the online employing a broad set of usability and security benefits. Our comprehensive approach results in key insights about the problem of replacing passwords. Touch screens are an increasingly common feature on personal computing devices, especially smartphones, Oily residues, or smudges, on the touch screen surface, are one side effect of touches from which frequently used patterns like a graphical password could be inferred. Here we examine the feasibility of such smudge attacks on touch screens for smartphones, and focus our analysis on the Android password pattern.

Keywords-Password, Smudgeattack, Patterns, Graphical Password

I. INTRODUCTION

Due to increased processing power and storage capabilities, modern smartphones store a plethora of sensitive data that users want to stop others from accessing thanks to increased processing power and storage capabilities, modern smartphones store a plethora of sensitive data that users want to stop others from accessing. Touch screens are touched, so oily residues, or smudges, remain on the screen as a side effect. Latent smudges could also be usable to infer recently and regularly touched areas of the screen – a sort of information leakage. Here we explore the feasibility of smudge attacks, where an attacker, by inspection of smudges, attempts to extract sensitive information about recent user input And also feasibility of smudge attacks against the Android password pattern, our analysis begins by evaluating the conditions by which smudges are often photo graphically extracted from smartphone touch screen surfaces. Here we also consider simulated user usage scenarios supported expected applications, like making a call , and if the pattern entry occurred before or post application usage. Mobile phones are increasingly integrating security-sensitive services, such as electronic wallets and banking transactions. we not only need to secure user authentication on mobile devices, but we must aim for secure user authentication systems that work equally well on miniaturized devices as they would on large size displays. Traditional authentication systems that believe textual password entry, despite their simplicity, aren't adequate for little portable devices. For the vast majority of android, passwords are the method of choice for authenticating users. We design and analyze graphical passwords, which may be input by the user to any device with a graphical input interface. A graphical password serves an equivalent purpose as a

textual password, but can consist, for instance , handwritten designs (drawings), possibly additionally to text.

The graphical password schemes that we propose derive their strength from the subsequent observation a graphical interface for providing input enables the user to decouple the positions of the inputs from their temporal order. This is in contrast to textual passwords input via a keyboard here, the temporal arrangement during which the user types characters uniquely determines their position within the password. The first graphical password scheme builds directly on textual password schemes, by enhancing the input of textual passwords using graphical techniques. We propose and implement a second scheme, called \draw a secret"(DAS), which is only graphical; the user draws a secret design (the password) on a grid. In contrast, because graphical passwords are repeatable, our schemes can derive a secret key, e.g.,to encrypt and descryptes, without got to store the password on the device. This protects both the password and the encrypted data.

II.LITERATURE REVIEW

M. Harbach, A. De Luca, and S. Egelman, et.al [1] addresses the matter of "The life systems of cell phone opening", by proposing an inside and out examination of the cell phone locking instruments presently accessible to billions of cell phone clients around the world. The exploration on these frameworks works on suspicions about cell phone verification that are excessively idealistic or just false. for instance , a framework that takes 10 seconds to confirm could be fine during a research center setting, yet its ease of use inside the world is faulty when a client must open her telephone up to 50 times each day. In this manner, in order to improve the ease of use and selection of cell phone validation systems, a comprehension of clients' set up practices over significant stretches of your time is significant.

Yi-Lon-Chen, et.al [2] states that text and color based password scheme. It contains two phases are Registration phase and Authentication phase. During Registration phase user select text password K of length should be greater than 8 and also user will select one color. The user selected color are often chosen in authentication phase. Later login system display with circle, contains eight colors divided into sectors. The circle have 64 characters has randomly positioned. If we click the button rotated in either clockwise or anticlockwise manner. The text-based shoulder surfing resistant graphical password scheme is improved by using colors, additionally just one occasion password is used. So it's become safer. User can easily login to the system. Unauthorized user cannot get the password easily. So this scheme is resistant to shoulder surfing.

Sonia chanson, et.al [3] proposed the cued click point authentication technique obtain from pass point. In registration phase certain number of images is chosen within the actual order. In login phase selected cued image is correct then open subsequent image otherwise not display subsequent image. A password authentication system should allow strong passwords while maintaining memorability. In a shot to create more memorable passwords, graphical password system are devised. Graphical passwords techniques are often categories into Recognition Based Techniques and Recall Based

Techniques, further this recall based techniques are often categories into pure recall based techniques and cued recall based techniques. In such systems user identify and target previously selected location within one or more images .The images act as memory cues to help recall. Example include PassPoints and Cued Click Points. HotSpot and Pattern Based attacks are most effective in PassPoints. Hotspots attack is additionally effective in cued recall based techniques.

M. Kumar, T. Garfunkel, D. Bone, and T. Wino grad [4] proposed the Shoulder-surfing – using direct observation techniques, like looking over someone's shoulder, to urge passwords credentials, PINs and other sensitive personal information – could be a issue that has been difficult to beat. When a user enters information employing a keyboard, mouse or any traditional data input device systems, a malicious user is also ready to acquire the user's password credentials. Here Eye Password is introduced, a system that mitigates the issues of shoulder surfing attack via a unique technique to user input. With Eye Password, a user enters sensitive input like password, PIN, etc. Here experiments conducted user studies to guage the speed, accuracy and user acceptance of our methodology. The proposed method shows that oaglesign based password entry requires marginal extra time over using the keyboard, error rates are same on those of employing a keyboard and subjects preferred for the oagle sign based password entry techniques over traditional methods.

H. Zhao and X. Li, [5] the troubles of the literary secret word are recorded to us. Clients will in general select little passwords or passwords that are easy to remember to mind, that makes the passwords helpless for malignant client to hinder. Besides, literary based secret word is vulnerable to bear surfing, concealed camera. Graphical based secret phrase approaches are acquainted as a potential arrangement with content based plan. Be that as it may, they're for the most part powerless to bear surfing assaults. The S3PAS completely consolidates both graphical and literary secret word plans and it will likewise gives ideal excluded to bear surfing, covered up camera assaults. We can undoubtedly supplant S3PAS with regular literary based secret phrase plans without changing current client secret key profiles. Also, it's impervious to the beast power assaults through unique and unpredictable the meeting passwords.

Lim khan seng, et.al [6] proposed the artwork collection instrument. Painting Album Mechanism is an enemy of shoulder surfing component, which has attributes of both review and acknowledgment graphical systems. Along these lines, this system isadditionally a mixture graphical secret word hostile to bear surfing mechanism.It includes two stages enrollment and validation stage. In Registration Select one picture as topic, Use swipe shading or scot plot, User register their secret word and Click register button for fruitful enrollment and its length>8. In Authentication select picture or shaded box, click on login catch to finish confirmation. It is comprises of three information plans called Swipe Scheme, Color Scheme, and Scot Scheme. Here, ease of use of this system have been confirming with the memorability test. 30 respondents were validating with these three info plans with various verifications. Results were demonstrating Painting Album Mechanism is usable since respondents were prevailing with regards to reviewing theirs passwords in adequate timeframe.

M. swathe, M.V. Jagannatha Reddy et. al. [7] at the hour of enlistment client needs to choose a picture and spot a viewport on the specific piece of picture. For getting the following framework of pictures client needs to rearrange the viewport starting with one spot then onto the next in a picture. A similar procedure is applied till client gets certain lattice of pictures as their secret key. During the login stage a similar picture will be show up and client needs to choose the recently chose viewport as secret word for authentication.User can choose secret key from framework created viewport or by utilizing client characterize viewport. The viewport is shows up just at enlistment process. Client may rearrange the framework produced viewport to choose secret phrase or utilize little viewport as mouse cursor.

Susan Wiedenbeck, Jim Waters, Jean-Camille Birget, Alex Broadskiy, Nasir Memon [8] Passpoint is a procedure wherein just one picture is chosen during the enrollment. From that picture, specific piece of picture or prompted of picture are chosen as the secret phrase. Client can choose different signaled haphazardly from the picture yet client ought to retain the succession of prompted entered at the hour of enlistment.During the login time preselected picture will show up on the screen. Client needs to enter the preselected prompted of pictures in a similar request as they chose during enrollment.

III.PROPOSED DESIGN

The system consists of nine dots arranged in a matrix of 3 × 3. Redundancy input is allowed i.e. retouching the dots. When the dots are touched it changes colors. Maximum of seven retouching is allowed, i.e. each time a dot is touched it changes color seven times. If the password is entered correctly then only the screen will be unlocked. The security power depends upon the size of the key space. The bigger the key space, the more difficult is a brute force attack. Comparing our system to the Pattern Lock and number password systems, the Pattern Lock has about one million key spaces, the number password system has about 10,000 key spaces, and our Lock Screen system has about ten million (7^9 = 10077696) key spaces. It can also be made larger by increasing the number of repetitive.

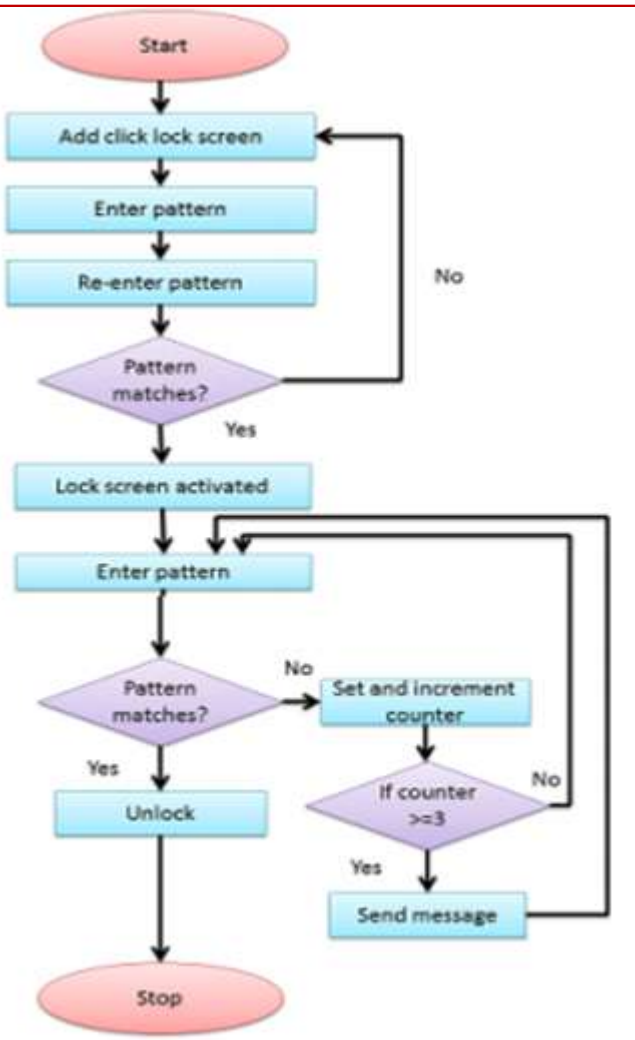

Fig.1. Workflow diagram for the proposed system

A. Setting Of Pattern as Password First we will have to enter the color pattern that we want to use as password.

B. Setting Mobile Number We need to give one phone number so that if some unauthorized person tries to unlock the phone, a message will be sent to that phone number. Message will be sent if the unauthorized user tries to unlock the phone three or more than three times.

C. Unlock Password User will have to enterthepattern. If the entered pattern matches with the already saved pattern then only the phone will be unlocked else we will have to keep trying to enter the pattern. And Message will be sent

to the previously registered number if the unauthorized user tries to unsuccessfully unlock the system for more than three times.

IV.FUTURE WORK

The illusion pin password scheme will poses many questions which require further developments and investigation.We have prepared the graphical password system that provides better security and privacy than the current textual password. We analyze the information content of the password space by presenting arguments for the privacy and security of our scheme. The system also provide novel approach for the capturing of "memorability" of graphical password by classification of DAS password which are generated by the simple grid-based language

For the further work an alternative system for the memorability of DAS password to capture high-level structure than the current models. The main goal is to view an organized drawing as a wall instead of the individual parts. For example we can view a rectangle like an object of itself than viewing it simply as an arrangement of simple line. In this way it is possible to define a group of primitive structure from where all the "memorable" drawing is derived by using the meta-level composition among these primitives. By this we can show that even this decreased. Set of DAS password contains a huge space compare to the textual password and this will be harder to grab in the practice.

Based on the analysis and results of some experiments and prototype there are many avenue for the future work that involve alternate image techniques to generate the graphical images. As we see from other results we can remove the similarities between any two pictures by pre-processing images/pictures.Particular dependent image selection scheme is used by the prototype implementation. From this set of images, one image is always "correct" and also the system will show alternative image at a time.

V.CONLUSION

In this paper, the prepared mechanism is used for user authentication which is secured. This can be used in any device regardless of size of the implementation platform. The system depends on the human capability to analyze the version of previously seen image. This illustrates how the stared images are used to maintain the usability of the graphical password system which resists the guessing attacks.From the usability study we know that the users are highly skilled of recognizing the degraded version of the images that are self-chosen, even after period of long time of months. The users who know the original image can easily recognize a highly classy image. Even in the condition where the images are not mathematically reversible and carry limited information. This technique is used for the easy access of user's private data via terminals. Since these are increased terminals, sensitive information should not be

accessed this is same as the graphical password technique which can be widely used in the applications such as ATMs and the computing environment with the huge display.

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वङ्गसाहित्येषु संस्कृतसाहितेषु च नार्य्यधिकारलङ्घनचिह्नानि – तुलनात्मकमालोचनमेकम्

पियाली वेरा
एम्.ए (सेट् उत्तीर्णा)
छात्री

सृष्टिर्या महती विश्वे चिरकल्याणी भासते ।
नारीभिः क्रियते अर्धरर्धस्तस्यास्तु पुरुषैः ॥

विश्वस्य माङ्गलिकसर्जनं सर्वमेव नारी-पुरुषयोः प्रचेष्टया सम्भवति ।यतः नार्य्यः एव सृष्टेर्मूलं तर्हि जगत्संसारः नारीकेन्द्रिकः ।नार्य्याः स्पर्शेनैव सृष्टिः पूर्णत्वं प्राप्यते ।यस्याः स्थाबरजङ्गमानां सृष्टिर्भबति ,या च प्राणिणां प्राणप्रदायिनी सा अपि नारीरूपिणी प्रकृतिरेव । नारीगर्भे एव परिपाल्य जीवाः पूर्णत्वं लभन्ते ।एतत् सत्त्वेऽपि अधुना समाजे नारी उपेक्षिता अवहेलिता च भबति ।अधिकारः दूरस्तः, सामाजिकैः सम्मानमपि ताः न प्राप्यते यच्चित्रं कवि-लेखकानां रचनासु प्रतिफ़लितं भबति । न केवलं संस्कृतसाहित्येषु अपि च वङ्गभाषया लिखितेषु साहित्येष्वपि नार्य्यः मर्यादालङ्घनविषये प्रभूतमुदाहरणमस्ति ।यतः साहित्य एव समाजस्य दर्पणः तर्हि तेषां साहित्येऽपि नार्य्यधिकारः सम्मानञ्च च वारंवारं लङ्घितं भबति ।लेखकानां लेखन्या अपि ताः वञ्चिताः भबन्ति ।

संस्कृतसाहित्येषु नार्य्यधिकारलङ्घनम्

रामायणम् :

सीता : संस्कृतसाहित्ये बिबिधगुणैः पारङ्गमा रूपलावण्यवती नारी अपि केवलं पुरुषाणां विलाससङ्गिनी भोग्यसामग्री चेति व्यवहृयते ।आदिकवेः वाल्मीकेः आदिकाव्येऽपि नारी उपेक्षिता भबति ।यथा, रामायणे मैथेल्यां जनकतनयां सीतायं आजीवनं दुःखं दृश्यते ।न केवलं मानसिकं शारीरिकम्वा दुःखं, सा सीता सर्वत्रैव वञ्चिता भबति ।यं रामचन्द्रं पतिरूपेण निर्वृत्य तस्याः अयोध्यायामागमनमभबत् ,स प्रजानुरञ्जकः राजा रामचन्द्रः तस्य राजकर्तव्यपालनाय प्रजामनोरञ्जनार्थञ्च भार्यां प्रति कर्तव्यः विस्मृतं बभूव ।रामचन्द्रस्य चतुर्दशवत्सरवनवासकाले सीता सहधर्मिण्याः कर्तब्यपालनं चकार परन्तु रामेन सा असुरक्षिता बभुव ।सा राबनेन लाञ्छिता बभूव ।यद्यपि दीर्घकालात् परं रामेन सा उद्धार्य स्वीयराज्ये राजराणीरूपेणाधिष्ठिता बभुव तथापि तत्र तस्य मर्यादा लङ्घिता भबति सा च वञ्चिता भबति प्राप्याधिकारात् ।मर्यादामुल्लङ्घनमकृत्वा रक्षणमेव भार्यां प्रति पत्युः कर्तव्यम् ,परन्तु लोकापवादात् भीतः राजा राज्यं प्रति कर्तव्यपालनार्थं भार्यां प्रति कर्तव्यं विस्मृतं बभुव

।स्वचरित्रस्य विशुद्धतां प्रमाणार्थं सीतामग्निपरीक्षादातुं बभूव एतत्तु एकस्याः नार्य्याः समीपे परमासम्मानकरम् ।प्रभोरनुगता स्त्री सीता राजकर्तव्यस्य विरोधितामकृत्वा अग्निपरीक्षायामुत्तीर्णा बभुव परन्तु तां प्रत्यसहमर्मिणा रामेण सा पूर्वकारणादेव द्वितीयवारमवमानिता भूत्वा सन्तानसम्भवावस्थायां निर्वासिता बभुव ।

ऊर्मिला : आदिकाव्यस्य अपरमेकं नारीचरित्रं लक्षणपत्नी ऊर्मिलाऽपि तस्याः प्राप्याधिकाराद्वञ्चिता बभुव ।उद्वाहात्परं एका नारी पूर्णरूपेणैव पतिं प्रति निर्भरशीला भबति ।परन्तु रामानुजः लक्ष्मणः तस्याग्रजं प्रति निष्टत्वात् स्वपत्नीं प्रति कर्तव्ये विच्युतः बभुव । सामाजिकनियमानुसारं विवाहात्परं पति-पत्न्योः साहचर्येणैव दाम्पत्यवन्धनं दृढं भबति ,परन्तु ऊर्मिला तस्मात् सुखात् वञ्चिता बभुव दीर्घचतुर्दशवत्सरं यावत् लक्षणस्य अग्रजेन सह वनगमनात् ।राजप्रासादे स्वमर्यादा प्राप्तेऽपि पत्न्यारधिकारात् स्वामिनः प्रणयाच्च सा वञ्चिता बभुव ।

अभिज्ञानशकुन्तलम् :

शकुन्तला : महाकवेः कालिदासस्यामरसृष्टिः "अभिज्ञानशकुन्तलम् " इत्यस्मिन्नाटकेऽपि बिभिन्नानि वञ्चितानि स्त्रीचरित्राणि सन्ति ।यथा अस्य नाटकस्य नायिका शकुन्तला जन्मनः परमेव वञ्चिता भबति ।ऋषेः विश्वामित्रस्यौरसेनाप्सरायाः मेनकायाः गर्भे शकुन्तलायाः जन्मोऽभबत् ।जन्मनः परमेव माता-पितृभ्यां वञ्चिता सा कण्वाश्रमे पालिता अभबत् ।शैशवात् माता-पित्रोः स्नेहेनैव शिशोर्वृद्धिर्भबति परन्तु शकुन्तला तस्मात् स्नेहात् वञ्चिता अभबत् इत्यत्र **प्रथमतः** तस्याः अधिकारः लङ्घितो भबति ।यौवनस्य प्रारम्भैव तस्याः जीवने प्रणयः संञ्जातः ।वसन्तस्य प्रथमस्फुरितकोरक इव शकुन्तलायाः हृदयोद्याने महाराजस्य दुष्यन्तस्य प्रेमकोरकः विकशितो भबति ।

विवाहात्परं दीर्घदिवसे अतिक्रान्तेऽपि दुष्यन्तेन गर्भभाराक्रान्ता शकुन्तला राजधान्यां न नीता ।अत्र शकुन्तलायाः पत्न्यधिकारः लङ्घितो भबति **द्वितीयवारम्** ।

अनन्तरं चिन्तान्विता शकुन्तला अतिथिसेवारूपे कर्तव्ये अनवधानात् अभिशप्ता अभवत् इत्यत्र तस्याः अधिकारः **तृतीयवारं** लङ्घितं भबति ,यतः कर्तव्ये अनवधानतायाः कारणमविवेच्य दुर्वासया सा अभिशप्ता अभबत् ।अत्र दुष्यन्तस्य दुश्चरित्रमाबृतुं कविनात्र अभिशापः सूचयति ।येन कारणेन गर्भावस्थायां शकुन्तला पत्न्याः मर्यादातः वञ्चिता भबतीति **चतुर्था**धिकारलङ्घनम् ।

हंसपदिका : न केवलं शकुन्तला, अस्मिन्नाटके अपरस्याः एकस्या वञ्चितायाः नार्य्याः चरित्रमुपस्थाप्यते कविना । स दुष्यन्तस्य प्रथमा पत्नी हंसपदिका ।तस्याः संगीतेन कामुकदुष्यन्तस्य तां प्रति दुष्यन्तस्य अमर्यादायाः चित्रमुद्घाटितमस्ति इत्येवम् –

"अभिनवमधुलोलुपस्त्वं तथा परिचुम्व्य चूतमञ्जरीम् ।
कमलवसतिमात्रनिर्वृतो मधुकर विस्मृतोऽसि एनां कथमम् "॥इति ।

अनेन तया उक्तम्, यथा मधुकरः सहकारमञ्जर्यास्वादग्रहणान्तरं पद्मासवेनाकृष्टो भुत्वा सहकारमञ्जरीं विस्मृतोऽभवत् दुष्यन्तोऽपि तथैव ।मधुकररूपी दुष्यन्तः पद्मरूपायाः शकुन्तलायाः आस्वादग्रहणान्तरं सहाकाररूपां हंसपदिकां विस्मृतोऽभबत् ।अतः अत्रापि हंसपदिका तस्याः पत्न्यधिकारात् वञ्चिता भबति ।

मृच्छकटिकम्

धूता : शूद्रकविरचितं मृत्शकटमवलम्व्य दशाङ्कविशिष्टं सामाजिकं प्रकरणमिदम् । अत्र मुख्यनारीचरित्रद्वयं विद्यते –गणिका वसन्तसेनिका चारुदत्तस्य च पत्नी धूता ।भार्यायां विद्यमानेऽपि चारुदत्तः गणिकासक्तोभबत् यतु पत्न्यारसम्मानकरम् । चारुदत्तस्य प्रणयात् सा प्रथमा स्त्री धूता वञ्चिता भबति ।तस्यां पत्युः प्रणयविषये ज्ञातेऽपि पतिं प्रति सा श्रद्धाशीला अभबत् ।न केवलमेतत्, पत्युः प्राणदण्डस्य सन्देशं प्राप्य सा प्राणत्यागे उद्यता अभबत् ।अपि च पत्युः प्रणयात् वञ्चितेऽपि सा वसन्तसेनिकां भगिनीरूपेण वृत्वा स्वपत्युः द्वितीयस्त्रीरूपेण स्वीकरोतिस्म ।परन्तु ईदृशा एका नारी अपि अस्मिन्नाटके चरमलाञ्छिता भबति ।

स्वप्नवासवदत्ता

बासवदत्ता : नाट्यकारेण भासेन विरचितेषु त्रयोदशेषु नाटकेषु षष्ठाङ्कसमन्वितं "स्वप्नवासवदत्तम्"इति अन्यतमम् नाटकम् ।अत्र वासवदत्ता ईदृशमेकं नारीचरित्रं या प्रभोः कुशलार्थं आत्मनं वञ्चितं करोति सङ्गसुखात् नार्य्यधिकाराच्च ।प्रथमे जीवने सा पितृगृहं अत्यजत् उदयनेन सह प्रणयत्वात् ।तत्र पितृगृहसुखात् सा वञ्चिता भबति ।द्वितीयतः पत्युः मङ्गलार्थं राज्यं रक्षयितुञ्च अमात्यस्य यौगन्धरायणस्य परिकल्पनया मगधराजेन सह वैवाहिकसम्वन्धे सम्मतिप्रदानमकरोत् ।अन्यस्मिन् दिशि सामरिकशक्तिवृद्ध्यर्थं मगधराजकन्यया पद्मावत्या सह उदयनस्य विवाहः आवश्यकः इति स्थिरीकृतेऽपि वासवदत्तायां जीविते सति उदयनः विवाहः न करिष्यतीति विचिन्त्य वासवदत्ता आत्मगोपनमकरोत् ।वासवदत्ता मृता इति उदयनेन ज्ञातम् ।अतः अत्र एका नारी सर्वं राज्यसुखं पत्युः साहाचर्यञ्च परिहार्य्यः केवलं स्वामिनः राज्यस्य च मङ्गलार्थं दीर्घदिनं यावत् आत्मसुखं विसर्जयति ।

एकां पत्नीं निकषा तस्याः पत्युः द्वितीयदारपरिग्रहः अतीव दुर्विषहः परन्तु वासवदत्ता स्वेच्छया पद्मावती-उदयनयोः वैवाहिकमाल्यग्रन्थनं करोति केवलं पत्युः मङ्गलार्थं इति अचिन्तनीयः ।काऽपि नारी स्वेच्छया इदृशं कार्यं न करिष्यति परन्तु सा केनापि वाध्यं भबति ।अत्रापि तदेव संघटितम् नार्यधिकारश्च लङ्घितो भबति ।

बङ्गसाहित्येषु नार्यधिकारलङ्घनम्

न केवलं संस्कृतसाहित्येषु वङ्गसाहित्येष्वपि ईदृशं दृश्यं लक्षितं भबति यत्र आजीवनं ताः नार्य्यः यत्सामान्यसुखादपि वञ्चिताः भबन्ति ।तासु रचनासु किञ्चित् दृष्टान्तं निम्नरूपम् ।

चोखेर् बालि

विनोदिनी : विश्वकबिना रवीन्द्रनाथेन वङ्गभाषया विरचितः अयमेकः उपन्यासः यत्र मुख्यचरित्रचतुष्टयं विद्यते –महेन्द्रः,विनोदिनी,आशा,विहारी चेति ।त्रिकौणिकप्रणयकाहिनीमवलम्ब्य रचितः अयमुपन्यासः ।अत्र मुख्यचरित्रचतुष्टयमाश्रित्य काहिन्यामावर्तितेऽपि विनोदिनी एव सर्वप्रकारेण वञ्चिता अस्ति ।महेन्द्रस्य प्रणयः तस्य भार्यामाशायां निवद्धे सत्यपे सः विनोदिनीं प्रति आकृष्टो भबति ।परन्तु विनोदिनी तस्याः हृदयं विहारीं समर्पितमासीत् ।यद्यपि विहारी एतत् सर्वं ज्ञातः आसीत् तथापि तेन विनोदिनी अग्राह्या भवति अनेन च नार्यधिकारः लङ्घितो भबति ।यतः स्वल्पवयस्का एका विधवा नारी शारीरिक-मानसिकसुखेभ्यः वञ्चिता अभबत् ।तत्सुखं तया अनुभाव्यते आशालतया ।विधवां नारीं विवाहे कृते सति विहार्य्याः सामजिकी मर्यादा न्यूनं भविष्यति इति विचक्षणया समाजसचेतकया नार्य्या विनोदिन्या ज्ञातम ।एतदर्थं तया विहारी अनुरुध्यते अकृते दारपरिग्रहेऽपि एकदिवसार्थमपि विहार्य्या सा गृहीतव्या ।तां प्रणयस्मृतिमाश्रित्यैव सा तस्याः अवशिष्टजीवनमतिहातिं करिष्यति । इत्यर्थं रवीन्द्रनाथेनोक्तम् –“ **जीवनसर्वस्व, जानि तुमि आमार् चिरकालेर् नओ, किन्तु आज् एक्मुहूर्तेर् जन्य आमाके भालोबासो । तार् परे आमि आमादेर् सेइ बने जङगले चलिया याइब ,काहार् ओ काछे किछु चाहिब ना । मरण् पर्यन्त मने राखिबार् मतो आमाके एक्टा किछु दाओ ” (बङ्गीयोच्चारणेन लिखितमेतत्**)। विनोदिन्याः हृदयस्य आवेदनमग्राह्य विहारी तां वञ्चितमकरोत् ।अन्तिमे विहार्य्याः कर्मयज्ञे सा आत्मानं नियोज्या प्रेमास्पदस्य साहचर्यं च लव्ध्वा विडम्वितजीवने किञ्चित् शान्तिलाभमकरोत् ।तत्रापि विहार्य्या तस्याः प्रार्थना अग्राह्या अभवत् ।एतदर्थं आजीवनं वञ्चिता भूत्वा वुभुक्षुहृदया सा नारी वाराणस्यां अवशिष्टजीवनमतिवाहितमकरोत् । अतः अत्र एकस्याः नार्य्याः न्यूनतमस्वाधिकारमदत्वा तस्याः अधिकारलङ्घनं भवति इत्यत्र नास्ति सन्देहः ।

विषबृक्षः = साहित्यसम्राटैः वङ्गौपन्यासिकैः वङ्किमचन्द्रैः लिखितः एकः ग्रन्थः "विषबृक्षः" इति यत्र सामाजिकानां सामाजिकजीवनं तेषाञ्च हृदयानां गतिशीलता विद्यते ।यद्यपि अस्य औपन्यासिकस्य अस्यां रचनायां साहित्यसौन्दर्यं विकशितं भवति तथापि सामाजिकरक्षणशीलतामतिक्रम्य सोऽपि नारीं यथायोग्यं सम्मानप्रदर्शनं नाकरोत् ।अत्र उपस्थितं नारीचरित्रद्वयं पूर्णसत्तया संसारगठने साहाये कृतेऽपि आत्ममर्यादातः च्युतं भवति परन्तु समकार्ये नियुक्ताः पुरुषाः श्लाघ्यपदे आसीनाः भवन्ति ।

वङ्गभाषया विरचिते अस्मिन् उपन्यासे प्रधानचरित्रत्रयमावर्तते –नगेन्द्रः, सूर्यमुखी कुन्दनन्दिनी चेति ।सूर्यमुखी आसीत् पतिव्रता, संसारधर्मे निपुणा । तस्याः पत्या सह प्रेमवन्धनमपि अतीव गभीरमासीत् ।परन्तु ईदृशः प्रेमवन्धनयुक्तः पतिरपि इतरां नारीं प्रति आकृष्टो भुत्वा पथभ्रष्टो भवति ।सूर्यमुखिनः स्वामी नगेन्द्रः कुन्दनन्दिनीं प्रति आकृष्टो भवति तथा विना कुन्दनन्दिनीं तस्य जीवनमेव वृथा इति पत्न्याः समीपे व्यक्तं करोति ।पत्न्यां वर्तमाने इतरां पत्नीं प्रति आकर्षणम् अनुचितमिति नगेन्द्रेण ज्ञातम् । स्वपत्नीं प्रति आचरणमिदमन्यायमिति ज्ञात्वाऽपि कुन्दनन्दिनीं प्रति आकर्षणवशात् तेन उक्तम् –" **आमि ए संसार् त्याग् करिब ।मरिब ना – किन्तु देशान्तरे याइब ।बाडी घर् संसारे आर् सुख् नाइ ।तोमाते आमार् आर् सुख् नाइ ।आमि तोमार् अयोग्य् स्वामी ।आमि आर् काछे थाकिया तोमाके क्लेश् दिब ना । कुन्दनदिनीके सन्धान् करिया आमि देश्-देशान्तरे फ़िरिब ।तुमि ए गृहे गृहीणी थाक । मने मने भाबिओ तुमि बिधबा – याहार् स्वामी एरूप् पाथर् से बिधबा नय् तो कि ?किन्तु आमि पाथर् हइ आर् याइ हइ तोमाके प्रबञ्चना करिब ना । आमि अन्यगतप्राण हइयाछि, से कथा तोमाके स्पष्ट बलिब । एखन् आमि देशत्याग् करिया चलिलाम् ।यदि कुन्दनन्दिनीके भुलिते पारि तबे आबार् आसिब । नचेत् तोमार् सङ्गे एइ साक्षात् " (बङ्गीयोच्चारणेन लिखितमेतत्)** ।अत्र पश्यन्तु, साध्वी पत्नी सूर्यमुखी पतीं विश्वासमकरोत् परन्तु तस्याः पतिः विश्वासस्य अमर्यादां कृतबान् । यद्यपि उत्तरकाले नगेन्द्रः पुनः सूर्यमुखीं निकषा प्रत्यावर्तनं कृतः तथापि नगेन्द्रस्य ईदृशमाचरणं न क्षमार्ह्यमनेन च सूर्यमुखिनः आत्ममर्यादा तथा नार्य्यधिकारः खर्वो भबति इत्यत्र नास्ति सन्देहः ।

अत्र अपरैकं नारीचरित्रं कुन्दनन्दिनी या आजीवनमेव वञ्चिता अभवत् ।मातापितृहीनामाश्रयहीनां कुन्दनन्दिनीमाश्रयदानमकरोत् नगेन्द्रः । पुनः नगेन्द्रस्य पत्नी सूर्यमुखी स्वपालितानुजेन सह कुन्दनन्दिन्याः विवाहदानमकरोत् । दिवसान्तरे कुन्दनन्दिन्यां वैधव्ये प्राप्ते सति तां प्रति नगेन्द्रस्य चित्तचाञ्चल्यं दृश्यते ।परन्तु अनेन प्रणयेन सूर्यमुखिनः संसारः विनष्टो भविष्यति इत्यभिप्राये स्वमनोवासना प्रकाशयितुमसमर्था भवति । नगेन्द्रः तस्याभिप्रायः सुर्यमुखिनि विज्ञापिते कृते सति स्वोद्यगेन सूर्यमुखी तयोर्विवाहसम्पन्नं कृत्वा

संसारत्यागमकरोत् । भार्यायां संसारे त्यागे नगेन्द्रस्य मोहः दूरीभुतोऽअभवत् कुन्दनन्दिनींञ्च प्रति स वितृष्णोऽभवत् –**" तोमार् मुखे सूर्यमुखीर् नाम शुनिले आमार् अन्तर्दाह हय् –तोमारइ जन्य सूर्यमुखी आमाके त्याग् करिया गेल ----आमाके सूर्यमुखि वरावर् भालवासित, वानरेर् गलाय् मुक्तार् हार् सहिवे केन ?लोहार् शिकल्इ भाल "।((बङ्गीयोच्चारणेन लिखितमेतत्)**

दुर्भागा कुन्दनन्दिनी स्वामिनः प्रणयतः वञ्चिताऽभवत् । अतः पश्यन्तु, कुन्दनन्दिनी प्रारम्भिके जीवने मात-पितृस्नेहात् वञ्चिता, विवाहोत्तरकाले स्वामिनः मृत्युः, स्वल्पवयसि वैधव्यम् ,अनन्तरं द्वितीयविवाहः तस्माच्च लाञ्छनमपमानं तस्यां प्राप्तम् ।जीवनस्य न्याय्याधिकारात् वञ्चिता भूत्वा मरणमेव च श्रेयमिति मत्वा विषेण सा तस्याः जीवनदीपस्य निर्वापितमकरोत् ।

देवीचौधुराणी : उपन्यासोऽयमपि साहित्यसम्राटेन वङ्किमचन्द्रेण विरचितः । अस्मिन् उपन्यासे सर्वप्रकारकप्रतिपत्तिसत्त्वेऽपि नायिका प्रफुल्लः असम्मानजनके जीवने व्रती भवति ।प्रफुल्लस्य माता निम्नवित्तविधवा ।विवाहात् परमपि दुर्भाग्यबशात् सा (प्रफुल्लः) पत्युः संसारे मर्यादा न प्राप्यते ।प्रभुतप्रतिकूलतामतिक्रम्य क्रमेण सा दस्युसर्दारस्य भवानीपाठकस्य साहचर्यलाभमकरोत् ।भवानीपाठकेनापि प्रफुल्लः अचिरादेव सर्वविद्यायां पारदर्शिनी अभवत् । समाजस्य अत्याचारितानां मनुष्याणां साहाय्यकारी प्रफुल्लः क्रमान्वयेन देवीचौधुराणीति नामकेनाख्यायिता अभवत् ।प्रफुल्लस्य ईदृशमानवकल्याकारिसम्भावना एकदा सहसैव निर्वापिता अभवत् ।दीर्घदिवसात्परं संसारे तस्य पुनरागमनमभवत् । अस्मिन् उपन्यासे प्रफुल्लः सर्वथा एव वञ्चिता भवति ।यथा विवाहोत्तरकाले तस्य असम्मानं भवति तथैव भवानीपाठकेनापि सा व्यवहृता भवति ।अतः नार्य्यधिकारात् सर्वतोपायेन वञ्चिता भूत्वा प्रफुल्लः तस्याः जीवनमेव विनष्टं करोति ।

श्रीकान्तः = वङ्गसाहित्यस्य अपरैकोपन्यासः कथाशिल्पिना शरच्चन्द्रचट्टोपाध्यायेन विरचितः "श्रीकान्तः" इति यत्र राजलक्ष्मीति नामकं विशिष्टं नारीचरित्रमेकं दृश्यते । जीवनं व्याप्य सा राजलक्ष्मी श्रीकान्तस्य सेवायाम् अत्मोतसर्गमकरोत् । अनेन श्रीकान्तं प्रति तस्याः प्रेमाकर्षणं जाग्रतं भवति परन्तु श्रीकान्तेन सा कदापि सामाजिकी स्वीकृतिः न प्राप्यते ।श्रीकान्तं प्रति तस्याः प्रणये जाग्रतेऽपि सा कदापि श्रीकान्तं तत् व्यक्तुं न पारयतिस्म ,यतः सा "पियारी" इत्याख्या सभावेश्या आसीत् ।ईदृशानां नारीनां संसारस्य स्वप्नदर्शनं कदापि समाजे न स्वीकृतं भवति इत्यर्थं तया उक्तम् –**" पुरुष् मानुष् यत मन्दइ हये थाक् ,भाल हते चाइले ताके तो केउ माना करे ना ,किन्तु आमादेर् बेलाय् सब् पथ् बन्ध केन ?अज्ञाने अभाबे पडे एकदिन् या करेछिलाम् चिरकाल् आमाके ताइ करते हबे केन ?केन आमादेर् तोमा भालो हते देबे ना ?" इति । (बङ्गीयोच्चारणेन लिखितमेतत्) ।**

आजीवनं श्रीकान्तस्य सेवायां नियोजितेऽपि राजलक्ष्मी श्रीकान्तेन वञ्चिता भवति तस्याः अधिकारोऽपि क्षुण्णो भवति ।

मूल्यायनम्

वङ्गसंस्कृतसाहित्ययोः किञ्चिन्मात्रमालोच्यते मया ।एतेन दृश्यते यत्, सर्वेषु साहित्येषु नार्य्यधिकारः, मर्यादा ,सम्मानञ्च क्षुण्णं भवति । पुनः पुनः नारी भवति वञ्चिता । संसारे नारीणां भूमिका यद्यप्यनस्वीकार्यं तथापि ते सर्वदैव अवहेलिताः ,वञ्चिताः भवन्ति अक्लान्तश्रमान्तरेऽपि ते भवन्ति लाञ्छिताः । पुरुषतान्त्रिके समाजे नार्य्यः वारम्वारमुपेक्षिताः भवन्ति ।विस्तीर्णेषु संस्कृतसाहित्येषु यथा नारीणां वञ्चनायाः चित्राणि दृश्यन्ते तथैव वङ्गसाहित्येष्वपि ।सर्वत्रैव नार्य्यः भोग्यवस्तुरूपेण पर्दानसीनरूपेण च उल्लिखिताः सन्ति ।एतदर्थं रवीन्द्रनाथस्य आक्षेपोक्तिः –

“ नारीके आपन् भाग्य जय् करिबार्
केन नाहि दिबे अधिकार् ,
हे बिधाता ?” इति ।(बङ्गीयोच्चारणेन लिखितमेतत्) ।

यद्यपि अधुना चतुष्कौणिकात् सामाजिकक्षेत्रात् मुक्त्वा ते पुरुषेण सह सर्वविधेषु कर्मयज्ञेषु नियोजिताः तथापि ते भवन्ति लाञ्छिताः अबमानिताः ।इयमेव अस्माकं संस्कृतेः आधुनिकत्वम् ।अत्र स्मर्तव्यं यत्, संस्कृतसाहित्येषु वङ्गसाहित्येषु च नार्य्यधिकारः न लङ्घितो भवति तत्र ते लेखकाः केवलं तत्कालीनसमाजस्योदाहरणं प्रदत्ताः ।यतः द्विप्रकारकसाहित्यिकाः एव नारीनां सम्मानं प्रदत्ताः ।प्राचीने वैदिकसाहित्येषु यथा अस्य दृष्टान्तानि सन्ति तथैव वङ्गसाहित्येष्वपि ।अतः अस्माकं प्रार्थना पुरुषतान्त्रिके समाजे नार्य्यः एव स्वललाटं जेतुं समर्थाः भवेयुः ।अनेन एव यथा समाजस्य परिवर्तनमागमिष्यति तथैव नार्य्यः अपि सर्वत्र श्लाघ्यासनं प्राप्सन्ति ।सार्थकं भवतु ऋषिभिरुक्तिः –

“ यत्र नार्यस्तु पुज्यन्ते, रमन्ते तत्र देवताः ”।इति ।

सहायकग्रन्थाः

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FORENSIC FIREARMS AND CRIMINAL INVESTIGATION

Suresh Kumar
Assistant Professor, School of Law, IEC University Baddi Himachal Pradesh

Abstract
Firearms includes revolvers, pistols, guns, machine guns, sub machine guns etc. In forensic science's help the criminal investigation and examination of firearms. Forensic Science Lab provides the report of examination of firearms. Forensic Science Lab report covered under Section 45 of Expert opinion of Indian Evidence Act, 1872 and court not bound to expert opinion/forensic reports. In this paper is explaining the introduction, type's firearms, criminal investigation, expert evidence under Section 45 of Indian Evidence Act, 1872, case laws regarding forensic firearms, conclusion and suggestion.

Keywords: Forensic Firearms, Criminal Investigation.

Introduction

Firearms define under the Section 2 (e)[1] of the Arms Act, 1959. Those firearms which can be easily handled, carried and operated by single persons are called 'small arms'. They include handguns, (pistols and revolvers) which are fired with one hand; shoulder arms which are fired from the shoulder (shotguns, rifles and muskets) and other firearms like machine and sub-machine guns. Some of these firearms are 'automatic' and fire a large number of rounds in short times.[2]

The firearm is device to hurl a projectile or projectiles. The force is supplied by the creation and expansions of gases usually from the burning of powder charge. In air rifles and pistols the projectile are hurled by the expansions of compressed air.[3] Firearms are frequently involved in murders, attempted murders, accidental shootings, suicides, dacoits, robberies, rioting, police firings, and police encounters and more recently in terrorist activities. They often jeopardize the lives and liberties of human being. In fact the word firearm in criminal investigation spells serious crime-death, killing or murder. The society, therefore, views the use of firearms in crimes seriously and expects the keepers of law to prevent their misuse effectively.[4]

Firearms and tool mark analysis involves the examination of any firearm that is suspected of being used in a criminal act. Criminalists can determine the kind of bullet used and whether it was fired from the gun used to commit the crime. Tool mark

[1]Section 2(e) of the Arms Act, 1959.
[2]B.R. Sharma, *Forensic Science in Criminal Investigation and Trials*445(Universal Law Publishing Co. Pvt., Ltd., New Delhi,2014).
[3]*Id* at 444.
[4]B.R. Sharma, *Firearms in Criminal Investigation & Trials*3 (Universal Law Publishing Co. Pvt. Ltd., New Delhi, 2012).

analysis includes any object suspected of containing the impression of another object that served as a tool in the commission of a crime.[5]The ammunitionused in modern firearms contains three elements integrated inside the cartridge. The elements are bullet, propellant and primer. The bullet is the actual projectile which will come outside the barrel after firing. It is made with different metals like brass, steel, aluminum and also with rubber and mood. Most of the bullets contain lead along with other metals for good performance and accuracy.[6]

The forensic scientist is interested in harnessing his knowledge for his pursuits to achieve the two-fold aim of criminal justice-the guilty shall not escape and the innocent shall not suffer. The basic premise in using scientific evidence in criminal justice delivery system is that the forensic scientist is neither a witness for the prosecution nor witness for the defense, but he is a witness of the court of law.[7]It is evident that in spite of several limitations today, forensic scientists, as a witnesses in a court (whether acting for prosecution or for the defense), make important contribution to the criminal justice process. Apart from their contribution in solving traditional crime cases, the services of forensic scientists are being progressively utilized in the areas of anti-terrorist operations etc. Utilization and application of forensic science in these fields involves adaption of both, known and newer scientific techniques for crime investigation.[8]

Criminal Investigation of Firearms Cases

Challenges before a genuine investigator are manifold, generally of which are:

- Identification of location of crime.
- Visit the location and collection of physical evidence from scene of occurrence.
- Detection of weapon used in the crime.
- Collection of evidence from inputs.
- Supply of one or more missing link in a chain of evidence.
- Strengthening of a weak link or links in a chain of evidence.
- Clarification of doubts in the preliminary investigative stage, which may or may not be significant at a later stage.[9]

Firearm evidence are often present in crimes such as murder, attempt to murder, assault, suicide, police encounter, police firing etc. examination of firearm evidence play a vital role in the investigation of such crimes. Examination of firearm evidence plays a vital role in the investigations of such crimes.[10]

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[5]Norman R. Dalrymple and C. Chandrasekhar Rao, *the Encyclopedia of Forensics & Criminalistics Analysis*14 (Dominant Publishers and Distributors, New Delhi, 2011).
[6]Frost G.E., *Ammunition Making: An Insider's Story*27(National Rifle Association of America,Washington, DC, 1990).
[7]B.B. Nanda &Dr. R.K. Tewari, *Forensic Science of India* 7 (Select Publishers, New Delhi, 2001).
[8]*Ibid.*
[9]AnoompamModak, *Scientific Techniques in Criminal Investigation*2 (Universal Law Publishing an imprint of Lexis Nexis, Gurgaon, 2016).
[10]Dr. B.P. Maithi, *Physical Evidence in Criminal Investigation &Trials*274 (Selective & Scientific Books, 2012, New Delhi, 2012).

The investigating agency has to get answer of many questions such as: (i) what kind of weapon used? (ii) Was the weapon working condition? (iii) What was the range and direction of fire? (iv) Did the specific weapon fire bullet which was recovered from deceased's body? (v) Did a particular person fire the weapon? Whether the case was an accident, homicide or suicide? This also includes examination of cartridge, cartridge cases, bullets, wads, gunshot residues, etc.[11]

The weapon, in suicides or accidental deaths, or their simulated versions, its position and conditions *vis*-a-*vis* other evidence at the scene are extremely important. Fired cartridge cases, projectiles, wads and powders residues, the projectiles may be embedded in furniture, walls, trees, etc., smell of power charge burning.[12] the location of the scene and the routes of ingress and egress, he sketches the scene to a scale and gets a video-film of the scene of occurrence prepared, covering all aspects of the scene, the time of arrival, the state of doors, windows, ventilators, taps etc. The name of the victim, suspects, witnesses, helpers etc., the evidence collected, how packed and the witnesses to the collection, packing, sealing etc.[13]

The investigator can confine his studies to small arms, *i.e.*, guns, rifles, pistols, revolvers and magazine weapons. The constituent parts of all these weapons are the lock, the stock, the barrel and the accessories. If the barrel is long and the butt end of the stock transverse to it, so that, when fired, the weapon can be placed against the shoulder, it is called a gun or rifle.[14]

A firearm consists of two important parts: (1) the barrel and (2) the mechanical part which includes the chamber, breech face, firing pin, extractor, ejector and trigger. Barrels are of two types: (1) smooth bore and (2) rifling with lands and grooves. All barrels are manufactured from drilled solid steel pieces.[15]

If the barrel is short and the stock curved down so that the weapon must be held in the hand when fired, it is a pistol or revolver. If the weapon can be loaded only from the muzzle end of the barrel, we call it a muzzle-loader: if, on the other hand, it is loaded at the breech end, we call it a breech-loader.[16]

Any firearm found at the spot of the offence should not be snatched up at once. It must be ascertained whether they have passed through anybody's hands before they are collected. If any firearm found has not been touched by anybody, the investigator may

[11] *Ibid*.
[12] B.R. Sharma, *Scientific Criminal Investigation* 247 (Universal Law Publishing Co. Pvt. Ltd., New Delhi, 2012).
[13] *Supra* note 4 at 116.
[14] Ronald Martin Howe, M.C., *Criminal Investigation A Practical Textbook for Magistrates, Police Officers and Lawyers* 164(Sweet & Maxwell Limited, London, 1949).
[15] Rinker R.A., *Understanding Firearm Ballistics*128 (Mulberry House Publishing, Clarksville, 2004).
[16] *Supra* note 14.

find valuable fingerprints of the criminal on it. The investigator should note the number; make, etc., of the firearm found and carefully pack it up for expert examination.[17]

Whenever a firearm is used to carry out a design against anybody's person, a very careful examination of the cartridge is of paramount importance, with particular reference to the nature of the crime, the marks and other features indicative of the make. The manufacturer's name and other allied points have to be noted. A record of the results obtained in consequence of such scrutiny and test should be maintained for the assistance of the crime investigator.[18]

Bulk of the work in Forensic Ballistics consists in identification of the weapon, which recovered or is used. The basis of identification is the law of individuality. In case of a recovered weapon, it may be required to know whether the weapon is a properly manufactured one or of illegal manufacture. The serial number, make and model, the type and the bore/caliber of the weapon are also required to be known as a part of laboratory investigation. At times the criminal destroys the serial number in an attempt to prevent identification or being claimed by the lawful owner of the gun. It is the laboratory's role to provide an answer to all such questions. The principle of identification in such cases is provided by the law itself.[19]

Expert evidence

Expert evidence is based on formal and special study, training or experience that imparts the competency to form an opinion upon matters associated with that subject. It is the duty of the authoritative expert to present the necessary scientific/technical criteria to enable a court to test the accuracy of its own conclusions and to form its own independent judgment of the evidence. Before given the permission to state their opinion, the 'experts' are usually questioned by the court to evaluate their qualifications and experience in the subject.[20]

Expert evidence in shooting case has great importance because the evidence: (i) Is involved in heinous crime like murders, dacoities, suicides, attempted murders, accidents, etc. often resulting in loss of life, limb or serious injuries?, (ii) Provides definite linkage between the criminals and the crime, through the firearm and the fired ammunition. (iii) Permits the determination of the range of fire, direction of fire and differentiation between fake and real firearm injuries. [21]

An expert appearing in the court states his qualifications, training and experience, both in related field and in actual firearm examination. The qualifications and experience are, thus brought on record for the convenience of the court to decide whether the person

[17]K. Krishna Murthi, *Police Diaries, Statements Reports, Investigation and Arrest*119(Law Book Company,Lucknow, 1963).
[18]AnjaniMadan Gaur, *The Law Relating to Arms, Ammunition and Explosives*13 (Eastern Book Company, Lucknow1970).
[19]Kaushalendra Kumar, *Forensic Ballistics in Criminal Justice* 216 (Eastern Book Company, Lucknow, 1987).
[20]SaritaJand, *Forensic Science & Law* 69 (New Era Publication, Faridabad (Haryana), 1st edn., 2017).
[21]*Supra* note 12 at 239.

giving evidence is an expert[22] under Section 45 of the Indian Evidence Act, 1872.[23]Section 45 of the Indian Evidence Act requires that only those persons can give expert evidence that are specially skilled in the art or science, in which they are expressing their opinions. The idea of placing the qualifications of the expert on record is therefore, to show that by education, training and experience the expert is specially qualified to express an opinion on the subject in hand.[24]

Expert evidence must be viewed not as a piece of substantive evidence of a conclusive nature, but as a piece of corroborative evidence to other evidence in the case. The corroborative evidence in order to be of any value must be on material particulars and the facts relied on for corroboration must be established by reliable and independent evidence. The expert evidence is weighed in the same way as other evidence.[25]

Case Laws regarding Forensic Firearms

In *Ram Prasad Sharma* v. *State of Bihar*[26] the learned counsel further contends that it was doubtful that 12 rounds would have been fired. He points out the number of injuries received by the villagers. But these injuries support the prosecution story. From the injuries on the various persons who had died and whose bodies had been held to have been cremated by unidentified persons, it appears that 20 persons had received gunshot injuries; one of them had as many as 14 lacerated wounds and another had 10 lacerated wounds. Apart from that there is no reason to doubt the oral evidence given in this case that a number of rounds were fired.[27]

In *Bhag Singh* v. *State of Punjab*[28]neither the genuineness of the recoveries of the empties from the roof of the house of Bhag Singh nor the recovery of gun Ex. P.12 from the person of Bhag Singh at the time he was apprehended has been challenged on behalf of the defense nor the correctness of the opinion given by the ballistic expert has been challenged on its behalf. It has, however, been urged by ShriDara Singh, counsel for the appellants that according to the statement given by Shri J.K. Sinha, Assistant Director, Forensic Science Laboratory, Chandigarh P.W. 20, who examined and tested the three empty cartridges, Ex. P/13/1.3 recovered from the roof of the house of Bhag Singh appellant, they were fired from gun, Ex. P. 12 used by Bhag Singh appellant and that no empty cartridge has been recovered used in the gun, with which Mehar Singh appellant was armed and with which, according to the evidence of eye-witnesses, he fired one shot at Basant Singh deceased. The question of recovery of empty cartridge dropped from the gun of Mehar Singh appellant will arises only, if there is evidence to show that

[22]*Supra* note 2 at 521.
[23]Section 45 of the Indian Evidence Act, 1872, *Opinions of experts: When the Court has to form an opinion upon a point of foreign law or of science or art, or as to identity of handwriting [or finger impressions], the opinion upon that point of persons specially skilled in such foreign law, science or art, [or it questions as to identity of handwriting] [or finger impressions] are relevant facts. Such persons are called experts*.
[24]*Supra* note 2 at 521.
[25]B.S. Nabar, *Forensic Science in Crime Investigation* 360 (Asia Law House, Hyderabad, 3rd edn., 2014).
[26]1970 CrLJ 496: AIR 1970 SC 326: (1970) 1SCR 694.
[27]*Ibid.*
[28]1971 Cr LJ 903 (P&H).

after Mehar Singh fired his shot at Basant Singh deceased he emptied his gun. It is nowhere stated by any of the eye-witnesses, and no such question was asked from them in course of their cross-examination, that after Mehar Singh had fired his shot he emptied the gun.[29]

In *State of Himachal Pradesh* v. *Ram Singh*[30] the ballistic expert could not connect the two pieces of the bullet with the rifle but nonetheless he opined that a shot was fired from this rifle and the weapon was a fit one and could be utilized for firing. In these circumstances the inability of the expert to connect the two fragments of the bullet with the rifle could not be a circumstance necessarily leading to the interference that the said bullet was not shot from the rifle. Any expert may be ballistic or otherwise, can only give an opinion evidence. In a case where eye-witnesses are reliable and testify definitely to the weapon of attack any opinion of an expert even if it indicates a circumstance which does not exactly fit in prosecution story would be of no avail and can easily be ignored. All the same in the instant case, the opinion of the expert cannot be stated to negative the prosecution version in any manner.[31]

In *Kartar Singh* v. *State of Punjab*[32] It has next been argued that the evidence regarding the recovery of the fired cartridge from the place of occurrence were prepared, one for the 11 fired cartridge cases of 12 bore guns and another for the two brass fired cartridge cases of the rifle, only one parcel was sent to the ballistic expert. A reading of the statement of J.K. Sinha (P.W. 14), who is the Assistant Director of the Forensic Science Laboratory, Chandigarh, shows that one sealed parcel was received in the Laboratory on January 3, 1972, through Constable Ujagar Singh, and it contained eleven 12 bore fired cartridge cases and two .315 fired cartridge cases. The statement of the witness in regard to the delivery of the sealed parcel in the Laboratory on January 3, 1972 has not been challenged before us, and there is no doubt that all the 13 fired cartridge cases reached the Forensic Science Laboratory of January 3, 1972. As none of the accused had been arrested by that time, and as no firearm had been recovered till then, the investigating officer had nothing to gain by tampering with the fired cartridge cases for he was not in possession of the firearms with reference to which they were to be tested in the laboratory. For the same reasons, the prosecution had nothing to gain by falsely showing the recovery of the brass fired cartridge cases, for it was found in the forensic laboratory that they had been fired from Darshan Singh's rifle Ex. P. 18 which was recovered only on January 10, 1972. It was, therefore, not possible for the prosecution to plant them at the scene of occurrence on December 31, 1971 when it had no reason to think that Darshan Singh would be arrested some 10 days later with rifle from which those cartridges has been fired.[33]

[29] *Ibid.*
[30] 1973 Cr LJ 150 (Simla).
[31] *Ibid.*
[32] 1977 Cr LJ 214: AIR 1977 SC 349.
[33] *Ibid.*

Conclusion

Forensic science is important role play of firearms investigation and examination**.** Forensic science technologies search the truth of investigation of firearms. Forensic ballistic expert helps the firearms investigation and forensic examination procedure. Forensic science report covered under Section 45 of Expert opinion of Indian Evidence Act, 1872 and these report supportive, suggestive nature and Judge not bound expert opinion reports.Some suggestions: To improve forensic science evidence in criminal cases; to forensic lab should work truly, unbiased, correct and independent; To follow proper documentation for investigation of firearms etc.

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EFFICACY OF BEHAVIOUR ACTIVATION, RATIONAL EMOTIVE BEHAVIOUR THERAPY IN TREATMENT OF MAJOR DEPRESSIVE DISORDER: RANDOMIZED CONTROL TRAIL

Shweta Jha*and Digambar Darekar**
*Assistant Professor, AIBHAS , AUUP, Noida
** Dr. B.N. Purandhare Arts S.S.G.G. Commerce and Science College

Abstract:

Depression is been identified as the most common cause of disability among those suffering from mental illness; with over 332 million people been affected by it globally.In India, the demographics collected by National Mental Health Survey (NMHS) for the year (2105-2016) suggested that one in twenty i.e. 5.25% individuals over 18 years of age have at least once in their lifespan suffered from one depressive episode; this amounting to a figure of 45 million Indians in the year (2015-2016); and the prevalence still increases. Thus the present study was conducted to explore the efficacy of new generation psychotherapy on Indian population.

Methods: A randomized control trial comparing 10 weeks of behavioral activation group therapy (BA), REBT group therapy, and wait list control group on patients suffering from MDD was conducted. Intent to treat analysis for 90 patients, in three groups; was done to assess the patients for change in BDI score; assessed at four time points: pre intervention, post intervention, 2 month and 6 month follow up analysis. **Results:** indicated decreased level of depression as indicated by BDI on a post test analysis for REBT and BA group in comparison to WLC. Post treatment two- months and six-month follow-up analysis indicated further decrease in the level of depression, for both BA and REBT group in comparison to WLC Group.

Conclusion: Group interventions of BA and REBT are both effective form of treatment; as it not only helped in reducing the level of depression but also helps in maintaining the change acquired through therapy on an individual level.

Key words: Rational Emotive Behavior Therapy (REBT), Randomized Control Trial (RCT), Major Depressive Disorders (MDD).

Introduction:

Depression is identified as the most common illness with over 332 million people been affected by it, being stated as the leading cause of disability worldwide, and a major contributor to the overall global burden of disease it can also be a life threatening condition as suicide when in moderate to severe intensity. Depression goes beyond the feeling of gloominess, crying spells and anger for the one who suffers from it.

Depression is Continuous feeling of overwhelming sadness, low mood, low appetite and decreased sleep accompanied by other emotional and physical symptoms. Recurrent episodes of depression; not only affects the personal, occupational and social lives of these individual's but it also affects the life of their close ones and the caregivers. Thus, makes it very important to be dealt with effectively and efficaciously. Several therapies have been found to be efficacious in treating depression but there is a dearth of studies in Indian context especially in relation to evidence base research in area of therapeutic interventions in treatment of mental illness. Reviews have stated Rational Emotive Behaviour Therapy (REBT) had been found to be efficacious in treating Major Depressive Disorder (MDD). Several meta–analysis and randomized control trials by David D, Szentagotai A, Lupu V, CosmanD(2008); Lyons, L. C., & Woods, P. J. (1991);Gonzalez, J. E.,(2004); Sava FA, Yates BT, Lupu V, Szentagotai A, David D,(2009); have concluded that REBT was superior to control group and medication in treating and managing depression and is in-power with Cognitive Behaviour Therapy (CBT) in treating Depression. Similarly several Meta analysis and review articles have concluded that Behaviour activation is an efficacious form of therapy for depression and is as efficacious as CBT; Ekers, D. and Richards, D. and Gilbody, S. (2008); Dobson, et.al. (2008); and Porter, J. F., Spates, C. R., &Smitham, S. (2004). However, when Indian researches were reviewed on REBT, to explore whether a similar model of REBT is effective in dealing with depression. It was found that there is a huge dearth of research which would help researcher to conclude the effectiveness of therapy in Indian context. Thus, the present study aimed at assessing the efficacy of REBT group therapy in comparison to WLC group on Indian population to assess its efficacy in treating and managing relapse.

Methods:

The present study was a prospective, randomized control trial; permuted block randomization technique was used to assign the subjects to two groups to follow intervention for 10 weeks. The randomization sequence was permuted by the statistician in order to be unknown by the investigator. The independent variable in the study was the treatment provided to all participants through REBT and those who received no active treatment in WLC. With dependent variables as the scores of Depression (moderate, severe) as assessed by Beck Depression Inventory (BDI).

Samples were collected from hospitals and rehabilitation centers in Pune city providing psychiatric treatment. A total of 202 individuals were screened and only 90 men and women between age 20 years to 45 years as per diagnostic criteria of DSM – IV TR for MDD; with BDI score of 20 and above and no co- morbidity as indicated on PDSQ were included as sample for the study.

FIGURE: RCT CONSORT

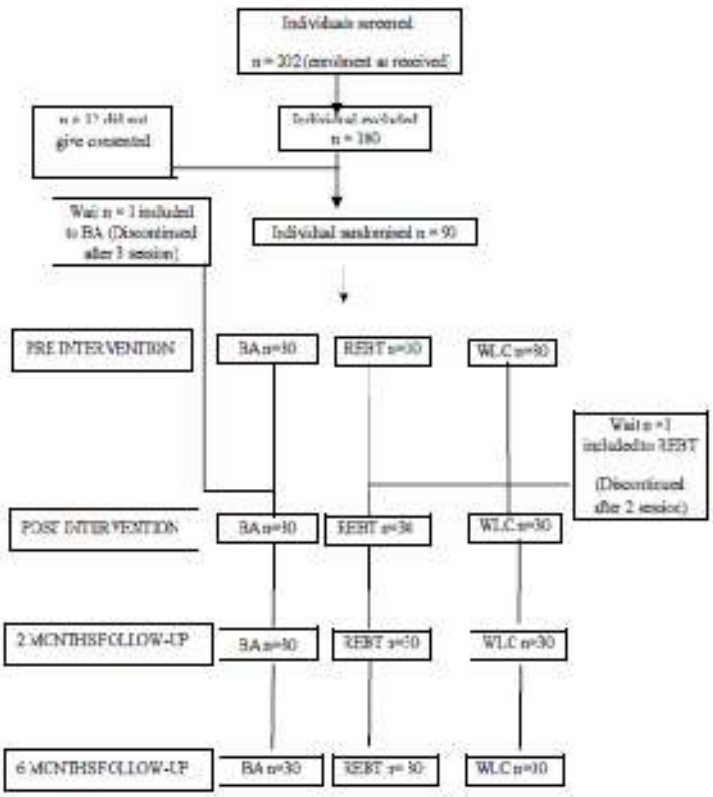

Figure 3.1: CONSORT Diagram RCT

Procedure:
Behaviour Activation (BA)

Ten sessions of 60 minutes each of BA group intervention were conducted over a span of ten weeks; with 10 participants in each group. Each session followed the same basic pattern and focused on specific skills and techniques. The therapeutic

protocol and sessions was adapted from work of (Jacobson et al., 1996). It was made sure that all participants had a proper note with them which they have taken down during the sessions, with adequate homework been assigned after each session.

Rational Emotive Behaviour Therapy (REBT):

Ten sessions of 90 minutes each of REBT group intervention were conducted over a span of ten weeks; with 10 participants in each group. Each session followed the same basic pattern and focused on specific skills and techniques. The therapeutic protocol and sessions design was written based on the REBT book by Albert Ellis. Each session included session notes and homework assignment. It was made sure that all participants had a proper note with them which they have taken down during the sessions.

Wait List Control (WLC):

Individuals in WLC group were seen by counselor for brief meet -up. Individuals in waiting group were not being given structured sessions; and were seen by a different counselor as frequently as individuals receiving REBT for a brief 15- 20 minutes. These sessions mostly focused on their medicine adherence and current life stressor if any. These individuals were taken for therapy post completion of research intervention and 6 months follow-up; based on their avaibility and willingness to attend therapy.

Assessment:

The clinical assessment using; BDI to assess the level of depression was done in 4 stages. Pre- intervention level, to get a base line score of depression. Post intervention assessment where same tools were used to assess difference in score of depression immediately after 10 sessions of REBT group intervention. Further a 2 month and 6 month follow up assessment post intervention was conducted to assess the change in level of depression. During assessment the socio-demographic details, medication use, a general idea of work and time management, with practice and use of homework assignment was also recorded.

Result:

The results indicated that; the mean age of the participants were 31 years 6 months. The sample consisted of more women (n =50) and married (n = 57) individuals; who were graduate(n = 43) and post graduate (n=19) educated; and belonged to middle socio-economic status (n=64). However, there was no significant difference observed between groups. The results also indicated that scores of Depression as assessed on BDI Pre- intervention were indicative of severe Depression (m = 31, S.D 7.8). Thus, making each group homogeneous in comparison. However, there was a significant reduction in these scores for post intervention and at 6 months follow-up were majority of

participants showed depression score be reduced to mild and moderate (m = 14, S.D. 7.8).

Analysis to test assumptions:

TABLE 1: Mean value for Absolute Difference and Percentage Change-in Three Groups between Two-Time Specifications

Group	PT – B	2m f/u – B	6m f/u – B
GR I			
AD	-10.60	-15.97	21.00
PC	-33.31%	-50.90%	-67.72%
GR II			
AD	10.80	-17.97	-21.97
PC	33.55%	-55.89%	-69.00%
GR III			
AD	-2.97	-5.97	-8.97
PC	-9.37%	-18.96%	-28.24%

AD → Absolute Difference in depression score, PC → Percent Change (-) → Reduction in depression score

The table above shows mean value of absolute difference and percentage change for depression score when two specific time points are compared group wise for all three groups (GR I, GRII,GRII). The table overall shows a significant difference in the score of depression and percentage value (PC) for depression scores for within group comparison.

For Group 1: There is a clinically significant difference in the percentage value (PC) score when post-intervention depression scores are compared to baseline measures of depression with a PC value of (33). Similarly, when depression scores of 2-months follow-up were compared to baseline score it yielded a clinically significant PC value of (51) and depression score for 6-months follow- up score when compared to baseline also yielded a significant PC score of (68).

The above findings indicated that behaviour activation intervention is an effective therapeutic method for improving conditions in MDD and helps in relapse prevention and maintaining the overall healthy life standards in individuals.

Studies by (Dimidjian., 2006; Ekers, D. and Richards, D. and Gilbody, S. 2008; Dobson., et.al. 2008); have arrived at similar results: BA is more efficacious that CT and pharmacotherapy and is best form of therapy in treating severe depression. BA is also efficacious in prevention of relapse and recurrence of symptoms.

For Group 2: There is a clinically significant difference in the percentage value (PC) score when post-intervention depression scores are compared to baseline measures of depression PC value of (34). Similarly, when depression scores of 2-months follow-up were compared to baseline score it yielded a clinically significant PC value of (56) and depression score for 6-months follow- up score when compared to baseline yielded a PC score of (69).

All the above findings indicated that Rational Emotive Behaviour Therapy intervention is an effective therapeutic method for improving conditions in MDD and helps in relapse prevention and maintaining the overall healthy life standards in individuals.

Research done by (Macaskill N.D. & Macaskill,1996); (David D, Szentagotai A, Lupu V, Cosman D. 2008); (Zhaleh N, Mohammadreza Z, Faramarzi M.2014); (Lyons, L. C., & Woods, P. J. 1991); have concluded that REBT group and individual therapy are both efficacious in reducing depression among adults and adolescents. It is also a cost-effective method and better than pharmacology therapy alone.

For Group 3: There is no significant difference in the percentage value score when post-intervention depression scores are compared to baseline measures of depression with a PC value of (9). Similarly, when depression scores of 2-months follow-up were compared to baseline score it yielded a clinically significant PC value of (19) and depression score for 6-months follow- up score when compared to baseline yielded a PC score of (28).

All the above findings indicated that when treated only with medication the improvement in depression is not clinically significant and that medication alone is not effective in changing the quality of life in individuals when compared to those who've been treated with both pharmacotherapy and cognitive and behavioural interventions. The overall result indicates that when treated with a combined treatment (psychotherapy and pharmacotherapy) or psychotherapy alone improvement shown in individuals suffering from MDD are three folded in comparison to those treated only with medication. If a between group comparison of PC is done it does not have any clinically significance, this indicates that both therapeutic interventions are efficacious in treating MDD. However, according to the present finding, if the sample size is increased three folded there is a high probability of REBT to be more efficacious than BA in treatment of MDD.

TABLE 2: Between Group Comparison – P-values. Two Independent Samples't-test (t T) and Mann-Whitney Test (MwT) with (Bonferroni corrections)

Change in Time	Gr.I vs Gr.II *P*	Gr.I vs Gr.III *p*	Gr.II vs Gr.III *P*
PT from B			
t T	0.8983	<0.0001*	<0.0001*
MwT	0.4756	<0.0001*	<0.0001*
2mf/u from B			
t T	0.3114	<0.0001*	<0.0001*
MwT	0.1130	<0.0001*	<0.0001*
6mf/u from B			
t T	0.6487	<0.0001*	<0.0001*
MwT	0.4321	<0.0001*	<0.0001*

P<.001

The table above 4.10 shows between group comparisons across time points

When group 1 is compared to group 2 for post treatment score from baseline score for depression: it yields a *p* value of (.89) which is non- significant. When same groups are compared for 2-monthsfollow-up score to baseline score for depression: it yields a *p* value of (.31) which again is non-significant. For the same groups when they are compared for 6-months follow-up score to baseline score of depression: it yields a *p* value of (.64) which is not a significant value, this indicates that the two treatment groups BA compared to REBT has a small effect size. And thus, it is not conclusive of which therapeutic intervention is better in treating MDD. The finding also indicates that therapeutic techniques or methods involving both behavioural and cognitive strategies are helpful in treating and improving conditions in those suffering from even severe level of depressive symptoms. The results above could also be affected by small treatment sample. However, when group 1 is compared to group 3 and group 2 is compared to group 3 respectively; across the three time points: i.e. when for both the conditions post treatment score is compared to baseline score of depression; it yields a *p* value of (.0001) which is highly significant. When 2-months follow –up score is compared to baseline score for depression it yields a *p* value of (.0001) which is again highly significant. And when 6-months follow-up score was compared to baseline score of depression it yields a *p* value of (.0001) which is again very significant.

All the above findings indicate that the results are not merely due to chance factor, environmental factors, other external modulating factors or Individual variable like: motivation, age, marital status, gender or therapist variable like: empathy, language, openness and listening skills. The results indicated are strongly suggestive of the fact that group interventions; for both form of therapeutic intervention BA and REBT is due to their therapeutic structure and techniques involved. The result also suggests that therapeutic intervention is always better than control group who were not exposed to any type of structured therapeutic treatment. As individuals in control group and treatment group were both subjected to medicinal treatment the results also indicate that medicine alone does not have effect in treating and controlling relapse in individuals with MDD.

The above finding is also supported by the metal analysis of randomised control trials by (Ekers., et al 2014); where the research concluded that, Behavioural Activation was superior to control group and medication in treating and managing depression. The meta-analysis too showed no association with outcome related to population in hand, approach towards clinical diagnosis, and number of sessions and qualification of therapist to have any effect on the outcome. Similarly, meta - analysis report by (Lyons, L. C., & Woods, P. J. 1991) ; arrived at a conclusion that patients receiving RET showed significant improvement over baseline measures and control groups. The result above is also indicative towards a numerical difference in score of post-intervention, 2-months follow-up and 6-months follow-up scores of depressions for REBT in comparison to BA and thus it could be a preferred form of treatment for MDD if the sample size is increased and reassessed using the same trend.

TABLE 3: Comparison Mean Effect across Three Group Effect Using ANOVA and Kruskal Wallis test.

Time Point	ANOVA		Kruskal-Wallis Test	
	'F'	P-value	Test statistic	P-value
AT (B)	0.3474	0.7074	1.8296	0.4005
AT (PT)	22.1405	<0.001*	28.9088	<0.001*
AT 2mf/u	56.0012	<0.001*	44.3154	<0.001*
AT 6mf/u	85.5993	<0.001*	51.9534	<0.001*

P value for two independent samples 't' test (t T), P value Mann-Whitney test (MwT)
****: P-value<0.0001 (elaboration of table 4.8)***

The table (4.8) shows that at the 'PRE' [i.e. baseline] stage Mean and (S.D.) are 30.40 (9.04) for group-1; 31.70 (7.71) for group-2 and 32.00 (6.80) for group-3.

In the table above (4.11)Very small differences are seen in between groups and these differences are just by chance as Analysis of Variance (ANOVA) 'F' is only 0.3474 with corresponding P=0.7074 [which implies that if group means are same, chances of observing/getting such difference are about 71% likely]. This is later confirmed by 'Nonparametric Kruskal-Wallis Test' as the corresponding P=0.4005.

At the 'POST' on table (4.8); [i.e. immediately after therapy] stage Mean and (S.D.) are 19.80 (5.88) for group-1; 20.90 (5.42) for group-2 and 29.03 (6.28) for group-3. There was a greater (i.e. significant) reduction in group 1 and group 2 but in group 3 the reduction is minimal (i.e. not significant) as shown in table (4.11); so that the differences seen between groups are beyond chance (i.e. very unlikely) as Analysis of Variance (ANOVA) 'F' is as large as 22.1405 with corresponding P<0.001 [which implies that if group means are same, chances of observing/getting such difference are only very small [<0.001, i.e. 1 in 1000] therefore most likely they are different in reality (that is groups are drawn from different populations). This is later confirmed by 'Nonparametric Kruskal-Wallis Test' as the corresponding P<0.001. Similar results are seen later at 2m [after two-months post therapy] stage as well as at 6m [after six-months post therapy] stage.

Table 4: Within-group Comparisons (TWO TIME-POINTS AT A TIME)

Paired Comparison (Time) BDI scored	GROUP-I		GROUP-II		GROUP-III	
	Paired t value P-value	P-value WSRT	Paired t value P-value	P-value WSRT	Paired t value P-value	P-value WSRT
Pre x Post	t=8.4495 P<0.001	P<0.001	t=11.6724 P<0.001	P<0.001	t=15.2402 P<0.001	P<0.001
Pre x 2m	t=10.6450 P<0.001	P<0.001	t=14.2605 P<0.001	P<0.001	t=15.7432 P<0.001	P<0.001

Pre x 6m	t=12.9494 P<0.001	P<0.001	t=16.2542 P<0.001	P<0.001	t=20.7176 P<0.001	P<0.001
Post x2m	t=11.7024 P<0.001	P<0.001	t=10.0300 P<0.001	P<0.001	t=10.7306 P<0.001	P<0.001
2m x 6m	t=11.2237 P<0.001	P<0.001	t=7.4322 P<0.001	P<0.001	t=11.8246 P<0.001	P<0.001

P<.001; Wilcoxon's paired sample Signed Rank Test (WSRT)

Table above 4.12 shows that paired 't' test value and P-value is highly significant implying that the therapies given both showed reduction in BDI scores (in time).

However, fact that all the patients were receiving standard psychiatric treatment; one may expect 'reduction' of BDI scores even in 'wait-listed control's as they are not equivalent to 'no treatment' group but only not given any 'psychotherapy'. But reduction in 'wait-listed control' group is [though statistically highly significant] not clinically significant. This is later confirmed by 'Nonparametric Wilcoxon's paired samples Signed Ranks test' as the corresponding *P<0.001*.

Summary

The results in the present study are similar to studies reviewed for the research project. However, this is the 1st study on Indian population with extensive therapeutic work of 10 regressive sessions of BA with 60 minutes of sessions each delivered in a group setting and similarly 10 regressive sessions for 90 minutes each for REBT in a group setting.The above findings are similar to the results shown throughout the analysis indicating that group intervention for both BA and REBT with tens sessions are efficacious in treating MDD efficiently and also prevent relapse and re-occurrence of depression upto six-months follow –up.The study also concluded that those who were not subjected to any active intervention did not show any significant change in the reduction for level of depression. This suggests that medicine alone is not as effective as treatment and a combinational treatment. The study also included a therapeutic intervention for all those in control group post intervention intended. All those in control group were given therapy in group/individual setting based on their availability and desire post-intervention but were not included for any follow-up or were not part of analysis.

Conclusion:

The results have concluded that both BA and REBT are equally efficacious in treating and preventing relapse in those suffering from MDD for over a period of 6 months as studied in the research.The results also show that those who receive therapeutic intervention (BA or REBT) have better outcome in comparison to those in WLC. This signifies that those treated with pharmacotherapy alone do not show significant change in their level of depression in comparison to those who received combinational treatment (therapy plus medication) or therapy alone. A separate analysis

for effect of age, educational level and economical status was not conducted as there was a clear indication through mean score that most individuals in the group were of age 32, most individuals were educated up to graduate level and most individuals were from middle socio-economic status. Thus, a comparative analysis would have not been possible for the following factors. The present study is unique as there is no literature review indicative of any research indicative of efficacy of BA and REBT in group setup on Indian population. It is the first evidence based study for REBT and BA therapy in India.

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LEGAL STATUS FOR LIVE IN MARRIAGE – A NEED FOR A STATUTORY RECOGNITION

Ramanya Gayathri.M
Assistant Professor at School of Law
SASTRA Deemed to be University, Tamil Nadu

ABSTRACT

Live in relationship and marriage are considered as two different facets of the society. One is purely based on social constraints and the other is based on freedom. Indian society has not recognized the concept of Live in relationship. It was considered as an abomination to our Indian culture and most importantly by the Hindu Dharma. The concept of live in relationship evolves from the widened approach of the people who started to crave for a relationship with no strings attached. A couple is said to be in a live in relationship when they cohabit sharing one house hold without marriage and without any legal implication. Live - in relationship also support pre marital sex where there are high chances of illegal abortions and even a child being born. These children unlike the successor born out of wedlock do not have any right over the inheritance and are treated as illegitimate children. On the other hand the Hon'ble Apex Court cleared this ill fate and granted them the status of legitimate child along with right to property. Even many forbidden practices were more openly accepted by the successive generation, as can be seen from the cases of decriminalization of homosexual cohabitation. In many recent judgments the Courts stand in decriminalizing sections 377 and 497 of IPC shows how the Indian Law is evolving along with the society. It has to be noted that there is no legal definition to the term Live – in relationship and Indian law does not provide any rights or obligations to the parties in such relationship. Indian judiciary has tried to give justice in the absence of any concrete law in this aspect. Judiciary has neither expressly promoted nor prohibited such sort of relationships. Thus while giving importance to the structure of society and societal norms these kinds of relationship will definitely create an imbalance in the society and eventually ruin our Indian culture by making the status of women presumptive. Hence it is necessary to consider the legality and regularity framework of live - in relationship in the society.

Keywords – Relationship, Society, Illegal Abortion, Judiciary, Right.

Significance of Marriage

"Let There Be Faithfulness To Each Other Until Death. This, In Short, Should Be Known As The Highest Duty Of Husband And Wife. So Let Husband And Wife Ever Strive Doing All Their Duties; That They May Not Be Separated From Each Other, Wander Apart".

-Manu Dharma Shastra

I. Introduction

Society developed as a result of nature of the people to live together and the basis of this is the need for companionship. During ancient period people founded the institution of

marriage as a need to create a peaceful and happy society. Hindu ancestors considered this institution as Dharma, the code of right conduct. Thus the basis of marriage is friendship, understanding, promise and the commitment that unites a man and a woman. Hindus consider this relationship as sacred and it stretches beyond one life time and continues for up to seven lives.

The Hindu concept of Marriage determines the idea of permanent nature. It is considered as sacrament because marriage is gift of the girl by her father to the bride groom. The gift is confirmed by the religious ceremony of saptapadi. It is also believed that the seven steps taken by the bride and bride groom by holding hands around the God of fire, Agni creates an eternal friendship. Marriage is a religious command intended to fulfill religious duties and to achieve the higher ends of life, namely, dharma, artha, kama, and moksha.

II. Evolution of Live-In Relationship

The significance of marriage is lawful and the significance of which is gradually becoming debatable in many young and modern minds. Nowadays the young couples want to test their relationship and compatibility before tying the knot. Couples opt for live-in relationship due to the heavy financial burden of a marriage or for the reason that they are not sure about each other. Further, the biggest benefit of live-in relationship is division of expenses where each individual is responsible for their own self. Marriage brings in the added responsibility of their families, finances and societal duties. The main attributes that created such a concept are,

A. **Role played by social media and technologies:** The role of social media and compact technologies are the reasons behind developing the trending culture called live in relationship. This culture is adopted as a common factor and part of society by the youngsters. The social media opened the windows to the Indian society about the western life style. Social media and technologies has been influencing the younger generation to move towards easy going life.

B. **Live in together for benefits:** Migration of teens for higher education and job opportunities to other states is one of the reasons for development of live-in relationship. The city life, expensive life style and the wish to live a extravagant life style these teens choose for the changing life style. The teens both male and female opt to live together for reducing their expenditure so that they can use the pocket money to satisfy their lavish life style. Due to this unethical behavior many cases were registered crimes against women in living in such society**.**

C. **Growth of Metropolitan Cities, IT Industry and PUB culture:** Another reason for the rapid growth of live in relationship was the employment opportunities. When the IT profession was introduced in India many young generation was addicted to the western job culture and only relaxation they had was pubs. Due to restrictions that these men and women face in hostel or as paying guests, they have started thinking of an alternative to live together. Thus male and female who are co workers started staying together without marrying for a life of benefits and devoid of any restrictions.

D. **Less legal implications:** Nowadays people are living a rush life where they don't have time to waste in unnecessary legal delays. The couples wanted a hassle free life where each individual is responsible for his or her own self. As marriage brings unnecessary responsibilities of financial sharing and liabilities couple prefer a life without any kind of bond.

III. Problems Caused in Live-In Relationship

At the present due to the hectic life style people are becoming more and more individualistic and career oriented. The time spend by the partners have reduced so badly that marital bonding have become weak and it has started drift in the family structure. People like a life free of tensions and responsibility. Couples believe in having a relationship which is not legally, religiously and socially sanctioned.

The various factors that boosts the couples to enter into live in relationship are age, life style, economic independence, urbanization, and finally social obstacles like caste or classes, couple belonging to different religions, marriage between whom is still not approved by the society at large. This has become a new trend between the teenage groups due to the new culture existing in day today scenario. This lifestyle has created lots of problems in the society, they are

A. **Extinction of family bond:** The concept of family is destroyed in a relationship where there is no emotional bonding. One can see that live-in relationship is a link created for various benefits like financial, physical, psychological etc. Nowhere there is bonding based on emotion, love and caring. If two people live without all these factors then in future there won't be any family or family bonding.

B. **Teenage pregnancy and illegal abortion**: The issue of teenage pregnancy is slowly rising between the young girls. The live in relationship is not only a relationship for benefits, but a relationship where girls becoming the victims of men's physical pleasure. The culture which can be seen in Metropolitan cities like Delhi, Mumbai, Chennai and Kolkata where many youngsters and teens are living in groups. This type of life style is encouraging pre marriage teen pregnancy and many illegal abortions which may results in death of the girl or women.

C. **Growth of orphan society:** The growth rate of orphans and orphanage is slowly increasing in the society. Accidental or pre marriage pregnancy caused in live–in relationship has increased orphans and orphanages. The immature approach of the teens has resulted in dumping their child in orphanage as they are not ready to take up any responsibilities.

D. **Legal status of child:** In many situations the men fail to accept the children born in unplanned pregnancy in live-in relationship and they are left as illegitimate. The status of the child will be a question when the parents did not accept and provide the due care.

E. **Moulding of criminals**: Healthy society and structure where the result of healthy family bond. The children born out of such relationship coming out as orphans and illegitimate is thrown to the society where family values are absent. In live-in relationship the child is left alone with no options to love, care and affection, hence there is a high tendency to become a criminal..

F. **Crimes in Society**: The live in relationship concept is purely adopted for physical and financial pleasure. In this relation women are targeted physically and men

financially. In short live in relationship is a legal format of raping a woman. More than a man, women were the victims under the tag. The women were not only abused physically but also mentally and in some cases the future life of women left without any assurance by the men. Illegal births or abortions will ruin the life of women and they are left without any proper remedy.

IV. Role of Judiciary

India is a country which is known for its culture, tradition, social and family structure. This new concept of live – in relationship is degrading the status of Indian culture. The steps taken by the judiciary with regard to certain provisions like decriminalization of section 377 and 497 has taken the society to a different angle. The stand of Supreme Court in various issues of Live in relationship has marked evolution of a society where people are not attached even by culture, social and religious sentiments.

Indian judiciary has always taken a favourable stand for the couples who are in Live in relationship from the time of Privy Council. If the couples are living together as spouses without getting legally married, it is presumed under section 114 of Evidence Act that they are living as a result of legitimate marriage and not in the condition of concubinage.[1] Subsequently the Supreme Court in its judgment gave legal validity to a 50 year live in relationship. The Supreme Court took a view that "The presumption was rebuttable, but a heavy burden lies on the person who seeks to deprive the relationship of legal origin to prove that no marriage took place[2]. Law leans in favour of legitimacy and frowns upon a bastard."

As a step to give legal recognition to this concept the Supreme Court held that Live in relationship can only be regarded as immoral but not illegal[3].The Supreme Court in *Ramdev Food Products Ltd. V. ArvindbhaiRambhai Patel*[4] observed that 'two people who are in live in relationship without a formal marriage are not criminal offenders'. In another landmark case, the Supreme Court held that 'live –in relationship comes within the ambit of right to life under Article 21 of the Constitution of India'[5].

In *Alok Kumar v. State*[6] the court considered the case a man and women who have separate family of their own and not divorced living together. The court in this case tagged the nature of their relationship as 'walk –in and walk- out relationship with no legal strings attached'. It is treated as a relationship where the parties live together under a contract, which is renewed every day and can be terminated at any time.

In *Abhijit BhikasethAuti v. State of Maharashtra and Other*[7] the Supreme Court observed that a women living in live in relationship is also entitled to claim maintenance under Section 125 of Cr.P.C. In 2013, the Supreme Court in the case of *Indra Asarma v.*

[1] AndrahennedigeDinohamy v. WijetungeKiyanapatabendigeBlahamy , AIR 1927 PC 185. Mohabbat Ali Khan v. Md. Ibrahim Khan, AIR 1929 PC 135.
[2] S.P.S. Balasubramanyam v. SuruttayanAndalliPadayachi&Ors, AIR 1992 SC 756.
[3] 2001 SCC Online All 332
[4] (2006) 8 SCC 726.
[5] (2010) 5 SCC 600.
[6] 2010 SCC Online Del 2645
[7] AIR 2009 (NOC) 808 (Bom).

V.K.V. Sarma[8] went one step further and dealt with the issue of live – in relationship by giving certain guidelines in the same. A two judge Bench of the Supreme Court consisting of Justice K.S.P Radhakrishnan and Pinaki Chandra Ghose held that a women who knows that the man with whom she is in live –in relationship is already married and it is clear that she is not entitled to any reliefs as given to a legally wedded wife. The Court held that there would be great injustice is brought to the women in such a relationship as she is denied of any protection and to the children born out of such relationship. In this regard the Apex Court stresses the need for a new legislation based on certain guidelines given for the protection of the victims of such relationship.

'(1) *Duration of Period of Relationship*

Section 2(*f*) of the Domestic Violence (DV) Act has used the expression 'at any point of time', which means a reasonable period of time to maintain and continue a relationship which may vary from case to case, depending upon the fact situation.

(2) *Shared Household*

The expression has been defined under Section 2(*s*) of the DV Act and, hence, need no further elaboration.

(3) *Pooling of Resources and Financial Arrangements*

Supporting each other, or any one of them, financially, sharing bank accounts, acquiring immovable properties in joint names or in the name of the woman, long-term investments in business, shares in separate and joint names, so as to have a long-standing relationship, may be a guiding factor.

(4) *Domestic Arrangements*

Entrusting the responsibility, especially on the woman to run the home, do the household activities like cleaning, cooking, maintaining or up keeping the house, etc. is an indication of a relationship in the nature of marriage.

(5) *Sexual Relationship*

Marriage like relationship refers to sexual relationship, not just for pleasure, but for emotional and intimate relationship, for procreation of children, so as to give emotional support, companionship and also material affection, caring, etc.

(6) *Children*

Having children is a strong indication of a relationship in the nature of marriage. Parties, therefore, intend to have a long-standing relationship. Sharing the responsibility for bringing-up and supporting them is also a strong indication.

(7) *Socialisation in Public*

Holding out to the public and socialising with friends, relations and others, as if they are husband and wife is a strong circumstance to hold the relationship is in the nature of marriage.

(8) *Intention and Conduct of the Parties*

Common intention of parties as to what their relationship is to be and to involve, and as to their respective roles and responsibilities, primarily determines the nature of that relationship.'

[8] (2013) 15 SCC 755

As a final statement to such relationship the Supreme Court in another landmark judgment[9] decided that couples living in a live-in relationship will be presumed legally married. In order to give protection to the women the Court also added that the woman in the relationship would be eligible to inherit the property after the death of her partner. Judiciary has confirmed in every manner that live in relationship has to be recognized and it has formulated guidelines as to how this relationship is to accepted in the society. Thus judiciary has given all the necessary guidelines for the enactment of suitable and separate law for avoiding all the issues and crimes regarding live-in relationship.

Legislations legalizing Live in Relationship

There is no clear cut law regarding live-in relationship in India. Even a law which mentions the rights and obligation for the parties in a live-relationship and recognizing the status of child born out of it is the need of the hour. The need for a lawful status and a clear definition for live-in relationship are necessary. However in various occasions the judiciary has clarified the concept of live-relationship through various judgments.

In many developed countries like Scotland, USA, Denmark, Norway, Sweden and Australia etc live in relationship are very commonly practiced, accepted and are not considered to be illegal. Family law (Scotland) Act for the first time identified and legalized live- in relationship. The law recognized cohabitant couples when a) the length of the period during which they lived together b) the nature of the relationship during that period c) the nature and extend of any financial arrangements[10]. Scotland statute also gave right to a cohabitant to apply on court of law for financial support in case of breakdown of relationship[11].United States institutionalized cohabitation by giving cohabiters the same rights and obligations as married couples[12]. The Family Law in Australia has given meaning to the de fact relationship with another person, if a) the persons are not legally married to each other, b) the person are not related by family c) having regard to all circumstances of their relationship, they have a relationship as a couple living together on a genuine domestic basis[13]. Live-in relationship is legally recognized in Canada also.

In Canada the Family Law Act legalizes the relationship between two cohabiting or intend to cohabit who are not married each other will enter into an agreement and agree upon their respective rights and obligations which includes, a) Ownership in or division of property b) Support obligations c) The right to direct the education and moral training of their children, but not the right to custody of or access to their children[14]. In United Kingdom Live-in relationship is largely covered by Civil Partnership Act 2004 whereby if a man and women is living together in a stable sexual relationship they are often referred to as 'common law spouses.' The French National

[9]Dhannulal v. Ganeshram, (2015) 12 SCC 301.
[10] Section 25(2) of Family Law (Scotland) Act 2006
[11]http://www.legislation.gov.uk/asp/2006/2/contents
[12] Domestic Partnership Act 2003
[13] Section 4AA of Family Law Act 1957 (Australia)
[14] Section 54 (1) of the Family Act, R.S.C. 1990

Assembly passed the Civil Solidarity Pact on Oct. 13, 1999. Live-in relationship is governed by civil solidarity pact in France. The civil solidarity pact is a contract binding two adults of different sexes or of the same sex, in order to organize their common life; contractants may not be bound by another pact, by marriage, sibling or lineage. Thus almost all the countries have given a legal status to Live in relationship

In India various legislations have incorporated the provisions to confirm the legal status for live in relationship. The Indian legislature enacted Protection of Women from Domestic Violence Act, 2005 and they have accepted live-in relationships by giving rights and protection to those females who are not legally married and living with a male in a relationship, with an idea of marriage who is similar to that of a wife, but not equivalent to wife. Section 2(*f*) of the Domestic Violence Act, 2005 explains that the court interpreted the expression "relationship in the nature of marriage" to include live in relationship.

At present the Protection of Women against Domestic Violence Act is considered as applicable for the women in live-in relationship. The Hon'ble Court presumed that live-in relationships should be treated in the same line and meaning similar to that of marriage. This assures women some basic rights to protect themselves from all type of abuse, fraudulent marriage and also from bigamous relationships.

Moreover Section 125 of Criminal Procedure code was incorporated to include maintenance for a wife, children old age parents, but now by judicial interpretation to partners who are in live-in relationship[15]. In 2003 Malimath Committee[16] also recommended on Offences against women, whereby the term 'wife' includes ladies who were previously in a live-in relationship and should get all legitimate privileges as that of a spouse[17].

Under the Indian Evidence Act the court has given a presumption that when a man and lady live together for a long period of time, then there is an assumption of marriage. In this regard the court will look into the existence of any fact which it thinks likely to have happened, regard being given to the common course of natural events, human conduct and public and private business, in a relation as to the facts of a particular case[18].

Hence the legislature can enact a new law with the help of judiciary to safeguard the rights and to ensure the liabilities of men and women who are entering into relationship.

Implication for Practice

There is no stability in judiciary, the judgments itself has lots of flaws and contradictions with the precedents. When the affected party seeking remedy from the court for maintenance and legal heirship the Hon'ble court codifying the domestic violence act and family law for the remedy. Thus in order protect the parties to a live in

[15] Ajay Bhardwaj v. Jyotsna, 2016 SCC Online P&H 9707.
[16] Justice V.S. Malimath Committee Report, pp. 181-194
[17] www.mha.gov.in/sites/default/files/criminal_justice_system.
[18] Section 114 of Indian Evidence Act.

relationship, specially women and the children born out of the same, a law has to be formulated including certain mandatory conditions. The legislation can put together the guidelines mentioned by the Supreme Court with these mandatory guidelines mentioned below.

- The registration of the live in relationship must be registered with all the terms and conditions as a marriage(where the court assumes the live in relationship as a marriage)
- Recognition should be given based on the length of the peiod the couples lived together and the nature of relationship during that period.
- Registration should be done either before the Hon'ble family court or before the magistrate court where the parties were decided to live.
- Both the parties should confirm and consent to the terms and conditions.
- The rights and responsibilities should be detailed in a contract as agreed by the parties.
- The appropriate authority should provide a certificate of registration of their live-in relationship which will give a legal status to the parties.
- The appropriate authority before granting recognition should took into consideration the medical certificate, the background and the reason why the parties joined together for such a relationship.
- In the cases of unwanted pregnancy or child birth the man should be ready to compensate the women for the loss of her health as well as the expenses incurred by her.
- The man should be ready and willing to give legitimacy status to the child born out of such a relationship.
- All the expenses for the growth and development of the child should be equally undertaken by the man and woman of that relationship.
- The couples should direct for the education and moral training of the children rather than right to custody of or access to the children.
- Any issues or disputes which occur between the parties should be treated in criminal nature.

Conclusion

On account of the judicial interpretation and legislations made to safeguard the rights of women, it is evident that a law in this regard has to be formulated. The Supreme Court's stand on the live-in relationship and the unnecessary recognition given to it is creating a path to commission of crimes only for benefits. Thus it is very important at this point to curtail the various crimes done by younger couples in the society. A legal status, legitimacy and liabilities will provide a fear in the minds of young generation who fail to follow then social and moral values.

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NI-DOPED ZNO NANOFLOWERS: SYNTHESIS AND ITS APPLICATION IN GAS SENSING

Raghav Dwivedi[1], Esha Dwivedi[2] and R. K. Dwivedi[3]
[1]Electronics and Communication Engineering, P.S. I. T., KanpurUP, India
[2]Biochemical Engineering, H. B. T. U, KanpurU), India
[3]Department of Physics, Christ Church College, Kanpur –UP, India

Abstract

The unique and fascinating properties of nanostructured materials have triggered tremendous motivation among scientists to explore the possibilities of using them in variety of technological applications. Zinc oxide is an attractive multifunctional material that combines its different properties such as magnetic, electric, optical and piezoelectric for its numerous applications. Zinc oxide nanoflowers are attracting a great attention these days owing to its application in gas sensing performance. In the present work, Ni-ZnO nanoflowers have been synthesized by sol-gel technique using zinc chloride as precursor. The structural and optical properties of synthesized nanoflowers have been studied by X-ray diffraction (XRD), scanning electron microscopy (SEM) and X-ray photoelectron spectroscopy (XPS) analyses and UV-Visible spectroscopy.

Key Words: Sol-gel method, SEM, XRD, ZnO nanoflowers.

Introduction

Nanostructured materials are getting increased attention these days due to their unique mechanical, optical, magnetic and electrical properties and thereby making them potential candidates for their tremendous scientific and technological applications in electronics, food, cosmetics, textile, pharmaceutical industry, agriculture and biomedical fields. These materials have been found to exhibit greater chemical reactivity due their greater surface to volume ratio. Zinc oxide is an n-type semiconductor of II-VI group with a wide band gap having optical transparency in the visible range (E_g= 3.2 eV). It crystallizes in a hexagonal wurtzite structure with lattice parameters a=3.249 A^0 and c=5.205 A^0. Zinc oxide nanoparticles (ZnO-NP's) are becoming very popular due to their utilization in transparent electronics, ultraviolet light emitters, piezoelectric devices, spintronics, solar cells, gas sensing, biosensors, cosmetics, drug delivery systems etc. [1-6] ZnO-NP's being relatively inexpensive and less toxic is being exploited in excellent biomedical applications such as antibacterial, antimicrobial, anti-inflammatory, anti-diabetic, wound healing, anticancer, bio imaging etc. [7-11] The antimicrobial properties of ZnO nanoparticles are attributed to their ability to damage the cell walls of bacteria and disruption of DNA replication [12-13]. Due to its strong UV absorption properties, it is a very effective candidate for protection against ultraviolet rays and hence used for manufacturing personal care products such as

cosmetics and sunscreen. The wide band gap and large binding energy have made ZnO-NP's exciting for both scientific and industrial applications.

The doping of ZnO nanoparticles have been found to modify its characteristics enhancing its applicability in variety of fields such as optoelectronics, gas sensing and photo catalysis etc. It been reported that Mg-doped ZnO nanostructures can exhibit excellent properties for device application [14]. Metal ion-doped ZnO nanostructures are the most promising catalyst for the degradation of various pollutants because of its enhancement in its optical properties [15]. By inducing more defects over the surface of ZnO, the optical adsorption properties can be enhanced. Basically minute amounts of dopants are sufficient to act as donors or acceptors inside the semiconductor crystal lattice which will significantly alter the properties of the semiconductor up to a greater extent. The transition metal-doped ZnO nano-photocatalysts have been used as an efficient and promising technology for the photocatalytic removal of Direct Blue 15 dye from aqueous environments under UV/visible light irradiation [16]. There are several techniques of synthesizing pure and doped nanostructures of variety of materials in the literature such as hydothermal synthesis [17-18], direct precipitation [19], flame spray pyrolysis [20], spray drying synthesis [21], pulsed laser deposition [22], sol-gel method [23-24], liquid combustion reaction [25], Pechini method [26] etc; however, sol-gel method appears to be most promising due to its low cost, easiness of synthesis and a proper control on the chemical composition. In the present work, both undoped and Ni-doped ZnO nanoparticles were synthesized using sol-gel method. The structural and optical properties of synthesized nanostructures have been studied by X-ray diffraction (XRD), scanning electron microscopy (SEM) and X-ray photoelectron spectroscopy (XPS) analyses and UV-Visible spectroscopy.

Experimental Details

The synthesis of un-doped and Ni-doped ZnO nanostructures in the present study was performed by a typical sol-gel process at 80-90^0 C. For synthesizing ZnO nanostructures, the solution of zinc chloride was prepared by dissolving 2.34 g of zinc chloride (Loba Chemicals) in 8 ml distilled water/ethanol and stirred in an ambient atmosphere. 1.154 g of potassium hydroxide (KOH) (Loba Chemicals) was dissolved in 5 ml distilled water and was added to the above solution drop wise under continuous stirring. After few minutes the solution turn into a jelly form and a milky white solution was obtained. This mixture was then further heated for 3 hours at 80-90^0 C without stirring. The resulting suspension was centrifuged. The mixture was washed with distilled water in an ultrasonic bathwater and then the powder was dried at 50^0 Cover night to retrieve the final product. For synthesizing Ni-doped ZnO nanostructures, 0.162 g Nickel chloride ($NiCl_2$) (Sigma-Aldrich) was mixed in 10 ml distilled water. In a separate beaker, 99 wt% of ZnO over $NiCl_2$ powder was taken with 20 ml water with continuous stirring after 20 minute $NiCl_2$ solution was mixed. 2 mL hydrazine hydrate (Merck) was mixed with 4 mL Diethanolamine (DEA) (Merck) drop wise and the resulting solution was heated for one hour from 80-90^0 C. The resulting suspension was centrifuged and the mixture was washed with distilled water and dried at 50° C overnight to get the final product i.e. Ni-doped ZnO. The structural, morphological, and

optical properties of undoped and nickel doped ZnO nanostructures were studied using XRD, SEM and UV- visible techniques.

Results and Discussions

The structural analysis of both undoped and nickel doped ZnO nanostructures were carried out using an advanced X-ray diffractometer. The XRD pattern were recorded with CuK_α (λ= 0.1542 nm) radiation with 2θ range in the range of 5^0 to 80^0 and analysed using Bruker D8. Figure 1 shows a typical x-ray diffraction pattern of Ni-doped ZnO nanostructures sample. The peak positions in the XRD pattern corresponds to the standard Bragg positions of hexagonal wurtzite ZnO. It can be seen from the pattern that the presence of new peaks confirms the incorporation of nickel in ZnO structure. The lattice parameters of Ni-doped ZnO calculated from XRD data was found as a = b = 3.196 Å and c = 5.202 Å, which are slightly less than those of undoped ZnO values a = b = 3.251 Å and c = 5.201 Å. It appears that the wurtzite structure of ZnO is not changed by nickel doping and Ni^{++} substitutes Zn^{++} into the crystal lattice. This decrease in lattice constants may be attributed due to contraction of the crystal structure because of slightly smaller ionic radius 0.69 Å of Ni^{++} as compared to ionic radius 0.74 Å of Zn^{++} in the ZnO wurtzite structure.

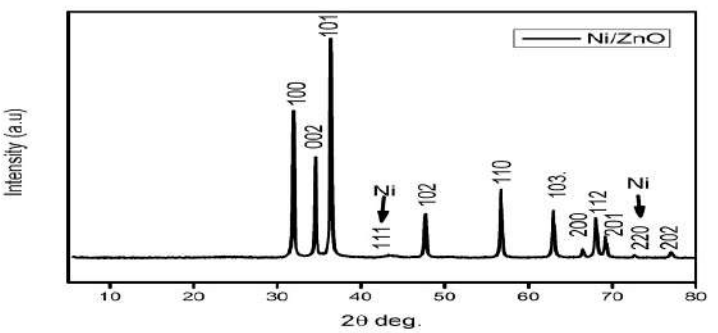

Figure 1: A typical x-ray diffraction pattern of Ni-doped ZnO nanostructures sample

The surface morphology of the synthesised nanostructures was studied using Zeiss Supra 40 field-emission scanning electron microscope. The SEM photographs of both undoped and nickel doped ZnO nanostructures have been recorded. Figure 2 presents the SEM photograph of Ni-doped ZnO nanostructures showing flower like morphology. Due to the higher surface area and more available space, these nanoflowers are attracting wide attention in gas sensing applications. It has been shown that ZnO nanoflowers exhibits better gas sensing performance than nonorods. [27]

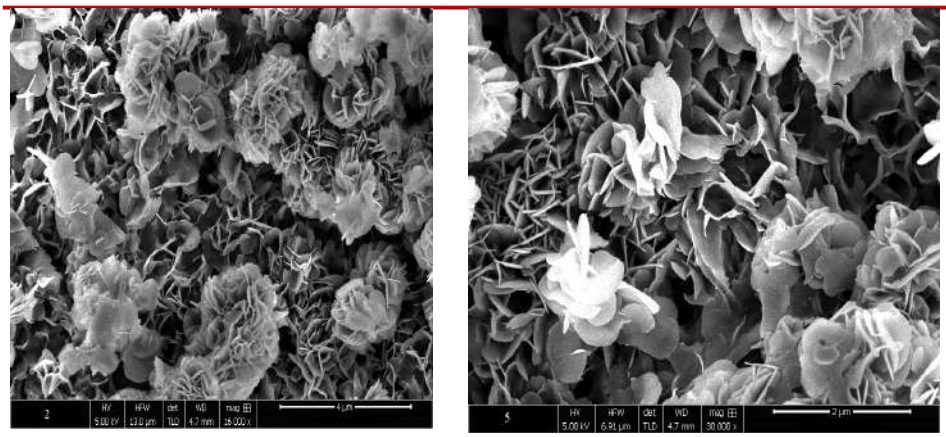

Figure 2: SEM photographs of Ni-ZnO nanostructures

The room temperature optical absorption spectra of both undoped and Ni doped ZnO samples were recorded by UV-Visible spectrophotometer. The excitonic absorption peak is observed close to 388 nm which corresponds to the absorbance peak of a hexagonal ZnO structure. The doping with nickel is found to shift the absorption edge to the visible region thereby showing smaller band gap as shown in figure 3.

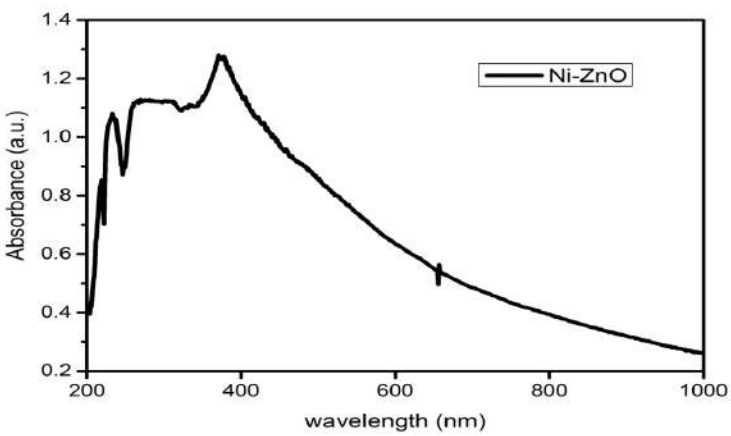

Figure 3: Optical absorption spectra of Ni-doped ZnO nanoflowers

The ZnO nanostructures were analysed by X-ray photoelectron spectroscopy (XPS) using a PHI5000 Versaprobe system, with Al Kα (h ν= 1486.6 eV) X-rays. Figure 4 shows a typical XPS spectrum of Ni-doped nanoflowers. The spectra show the peak corresponding to Zn, C and O. The peak observed at 532 eV as O-1s is attributed to O^{--} ions in the normal wurtzite structure of ZnO. The detected carbon in the spectra may be due to the carbon adsorbed on the surface during the exposure of the sample to the

ambient atmosphere. A sharp doublet corresponding to Zn-$2p_{3/2}$ and $2p_{1/2}$ core levels at about 1021 eV and 1044 eV is observed in the spectra.[24]

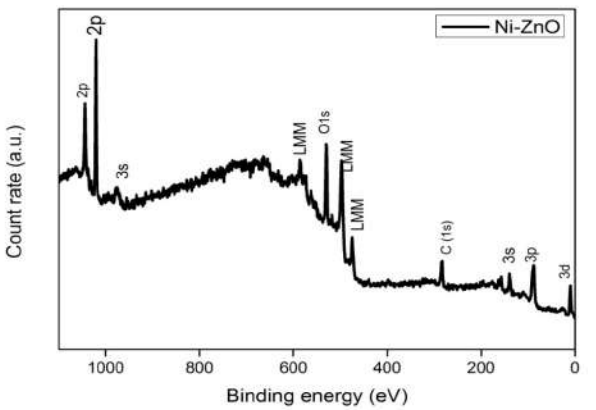

Figure 4: XPS spectra of Ni-doped ZnO nanoflowers

Conclusion

Nickel doped ZnO nanoflowers were successfully synthesized using sol-gel method. The surface morphology, crystalline structure, elemental composition and optical properties of synthesized nanoflowers were determined by SEM, XRD, XPS and UV-Vis spectroscopy. These nanoflowers have a strong potential for fabricating flexible gas sensors with enhanced gas sensing properties.

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THE CRISIS OF YES BANK LTD

Purnima Sarkar
Assistant Professor in Finance
Amity Global Business School, Bhubaneshwar

ABSTRACT

In the past few years, the banking industry in India has experienced transformations with the banking mergers taking place and certain banks facing liquidity crunch. This Bank has faced setbacks for its incapability to raise capital to fund the losses due to non-recovery of loan funds. It incurred a massive loss of Rs 600 crores last year, its net non-performing assets raised to 4.35% and asset quality deteriorated. The Reserve Bank of India announced a draft revival plan -"Yes Bank Ltd. Reconstruction Scheme, 2020", in which it is stated that SBI held 45% of stake along with participants like HDFC Ltd & ICICI Government appointed former Chief Financial Officer & deputy Managing Director of SBI Prashant Kumar as MD & Chief Financial Officer. The case focuses on the primary causes that led to the crisis of India's fifth largest private lender and focuses on the attempts made by the author to save this institution in the better interest of the nation.

Keywords: Liquidity Crunch, Revival Plan, Reconstruction Scheme, Asset Quality

INTRODUCTION

YES Bank Ltd is one of the successful private banks with three subsidiaries-YES Asset Management Services, YES Capital and YES Bank. It is the biggest bank by market capitalisation and was established by Rana Kapoor and Ashok Kapoor in 2004. In the year 2005, the bank diversified into retail banking operations with the issue of International Gold and Silver platinum card in organization with MasterCard International. In June 2005, It came up with a public issue by listing in the stock exchanges. It was the primary organization internationally to get financing through IFC's Managed Co-Lending Portfolio Program and the main Indian bank to raise credit under IFC's A/B advance office. On September 2014, YES Bank reported it had got high scores from ICRA and CARE .On December 18, 2017, YES Bank penetrated in the 30-share S&P BSE Sensex. A couple of months after the fact, YES Bank reported the posting of the bank's presentation $600-million security issue under its $1 billion MTN program on Global Securities Market (GSM) – India's first capital-raising stage for worldwide financial specialists in any money situated at the Gujarat International Finance Tec-City (GIFT City) IFSC. In December 2017, the bank's branches were1050 and its ATMs were 1,724. Rana Kapoor is a prime supporter and previous overseeing chief and CEO of YES Bank. Born in 1957 in Delhi, Kapoor began his career as a financier in Bank of America's Barakhamba branch in New Delhi. He worked with

BoAfor a long time. In 1998, Rana Kapoor joined his brother in law Ashok Kapur and Harkirat Singh to shape Rabo India Finance. Kapoor and Singh sold their value in the endeavour in 2003 and got the permit to set up a private part bank (YES Bank). Kapoor was all around organized in the corporate segment and he discovered his specialty in organizations that were thinking that its hard to get financing from other existing loan specialists. In September 2018, he was approached to step down as the executive of YES Bank and was supplanted by Ravneet Gill. Truly Bank organizer Rana Kapoor was put collared by the Enforcement Directorate on March 8. The CBI has given a post roundabout against Mr. Kapoor's better half Bindu and their three girls. The Central govt. Intervened into the issue and requested for proposing a restoration plan. In any case, at first, without a dependable restoration plan, the protection of the interest of the bank's investors interest was questionable. Henceforth it applied to the Central government for forcing a moratorium under section 45 of the Banking Regulation Act, 1949. The RBI stated-YES Bank caused a monstrous loss of Rs 600 crore in the September quarter (obviously, without a one-time conceded charge resource alteration of Rs 709 crore, the benefit would have been Rs 109 crore), against a net benefit of Rs 965 crore a year earlier. In 2018-19, it had recorded a benefit of Rs 1,720 crore. Its net non-performing resources bounced to 4.35% in the September quarter, against simply 0.84% every year sooner, as resource quality decayed. Its arrangement inclusion proportion remained at just 43.1% in the September quarter, contrasted and 47.8% per year earlier. The RBI, nonetheless, prompted contributors not to freeze, stating that "their advantage will be completely ensured". The RBI will investigate and draw up a plan in the following not many days for the bank's recreation or amalgamation under the Banking Regulation Act and with the endorsement of the Central government, so that the contributors are not put to difficulty for a significant stretch of time.

LITERATURE REVIEW

Diamond and Rajan (2005), expanding their 2001 model reveals that when liquidity crunch arises on the part of the, It can spread system emergencies. When investors don't freeze, that is, regardless of whether the depositors panic or not, a situation of crisis arises which sends a wrong signalling in the market.

Bhattacharya &Gale 1987, Allen and Gale 2000b, Depositor frenzies are most harming when they bring about tension of cash crunch in the financial framework as disappointments of each and every bank pose a risk for the financial framework in general. Liquidity issues and credit crunch can emerge from authoritative connections between banks, for example, through interbank advances, or from backhanded connections, for example, through Balance Sheet exposures to consortium loans.

Diamond and Dybvig 1983, A major reason for the panic of the depositors, when a bank fails is the inadequate Deposit insurance coverage provided to the customers on their bank deposits. If adequate insurance coverage on deposits would be provided by the

authorities then it would reduce the default risk and not disturb the equilibrium in the financial system.

Martinez Peria and Schmukler 2001, A few examinations discovered that Deposit insurance has made financial frameworks less steady as debtors are reluctant to pay off their dues discipline, which has in turn affected the market discipline.

Keeley 1990, Calomiris 1999, Demirguc-Kunt and Detragiache 2002, Demirguc-Kuntet al. 2008, Indeed, despite the fact that the bank failures are a regular phenomena since the introduction of Deposit Insurance scheme. However, average deposit withdrawals have hardly surpassed 10% of aggregate deposits. Even during the utmost serious case in Argentina during the 1989 emergency during which month to month withdrawals were 26% during a single month.

Laeven&Valencia 2008, with banks progressively subsidizing themselves by raising capital from the open market. Showcases through unsecured liabilities, present day bank runs commonly include the drawing off liquidity from uninsured obligation holders ahead of scheduled time. Investor withdrawals, and the ongoing worldwide money related emergency can be described as having been activated by such phenomenon.
Minsky 1982, Gorton 1988, Another set of speculations views banking emergencies as emerging from the misfortunes on the asset side of banks' Balance Sheet that indicate its indebtedness. The factors responsible for the decay in resource quality originate from unfriendly macroeconomic fluctuations, showcase disappointments, government impedance, or misrepresentation. A large portion of these hypotheses depend on modification in financial essentials, and see banking emergencies as a characteristic outcome of business cycles, with credit developing cyclically

Temin (1976), Wicker (1980, 1996), and Calomiris &Mason (2003b) report proof on the side of these speculations that U.S. bank disruptions during the Great Depression were generally due to loss of economic fundamentals rather than market rumours. It was also forayed that, banking emergencies as a result of asset value bubbles not due to economic factors. Such speculations result in abnormalities due to data asymmetry

OBJECTIVE OF THE STUDY

This a causal study with primarily two objectives in focus. It would analyse the various factors responsible for the crisis in YES BANK LTD and its impact on the various stakeholders

a. To analyse the various causes that led to numerous problems in YES BANK LTD
b. To undertake the impact analysis of such crisis on the customers, investors and the economy

RESEARCH METHODOLOGY

RESEARCH DESIGN

This study is based on the cause- effect phenomenon of the crisis in this organisation and will measure the impact analysis on the various associated stakeholders as customers, present and potential investors, regulatory body's decision makers and the economy as a whole.

DATA COLLECTION

The data has been collected basically by exploring the various secondary sources by surfing the website of the bank, business newspapers as the Economic times, Business Standard, Financial Express, business magazines and from other related web informations.

DIRECT VARIABLE

The variables that have been chosen for the purpose of the study are profitability, non-performing assets, stock price, market price, firm valuation, asset quality. The influence that the incident created on these parameters would be evaluated.

THE CAUSES THAT LED TO THE CRISIS

The bank's Loans&advances on March 31, 2014, stood at Rs 55,633 crore, and deposits were Rs 74,192 crore. Gradually, advances multiplied almost four times the amount, at Rs 2.25 trillion as on September 30, 2019 and growth in deposits were stagnant The bank's asset quality which multiplied was under RBI's surveillance. Truly Bank has a generous exposure to disturbed creditor like Reliance group gathering, DHFL and IL&FS. Turnaround occurred when an Independent Director Uttam Prakash Agarwal, quitted in January 2020 stating the plea of governance issues. Major factors responsible for the crisis are as follows:

1. NPAs: YES Bank faced trouble due to its asset quality surveys in 2017 and 2018, which witnessed a steep rise in lendings and disclosed noteworthy administrative failures which ultimately resulted in the transformation of the board. The bank in this manner battled to resolve its capital concerns. It endured a sensational growth in its NPAs between April and September 2019 to Rs 17,134 crore.

2. NBFC crisis: The emergency began with the disclosure of Infrastructure Leasing and Financial Services (IL&FS) and afterward reached out to Dewan Housing Finance Limited (DHFL). Yes Bank's absolute lending to IL&FS and DHFL was 11.5 percent as of September 2019. In April 2019, the bank had categorised about Rs 10,000 crore of its exposures, amounting to 4.1 percent of entire credits.

3. Administrative issues: YES Bank countered some governance challenges responsible for its downfall. On January 10, independent director Uttam Prakash Agarwal left company's board referring to breaking down governance norms and continuous disturbances. In 2018-19, the bank understated NPAs to the tune of Rs 3,277 crore, inciting RBI to nominate R Gandhi, one of its previous deputy governors, to the bank's board. Rana Kapoor, was approached to resign as CEO in January 2019

4. Exorbitant withdrawals:YES Bank's current position prevented numerous investors to park assets over a long tenure. It witnessed a constant withdrawing of deposits, that affected its asset report and aggravated its misfortunes. It had deposits worth Rs 2.09 trillion towards concluding of September 2019.

ACTION TAKEN BY RBI

- RBI has assumed management control
- RBI has also imposed moratorium on the bank
- RBI reported a 'Plan of Restructuring' which involves SBI contributing capital to obtain 49% shareholding in this rebuilt lending institution

MORATORIUM PERIOD ON YES BANK

RBI, while suggesting a moratorium period to be imposes on YES Bank's. As the bank is facing a liquidity crisis due to the unavailability of sufficient liquid resources and its subsequent failure to raise satisfactory funding for arrangements of potential non-performing assets. The outcome was observed in the minimization of credit ratings, which created problems for procuring funds. At the same time certain corporate governance issues also persisted in the bank. It was decided by RBI to impose moratorium which is an impermanent non-occurrence of action till the situation is under control to lift suspension, followed by the settlement of issues. In this case, RBI imposed moratorium for a month which ended on April 3rd'2020.The permissible limit of withdrawal was capped at Rs 50,000 from their savings account or current account or some other deposit accounts. In the event that a contributor has multiple deposit accounts with YES Bank, at that point moratorium will be same for all the accounts. RBI stated that one could pull back up to Rs 5 lakh for health related crises, advanced education costs, instalments towards marriage, different functions and "unavoidable crises".

RECONSTRUCTION PLAN

The RBI prepared proposal of reconstruction plan which suggests that depositor's assets would be safe. The employees would be entitled to the same amount of compensation and conditions of work for a year. SBI is required to get a board endorsement to divert resources into YES Bank and procure a 49% stake, , at a value of Rs 10 for each share with a face value of Rs 2.SBI can't diminish its holding beneath 26%.

1. Reserve Bank of India has set Yes Bank under moratorium. Its clients can't make standard withdrawals of more than Rs. 50,000 per day till April 3, subject upto limit of Rs.5 lakh.
2. It spanned on a high lending trend with credit ratio mounting by 334% between FY 2014-2019.
3. Large number of creditors began defaulting. The gross NPA rate, past due for over 90 days, zoomed to 7.39% as of September 2019, which is most noteworthy in practically identical institutions.
4. Awful credits accumulated, the bank didn't make enough arrangements in its absorption. Its arrangements were the least among similar banks.
5. Customers pulled back huge sums, bringing about the credit-deposit proportion exceeded100% in 2018-19. That is, cash outflow exceeded cash inflow.

6. High volume of lending and high NPA implied degradation in productivity, supplemented by Yes Bank's drowning Return on Assets
7. Its stock value dipped consistently during the previous year. "It has likewise come across genuine administration concerns in the ongoing situation that has led to degradation of the bank.

IMPACT ANALYSIS

IMPACT ON CUSTOMERS?

1. Payment of loan EMI's and other instalments will be affected. in case it is higher than Rs. 50,000.
2. It will affect clients whose salary account is connected to Yes Bank
3. The degree of Credit syndication and external investments proposals would have a declining trend.

IMPACT ON ECONOMY?

1. There was a decline in the confidence level in the economy especially in the banking sector as the crisis was unveiled.
2. There was negative signalling in the market with the withdrawal of foreign institutional investors and foreign portfolio investors.
3. The stock prices of YES Bank declined drastically.

THE REVIVAL PLAN BY RESERVE BANK OF INDIA

Yes Bank reported a recovery plan for the ambushed institution, in which it has been suggested that SBI can put resources into the revived unit for up to 49 %stake for about Rs 2,450 crore. The plan is forwarded to SBI and Yes bank for their remarks. RBI Governor Sri Shaktikanta Das had guaranteed Yes Bank depositors that a goals plan will

be reported in 30 days. RBI put Yes Bank under moratorium saying it was assuming responsibility for a month and would chip away at a restoration plan. RBI says that State Bank of India (SBI) has communicated its eagerness to make investment in Yes Bank and taken part in its reconstruction scheme.

The Govt has declared the 'Reconstruction scheme' for Yes Bank, cleared by the Union Cabinet on March 13.Prashant Kumar selected as CEO& MD of Yes Bank. The new board is likewise to be framed within seven days from end of the moratorium period. It has selected Prashant Kumar as the CEO and MD of Yes Bank. Kumar is the previous CFO and Deputy MD of State Bank of India (SBI) and was designated Administrator to the disturbed loan specialist by the Reserve Bank of India (RBI).

Former Non-Executive Chairman of Punjab National Bank Sunil Mehta is designated as Non-Executive Chairman. Mahesh Krishnamurthy and Atul Bheda are Non-Executive Directors. The new board is additionally to be framed inside seven days from end of the ban. Further, the warning states "the speculator bank (SBI) will choose two additional officials as Directors to the new board and the RBI may select at least one extra executives as necessary."The new board may co-pick more chiefs to it as allowed under Articles of Association. Members of the board, with the exception of additional directors, are to remain in office for one year or until a substitute board is established by the bank.

Shareholding pattern

Existing investors holding more than 100 shares in Yes Bank are dependent upon a three-year 'lock-in' for 75 percent of their Investment. The maximum limit of share capital is to be changed to Rs 6,200 crore and the ordinary shares is to be retained at Rs 3,000 crore of Rs 2 each. The approved special category capital will be Rs 200 crore. Investors are to be allocated shares at Rs 10/share as per the notice. For primary investors SBI the post-infusion equity capital is not less than 26 % and not in excess of 49 % of total equity." It won't diminish the stake below 26% prior to the fulfilment of three years tenure."

Notification states that an investor, other than the SBI, "may exercise voting rights to the extent of its shareholding, or 9% of the total voting rights of total equity shareholders of Yes bank.Investors esteemed 'fit and appropriate' to hold voting rights more than 9 %; If RBI permits the voting rights can be to the degree of its shareholding or up to 15 % of all the voting rights of the equity shareholders of the bank—whichever is less."Non-SBI investors have a three-year 'lock-in' for 75 %of their venture.

1. All employees of the Yes Bank would receive their present salary for one year. RBI intends to modify the maximum amount of capital of the bank to Rs 5,000 crore and number of value shares would be adjusted to 24,000 crore of Rs 2 each amassing to Rs 48,000 crore.

2. The recommendation is that the investor bank won't diminish its stake in the new bank below 26 % prior to finishing of three years from the inducement of funds.
3.SBI will consent and put resources in the capital of the reconstructed bank to the extent that it holds 49 % shareholding at a cost at least Rs 10 (Face value of Rs 2 and premium of Rs 8).A new board will be established.

4. The arrangement suggests that Board of Directors of the Reconstructed Bank will have the opportunity to continue or discontinue the duties as Key Managerial Personnel (KMPs) at any point of time. The investor bank will have two nominee directors on the Board of the reconstructed bank.

5. RBI may designate additional directors. It will be open to the Board of directors of Yes Bank to select more additional directors. It will be available to the recreated bank to open new workplaces and branches or close down existing workplaces or branches, as per the surviving approach of the Reserve Bank and agreeing to the essential terms and conditions

FINDINGS OF THE STUDY

The leading body of State Bank of India conducted a meeting in Mumbai to put forth a revival plan in consultation with RBI. It is to get 24.5% each in Yes Bank. The SBI-LIC consortium may delegate another overseeing chief for the dealings .Responding to the bailout news, Yes Bank's moved up by 25.8% on the BSE; While SBI shares responded contrarily after the spreading of the news, they closed up 1.1%, in the midst of anticipation that, it would buy Yes bank’s shares at just Rs 2 each. It had been battling to execute its arrangements to raise around $2 billion for more than a half year from now, and its burdens have been exasperated by a spike in terrible advances, as the financial part keeps on being affected by the emergency in the credit market.

The bank was likewise drawn in with a couple of private firms for investigating chances to implant capital. These financial specialists held conversations with senior authorities of the Reserve Bank however didn't contribute any capital, the Reserve Bank put forth several attempts to encourage this procedure and provided sufficient chance to the bank's administration to fame a tenable restoration proposal but unfortunately it didn’t emerge. Meanwhile, the bank was confronting customary outpouring of liquidity.
In December 2019, Moody's cut Yes Bank's credit assessments and in January it featured that the bank's "independent reasonability was progressively tested due to its gradualness in obtaining fresh funds". The market price of Yes Bank's shares crumpled to the extent of 85% in the recent past, as worries due to its failure to raise capital quickly hosed speculator estimations. Even the bank's bonds flooded a record 11 cents to 93 cents, as per Bloomberg reports. A month ago, it declared a postponement in its detailing of the third quarter profit due to the assessment of the Expression of Interest received from four speculators — JC Flowers and Co. LLC, Tilden Park Capital Management, OHA (U.K.) LLP and Silver Point Capital.

LIMITATIONS OF THE STUDY

This study was confronted with some shortcomings. The study was conducted within a limited period of time, there was a time constraint in conducting the research and is based on secondary data only. The primary sources could not be explored as the study was undertaken during the lockdown period hence there was a resource constraint as well. Data were collected by resorting to secondary sources only.

CONCLUSION

The rescue package comes in the midst of sceptism that the breakdown of Yes Bank, the nation's fifth-biggest private bank, will make a tremendous impact on the whole Indian financial market and the economic environment which has to grapple with the liquidity conditions in the loaning space and the awful credit mismatch in the financial services sector. The govt and the regulatory bodies should enforce stringent norms to prevent the failure of any financial institution with the objective to retain the trust and confidence of the people in the system.

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RELATIONAL ENERGY- A MECHANISM TO MITIGATE STRESS AT WORK PLACE: WITH SPECIAL REFERENCE TO RETAIL SECTOR IN DEHRADUN

Dr. Pushpa Kataria[1] and Anup Kumar[2]
[1]Associate Professor, Doon Business School, Mi-122, Behind Pharma City, Selaqui- Dehradun, Uttarakhand
[2]Research Associate- Uttarakhand Technical University, Dehradun, Uttarakhand, India

Abstract

Energy has been a long-debated topic at workplace. Relational energy is described as the positive sensation and source of increased resourcefulness, productivity, engagement and satisfaction; experienced by employees as a result of contact and interaction with each other in the organization. People high on relational energy increases positivity and sense of resourcefulness while people low on relational energy results in stress, burnout, and disengagement (Sonnentag, Kuttler, & Fritz, 2010; Schaufeli, Bakker, & Van Rhenen, 2009; 179 Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).However, energy is not just related to leaders and employees anymore. It is observed from previous studies that managers have little idea about how energy can help at an interpersonal level or relational energy has been discussed in context to leadership role. Hence the study aims to find out how relational energy alleviate stress related to interpersonal problems at workplace at different cross functional levels in retail sectorin Dehradun. The objectives of the study have been explored through primary and secondary sources of data. A Multiple Regression Technique has been applied to find out the impact of relational energy at the workplace and highlights the area for future research.

Keywords: Energy, Relational Energy**,** Inspirational Leaders, Multiple Regression Technique

Introduction:

Energy has been a long-debated topic at workplace. Relational energy is described as the positive sensation and source of increased resourcefulness, productivity, engagement and satisfaction; experienced by employees as a result of contact and interaction with each other in the organization. According to Lerdal (2002) energy is based on an individual level built on four characteristics: (1) quality of an energy is a result of the bodily and mental energy, the latter is based on cognitive and existential energy; (2) force of energy is the existing feeling based on available energy; (3) energy forms fluctuates over a period of time, which is related to the feelings of fitness, tiredness, and fatigue and (4) distress is an outcome due to bodily functions. Cameron (2013) categorised, positive energy which over a period of time is exhausted when used; physical energy, psychological energy and emotional energy. It has been observed, over decades, energy played a critical role in building institutions. Positive energy created high performing organizations where as negative energy resulted in

disaster. The concept of 'Energy' connects human bonding and supports a pleasant relationship. It has been discovered through literature, energy explored through constructive feedback, rewarding, motivation and appreciation reinforced organizational productivity, ROI and turnover. The study explored to investigate relational energy, as an emerging mechanism to human management in organizations. It is noticed that people high on relational energy increases positivity and sense of resourcefulness while people low on relational energy results in stress, burnout, and disengagement (Sonnentag, Kuttler, & Fritz, 2010; Schaufeli, Bakker, & Van Rhenen, 2009; 179 Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Relational energy between two individuals, can be measured, enhanced and influenced by themselves over mutual dependence and interaction (Cole, et al., 2012). Teams performs well when the perceived energy within the team matches with each other. Hence wherever there is a negative energy, teams perform prominently low than teams that are comprised of employees with a positive energy (Borgatti, S. P., & Cross, R, 2003). Hence previous studies on relational energy have demonstrated that positive energy deriving from an individual have a direct positive effect on the motivation of others at workplace. By shifting positive energy amongst individuals increases their job engagement, which automatically yields better results. Therefore, it is implied that leaders and co-workers must know the art of engaging humans positively and productively with a view to lead positive relational energy in direction of performances. Managers should imbibe certain characteristics that would focus organizational resource- the valuable social and emotional resource. Wayne Baker, 2016 suggest four actions to increase relational energy in the workplace:

I. **Build High-Quality Connections:**leaders must focus on building high-quality connections with a group of like-minded people and to strengthen social intellectual capital to enhance the leadership channel.

ii. **Create Energizing Events**. To exploit positive effects of energy, leaders need to organize and run events to keep their employees motivated and energised.

iii. **Use Tools that Promote a "Giver" Culture**. Leaders must practice the art of a "Giver" culture which means the art of helping people at work. Giving and receiving help from each other creates 'gratitude' When help is received, a form of 'gratitude 'energy is created which forwarded further in helping others.

iv. **Try Mapping Relational Energy:** Leaders must aim to map energy derived from informal relations out of formal organizational chart. This energy map aid in creation of high-quality connections and culture.

In fact, there is no shortage of good employees in today's workplace. There is, however, a shortage of inspirational leaders and inspiring places to work. Sometimes leaders fail to drive motivation and enthusiasm and contributing to low morale of employees. However, energy is not just related to leaders and employees anymore. Bradbury, Hilary, Lichtenstein, Bergmann (2000) focused on how relationships and interactions should be an important focus of attention in organizational scholarship. In addition to

providing historical and philosophical bases for a perspective which emphasizes relationality, the study reviewed the growing number of methods that capture relational aspects of organizational life.Agashae, Zoe. Bratton, John (2001) explored leader-follower dynamics within a context of an organization. They examined the influence of leaders' behaviours on their followers' learning in an energy company based in western Canada.P. M. Senge's (1990) proposed that leadership behaviour can be conceptualized in terms of three roles: steward, designer and teacher, facilitated informal learning.Barsade, Sigal (2002) discussed about group emotional contagion, the transfer of moods among people in a group, and its influence on work group dynamics. Using a 2 x 2 experimental design, with a trained confederate enacting mood conditions, the predicted effect of emotional contagion was found among group members, using both outside coders' ratings of participants' mood and participants' self-reported mood. Further the research found that there was a significant influence of emotional contagion on individual-level attitudes and group processes. As predicted, the positive emotional contagion group members experienced improved cooperation, decreased conflict, and increased perceived task performance. Atwater, Leanne. Carmeli, Abraham (2009) studied how leaders create the impetus for creativity at work. The study examined one hundred ninety-three employees occupying a variety of jobs in Israeli organizations who completed surveys at two points in time to assess their perceptions of the quality of their relationship with their leader (LMX), their level of energy, and their creative work involvement and the result were positive. Owens, Bradley. Baker, Wayne. Sumpter, Dana. Cameron, Kim. (2015) have given an idea about how energy can be used at an interpersonal level in achieving workplace goals. They conducted four studies aimed at developing, validating, and testing the relational energy construct. Their study provided qualitative insights about the experience and functioning of relational energy in the workplace. Hence through this research work, an earnest effort has been made to study and analyse intellectual literature, a relevant basis for an empirical study. It is observed from previous studies thatmanagers have little idea about how energy can help at an interpersonal level or relational energy has been discussed only in context to leadership role.

Methods:

The research objectives are to:

i. To identify the relevance of relational energy at workplace at different cross functional levels of employees in retail sector in Dehradun.
ii. To measure the relationship between relational energy and stress level of employees in a retail sector in Dehradun
iii. To suggest strategies for improving interpersonal relations through positive relational energy at different cross functional levels in retail sector in Dehradun.

To investigate the above objectives the following hypothesis used in the study:

H0: There is no impact of relational energy on stress level of employees in retail sector in Dehradun.

H1: There is an impact of relational energy on stress level of employees in retail sector in Dehradun.

The aim and objectives of the study has been reached by the means of both Primary data as well as Secondary data. Primary data has been collected through questionnaire. The study aims to find out how relational energy alleviates stress related to interpersonal problems at workplace at different cross functional levels in retail sector in Dehradun. The entire survey was a structured questionnaire on relational energy assessment. The questionnaire has been designed to test dimensions of relational energy, which were verified through pilot testing: positive energy, Learning resource, job satisfaction, motivator, stress at workplace, positive changes at workplace, flexibility, empathy, emotional intelligence, employee engagement. A total of 416 respondents were contacted to fill the questionnaire, out of which 409 questionnaires were duly filled and were fit for analysis. The respondents constituted cross functional manpower consisting of 30 retail outlets situated in Dehradun. The questionnaire, included 34 items which were formulated on a 5-point Likert scale [1 being strongly disagree and 5 being strongly agree]. The reliability of the instrument was checked through Cronbach alpha. giving a value of 0.811 using SPSS. Thevalues measured has been depicted in the below table:

Table 1: Validity of Variables summary & Reliability Test

Case Processing Summary			
		N	%
Cases	Valid	409	98.3
	Excluded[a]	7	1.7
	Total	416	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.811	.811	28

Table 1 Showing listwise deletion based on all variables in the procedure and reliability test using Cronbach Alpha Values

Discussions:

The findings of the research study are categorized into three parts: Part I, Part II and Part III.

Part I- Depicts the descriptive analysis of demographic factors of employees based on feedback taken from retail professionals from various departments.

Part II-Describes Factor Reduction analysis and interpretation and Reliability test.

Part III- Deals with measurement of hypothesis.

Part I- Descriptive Analysis of Demographic Factors

Employees' datahas been collectedthrough questionnaire from 30 different retail outlets in Dehradun. The employees from whom the data was collected were categorized into

three types: Sales Staff, Store Assistants and Store Managers. The details of employees has beenmentioned in the below table and same has been shown through a pie chart. The table 2 below and Figure1 show that the ratio of sales assistants is high as compared to store assistants and Store Managers.

Table 2: Categorization of Employees

Type of Employees	Sales	Store Assistant	Store Manager
No. of Respondents	298	77	34

Table 2 Showing categorical analysis of employees

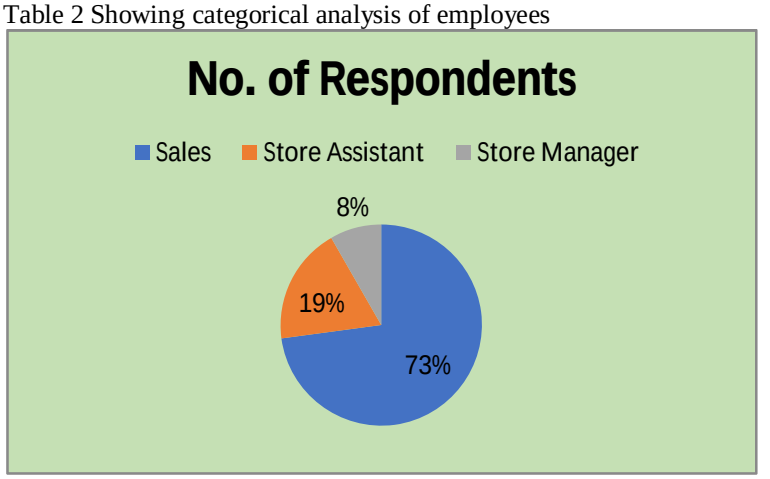

Figure 1: Pie Chart Showing Categorization of Employees

The following table shows the gender division in retail outlets in Dehradun. It is found that the ratio of males is high when compared to females. The same is depicted in the below Figure2.

Table 3: Distribution of Gender

Gender	Male	Female
No. of respondents	266	143

Table 3: Showing categorical distribution of Gender- Male & Female

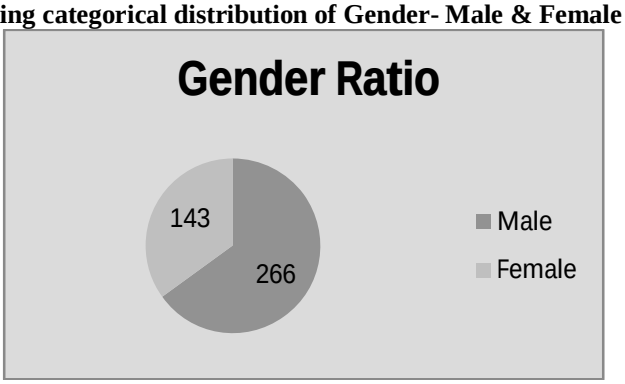

Figure 2: Pie Chart Showing Gender ratio

The below table 4 shows the educational qualification of employees employed in the retail sector and the same has been depicted in the figure 3. It is understood that large proportion of employees were graduates followed by post graduation

Table 4: Educational Qualification of Employees

Education Level	In Numbers
High school	26
Inter	63
Graduation	168
Post- graduation	97

Table 4 Showing educational qualification of employees

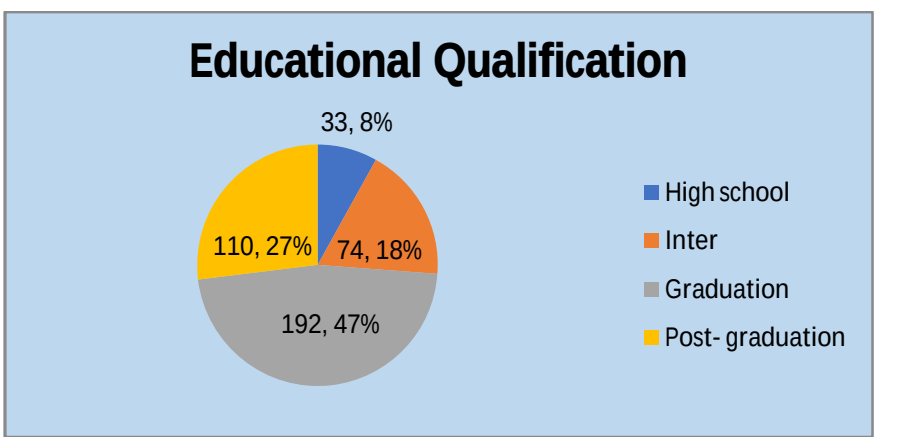

Figure 3: Showing educational qualification of employees

Part II-Describes Factor Reduction analysis and KMO and Bartlett's Test:

The study has utilized Factor Analysis Tool for reducing the factors and determining the validity of the questionnaire. The questionnaire has been measured on 34 variables using five point Likert scale from strongly disagree', 'disagree', 'neutral', 'agree and strongly agree' where one is measured as 'strongly disagree' and five as ' strongly agree'. By applying factor analysis, 34 variables were extracted to 10 factors, described in the table below showing the total variance and the Eigen values. Reliability and Validity of the questionnaire has been verified by KMO and Bartlett's Test as shown in the table below:

Table5: Showing KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.830
Bartlett's Test of Sphericity	Approx. Chi-Square	2406.072
	df	378
	Sig.	.000

Table5 ShowingKaiser-Meyer-Olkin Measure of sampling adequacy and Bartlett's Testof sphericity

The KMO and Bartlett's Test value is calculated at 0.830. This indicates the sample data is quite enough for analysis.

Further, it is seen in the table mentioned below, that covariance matrix, the initial eigen values are the similar across the raw and rescaled solution. Therefore the factor mapping has been done through principle component method, as shown in the below table6:

Table 6:Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.474	19.549	19.549	5.474	19.549	19.549
2	2.071	7.396	26.945	2.071	7.396	26.945
3	1.852	6.615	33.560	1.852	6.615	33.560
4	1.408	5.030	38.590	1.408	5.030	38.590
5	1.208	4.315	42.905	1.208	4.315	42.905
6	1.148	4.099	47.003	1.148	4.099	47.003
7	1.036	3.699	50.702	1.036	3.699	50.702
8	.999	3.568	54.270			
9	.976	3.487	57.757			
10	.958	3.422	61.179			
11	.885	3.160	64.339			
12	.799	2.852	67.191			
13	.781	2.790	69.982			
14	.765	2.731	72.713			
15	.748	2.671	75.383			
16	.722	2.579	77.962			
17	.710	2.535	80.496			
18	.662	2.363	82.859			
19	.613	2.188	85.047			
20	.565	2.018	87.065			
21	.544	1.944	89.009			
22	.522	1.865	90.874			
23	.500	1.785	92.659			
24	.471	1.682	94.341			
25	.463	1.653	95.994			
26	.396	1.415	97.409			
27	.387	1.381	98.790			
28	.339	1.210	100.000			

Table 6 Showing total variance chart; Extraction Method: Principal Component Analysis.

It is to be noted from the above table that out of 34 factors, 28 factors were grouped under 10factors according to Rotated Component Matrix,using by Varimax withKaiser normalization rotation converged to 25 iterations).The 10 factors identified were positive energy, learning resource, job satisfaction, motivator, understanding &empathy , positive changes at workplace, productivity enhancement, equity treatment, emotional intelligence, employee engagement.

Part III - Data Analysis and Hypothesis and Testing

Using the SPSS tool the overall model summary was developed to check whether the model is correct or incorrect. Hence from the below summary table, it is seen that the adjusted R squared value arrived at 33.7% which implies that Relational Energy (Constant variable) account for 33.7% variance in stress level (dependent variable). Hence the model proves to be correct.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.593[a]	.351	.337	.636	.351	24.008	9	399	.000

a. Predictors: (Constant),positive energy, learning resource, job satisfaction, Management support, understanding & empathy, positive changes at workplace, productivity enhancement, equity treatment, emotional intelligence, employee engagement.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.487	9	9.721	24.008	.000[b]
	Residual	161.554	399	.405		
	Total	249.042	408			

a. Dependent Variable: Stress level

b. Predictors: (Constant), positive energy, learning resource, job satisfaction, Management support, understanding & empathy, positive changes at workplace, productivity enhancement, equity treatment, emotional intelligence, employee engagement.

As understood Anova table, compares the beta value for the F test of significance level and it is evident that the beta value is less than significance level. Hence it is understood that sample data provides sufficient evidence to conclude that the regression model fits the statistics clearly.

Furtherit is seen from the above table that since the 'B' valuewhich is less than 5% significance level, it is proved that relational energy has a positive impact on the stress

level of employees. Hence the model proved to be appropriate. From the above analysis it is clear that there is an impact of relational energy on stress level of employees in a retail sectorin Dehradun. Hence the null hypothesis is rejected.

Conclusion:

The research study reveals that most of the employees at different retailsector in Dehradun. It is believed from the study that the positive flow of energy at workplace increases job satisfaction and is an important resource. It also reveals that while most of the employees feel that relational energy helps in building a healthy relation between superior- subordinate and cutting attrition rate, some feel undecided about the latter. The study further reveals that employees feel there is a strong need of raising awareness in the organisations regarding relational energy and how important it can be to the organisation. While relational energy is a relatively new topic in India, however awareness needs to be raised regarding the same so that organisations can use it as a resource. The research topic falls under both human resource management studies and organizational behaviour studies, which establishes a valid connection between these two areas to build better organizations. Implementation of these dimensions in the organization along with their underlying variables can help build more efficient and effective organizations.

Conflict of Interest :

We certify that there is no conflict of interest with any financial, personal, or other relationships with other people or organization related to the material discussed in the manuscript.

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CHALLENGES AND OPPORTUNITIES IN INDIAN TOURISM INDUSTRY WITH SPECIAL REFERENCE TO YOGA

[1]Sheetal and [2]Neeru Devi
[1]Independent Researcher, M.A. Yoga (UGC-NET)
[2]Independent Researcher, M.Phil, M.Com (UGC-NET)

ABSTRACT

Purpose – Yoga is emerging as an innovative factor in Indian tourism industry. Yoga is practiced by people in countless countries now a day. It is famous for health and wellness, spiritual & emotional purposes. People are attracted towards India from all over the world for the purpose of Yoga tourism. Yoga tourism is an emerging trend in India and has a wider scope of opportunities. As an emerging sector it has challenges too. That's why there is a lot of scope for innovation in this arena. In this paper, we will discuss about various challenges and opportunities in Indian tourism industry with special reference to Yoga.

Design/Methodology – A review of literature from Indian and foreign authors were analyzed to identify the various challenges and opportunities in yoga tourism in India.

Findings – It was found that opportunities include unique destinations of India, cost effectiveness; availability of services and packages on time, rich culture of India and the blend of spirituality with Yoga attract a huge amount of Yoga tourists towards India from the world. Challenges mainly include problems in security and safety of the Yoga tourists, language barrier not for English but for other languages i.e., Russian, French and Spanish etc., hygiene problem, infrastructure facilities are not so good and lastly the competition which is arriving from other countries.

Practical implications – The study recommends that industries under yoga tourism should focus on problems like security, safety, sanitation and hygiene so that more tourists can be attracted. They should also focus upon factors like destination, immense culture and spirituality so that these opportunities can be encashed.

Paper Type – Review Paper

Key Words: Indian Tourism Industry, Yoga Tourism, Challenges & Opportunities.

Introduction

India is well known globally for its exceptional yoga richness from ancient times. Yoga is an innovative aspect in tourism industry in India. Yoga tourism has a wide scope of innovative practices to attract the tourists from all over the world and satisfy their needs

gracefully and to the full extent. In today's world when the lives of people are so miserable because of mental, emotional and physical traumas, yoga is emerging as a great support system to everyone. Yoga practices are natural healer, simple to practice & convenient (Devi N., & Sheetal 2020). Use of various technologies i.e. smartphones & laptops etc. also leading people to various health problems related to mind & body (Malik S., & Devi N. 2018). People practice yoga in day to day life to stay fit & healthy (Sheetal 2020). People from all over the globe come to India for the purpose of yoga tourism.

People look up to yoga for helping them in day to day lives as yoga is good for physical, mental, emotional & spiritual health all together. Yoga not only improves health but reduce negativity in one's life (Devi N. & Sheetal 2020). Yoga is an ancient therapy and practiced by people all over the world for various benefits related to mind & body (Sheetal 2020). Various studies identify the potential of Yoga tourism as an emerging milestone in Indian sub continent. A research conducted by EcemOznalbant et al., (2019) stated that Yoga has become a widespread activity and also becoming popular as tourism. Many people around the world travel to the roots of Yoga in India, where it was originated. Begum (2012) stated that out of various categories of tourism, the medical and wellness segment becoming more interesting and increasingly popular. Kumar (2015) stated that Yoga tourism has the highest potential among several feathers in the cap of Indian tourism industry as Yoga is a great cultural asset. Mochi et al., (2013) stated that India has gained tremendous popularity in the developing concept of Medical tourism and is attracting people from all over the world for their medical and relaxation needs as well.

Parashar et al., (2014) stated that Yoga is emerging as one of the bigger, stronger and important tourism sector in pursuit of health or spiritual benefits. Domestic tourist has also emerged as a powerful source for the development of health tourism. India can be said as the Yoga and Spiritual capital of the world. Aggarwal (2008) stated that people from all over the world come to India for ayurveda, Yoga and meditation in Rishikesh. In fact India has emerged as a destination for health tourism because of it. India has been always known for its spirituality and Yoga. India is called the "Yoga-Bhoomi" and gateway to the heavens also. India is renowned globally for its ancient healing practices and alternative therapies as well. From ancient times we have followed our own indigenous healing systems and medicinal practices such as Ayurveda, Naturopathy and Pranic Healing. It is no wondering that people from all over the world are being attracted to the Indian sub continent for guidance towards leading a more spiritually satisfying way of life.

Jaswal (2014) stated that Ayurveda regarded as the "Science of Life" which was developed in 600 BC in India. India has witnessed an overall growth in tourists due to the upcoming Ayurveda and Yoga Tourism. Jammu (2016) stated that India offers diverse options of rejuvenation and healthcare amenities to tourist. Some of the different forms of healthcare tourism offered are Yoga, meditation, ayurveda, naturopathy etc.

which make India the unique destination for them. People are realizing the value of alternative forms of treatment that focus on natural healing of the body. Yoga is on the top among these and in present time it is getting globally popular. Now people around the world also started practicing Yoga to heal their body and mind. The Ministry of Tourism, Government of India has taken initiative to make proper plan and policies to promote Yoga as a main Tourism Product after Realizing the potential to develop and promote Yoga Tourism as the niche tourism product among international tourists. Marketers have various opportunities in Yoga tourism to attract the tourist but at the same time there are also some challenges regarding this field.

Objectives of the Study and Methodology

As discussed earlier, this paper makes an attempt to highlight the opportunities and Challenges of Yoga tourism. This framework will be of help for the researchers in further studies to find out major areas for innovation regarding Yoga tourism in India. This paper is based on previous literature to identify threats and opportunities in the field of Yoga tourism in India.

Developments in the conceptual framework

Previous literature was reviewed for achieving the purpose of this study. Various opportunities and challenges were extracted from the literature. The major opportunities and challenge are listed as under:

Opportunities:

Destination

India is popular among tourists for Yoga. They love to visit here for its authenticity, soothing weather, beautiful locations, diverse flora and fauna, abundant sunlight, wide range of terrain, evergreen rivers and mesmerizing landscapes. It's like they love destination Yoga tourism and they love plenty of destinations here in India for the purpose of their Yoga visits. Kumar (2015) stated that there are many places and Yoga centers in India which are regularly visited by the Yoga tourists all around the world; hence they became the major destinations for Yoga seekers who are attracted to Yoga centers with beautiful locations. In north India, Yoga tourists attracted towards the beautiful hill stations in Himalayan region, where the weather is little chilly mix breeze and sunlight around. These places mainly fall in the states of Himachal Pardesh and Uttrakhand. These places include Rishikesh in Uttrakhand and Dharmsala and Mcleodganj in Himachal Pardesh. Apart from these, Varanasi in Uttar Pardesh is also the centre for Yoga tourists. In central India, Pune city in Maharashtra is also a hub of yogis. In western India, Goa is very famous among Yoga tourists for its Yoga schools. In southern India, the states of Karnataka, Kerala, Tamilnadu and Pondicherry attract Yoga tourists. Among these Chennai in Tamilnadu and Mysore in Karnataka are main

hubs. Aggarwal et al., (2008) concluded that Rishikesh very popular among Yoga tourists. It is located at 1360 feet above sea level. It is the land of yogis and sages form ancient times. It is one of the first choices of tourists coming to India forYoga tourism. Yoga is practiced and taught in ashrams on riverbanks in Rishikesh. Modern life is filled with stress, complexities and mental pressure. What could be a better than to relax in the soothing and therapeutic balm of India's Yogic practices.Places of interest of Yoga tourists in Rishieksh mainly include Triveni Ghat**,** Bharat Temple**,** Lakshman Jhula&Nilkantha Mahadev Temple. Some special activities like International Yoga Festival is also attract tourists; it is organized every year from February 2 to 7by Uttarakhand Tourism. Begum (2012) researched about medical and wellness tourism; and stated that people come to Uttrakhand in India for Yoga purposes, and Kerala is popular for ayurveda.

Mochi et al., (2013**)** stated that India itself is very attractive destination for visitors around the globe; it has a very old civilization and is known for its diverse geographical landmarks. India has popular traditional healthcare system in the form of Yoga. India has been a tourists attraction because of its magnificent Himalayan ranges in the north and fringed along the west, south, and east by a continuous stretch of beautiful beaches, India is a vibrant combination of breathtakingly stunning landscapes and thick tropical forests. Thus India is an exotic tourist destination offering everything from modern medical to traditional healthcare with enjoyment of visiting some awesome places. Parashar (2014)stated Yoga tourism is blooming in Rishikesh. People from across the world now come to India for Yoga in Rishikesh. India has fast emerged as a health tourism destination because of these. Since time immemorial, India has been known for Yoga. When we are talking about Yoga here, the very first name comes in mind is Rishikesh. Indeed it is popular as the 'Yoga Capital of the World'. It is internationally renowned for Yoga.

Bharti (2015) stated that in India has main products of wellness tourism are as spas, ayurveda, naturopathy, Yogaand meditation which help to rejuvenate mind, body and soul. There are many destinations in India which encourage Yoga Tourism. Like Rishikesh, Kedarnath, Gangotri in the mountain ranges of the Himalayas of in North India, Kerala and Tamilnadu in South India and Goa in West India are some of the places where Yoga tourists can get eternal peace and satisfy their spiritual quest and are the perfect destinations for Wellness Tourism. These places attract regular tourists from all over the globe and provide natural healing procedures and life style changes to foster physical and psychic well-being to the deserving tourists. India also has many popular places for wellness tourism that are renowned for their tranquil living atmosphere, natural environment, beautiful flora and fauna and organically validated traditional healing procedures of mind and body.

The names of some of the most popular places in India for Yoga and wellness tourism are Ananda (Narendranagar, Uttarakhand), Banyan Tree Spa (Udaivilas, Udaipur), Golden Palms (Bangalore), Vedic Village (Kolkata), Amatrra Spa (New Delhi),

Aturvedagram (Bangalore), Krishnamacharya Yoga Mandiram (Chennai, Tamilnadu), Sivananda Ashram (Madurai, Tamilnadu), Iyengar Institute (Pune), Atma Darshan Yogashram (Bangalore), Kaivalyadhama (Lonavala), Patanjali Yogpeeth (Haridwar), AtmaVikasa Centre (Mysore) &Yog-Ganga Centre (Dehradun). Jammu (2015) stated that India is the most popular and exciting destination for tourism all around the world. It is well known for its rich and diversified flora and fauna, food, deserts, beaches as well as snow covered peaks of Himalayas. Devrath et al., (2011) stated that India has potential to develop various hubs like Kerala for Ayurveda and Uttrakhand for Yoga for the nearby local and international market. It also diversified terrain like from mountains to desserts.

Cost Effectiveness

India is popular among Yoga tourists for its costs effectiveness also. As India provide these services at lower cost compared to many countries across the world. It attracts more Yoga tourists because of this unique feature. Dawn et al., (2011) stated that India have a competitive advantage in comparison to its competitors due to its high standard of services offered at a very competitive price. India provides the services only at one tenth of the cost in industrialized countries. Jammu (2015) stated that India have all the facilities in large quantities which tourists require. There are a number of convenient and inexpensive flights to India. All this result in low cost tour packages in India which attract people from around the world.

Chandran et al., (2017) stated that India provide cost advantage and tourism attractions to the world. People are experiencing rapid rise in life style related diseases because of fast modern life style. Increasing number of widespread lifestyle related health problems also attracts tourists to this alternate health care facility. Modern communication advancements and widespread use of internet make information available at finger tips to the seekers and help them to identify best service provider at least possible cost. There is good demand for Indian health services from developed countries such as US, UK, Canada because of its affordable cost. Devrath et al., (2011) stated that India is viewed as one of the cheapest wellness tourism destinations in the world. In recent years, government supported the low cost therapies in Yoga and Auyrveda. The improved infrastructure have taken India to new heights in wellness tourism. As wellness is not a one day activity so the reasonability helps and allows tourists for longer stays in India and obtaining desirable results.

Overall India is emerging as one of the world's most cost-efficient wellness tourism destinations, which also helped India to attain a good position among the globally like thailand, the philipinnes etc. Yoga is very cost effective therapy with many benefits (Sheetal & Devi N. 2020). Jammu (2016) stated that India develops all the facilities of tourist's interest in very large amounts. There are growing numbers of convenient, low cost flights, luxury hotels & resorts, well connected highways and many more natural and artificial attractions also. All these result in attractive packages to which attract

people all over the globe Kumar (2015) stated that cost effectiveness is the key selling point of Indian Yoga tourism. This is the major advantage factor for India in comparison to the other competitive Yoga destinations in the world.

Availability

Tourists face problems in booking of Yoga packages such as long period of waiting but India has no such issues. India has emerging market of Yoga tourism. So tourists don't have to wait for travel and also they don't need to do long planning for their travels programs. Also, India is home of Yoga from ancient times, so many kind of ancient practices are available here which are scared in the world. Kumar (2015) stated that India has an advantage in the global resurgence of interest in Yoga as it has availability of strong infrastructure and skilled manpower coupled with rich heritage of indigenous knowledge. Jammu (2016) stated that India has availability of planned Yoga packages deals.

With the involvement of private sector in tourism industry it becomes easier for tourists to visit India for Yoga, because now they can get good deals which include flights, transfer and hotels etc. Devrath (2011) stated that India has got a comparative advantage in wellness tourism industry as it rests on already established tourism infrastructure as well as a renowned name in the sector of medical tourism across the world. It has relatively strong intellectual capital, an established hospitality industry, and good environment. India has variety of tourist attractions and destinations which are capable of providing pleasing experiences of life. Jammu (2015) stated that long waiting time for treatment in developed countries is one of the main factors for the people to visit other countries for their purpose. Because of the involvement of private sector in tourism now it is easy for people to visit foreign countries for the treatment, because now they can get package deals for the treatment which includes everything of their need.

Immense culture

India as a country is truly blessed in terms of rich cultural heritage. It has vast cultural values, diverse traditions and large number of festivals, rituals & customs. From very old times it attracts Yoga seekers all around the world due to its rich cultural lures. People love its colorful culture and traditions, and enjoy the festivals here. Aggarwal et al., (2008) stated that Yoga tourists interested in celebrating and participating in Indian festivals. They feel pleasant and more satisfying in their lives due to the attractive cultural heritage of India. Many tourists believe in religion and customs of India and enjoy celebrating rituals which are followed in Indian tradition.

Tourists love the Indian culture, traditions, traditional music, and cultural dance etc., they find it fascinating and carry zest for experiencing our culture. Tourists crave for local events like cultural dances. India has great opportunity for conducting classes to

teach Indian culture and traditions, and organizing cultural evenings for Yoga tourists. Kumar (2015) stated that Yoga tourists attracted towards India because it offers typical Yoga tour packages which includes a schedule of morning and evening time with aarti, attending Yoga classes and learning the indigenous culture of India. Jindal et al., (2019) stated that India is eagerly approached by the Yoga tourists due to many factors including its cultural diversity. Jammu (2016) stated that India have Incredible attraction from Yoga tourists globally. It has rich and diversified culture, oldest history & heritage, people with unique lifestyle, fairs and festivals which are major factors in tourist's attraction. Chandran et al., (2017) stated that India is a country with very rich cultural heritage and traditional values. It is well known for its diverse destination specialty in terms of natural, cultural and other health care services. This diversity of India attracts very large number of Yoga tourists every year.

Spirituality

Aggarwal et al., (2008) stated that majority of Yoga tourists visiting India believe that spiritual religious places give a peace of mind and they feel spiritually satisfied by visiting here. That's why they prefer to make their trips to spiritual places rather than adventurous and historical places. They have an urge to learn more and more about the importance of places like Haridwar, ashrams and Holy Ganges. They like Holy Ganges, doing prayers at night at the bank of Ganges, temples, Indian cuisines, and sermons and love to interact with monks here. Some of them are even eager to visit Satpuris in India that are Ayodhya, Mathura, Kashi, Kanchi, Ujjain and Dwarka. They believe that they are not looking for luxury but for journey to meet the divine goal of life so that that can make their life simple and more fulfilling and rewarding. Parashar et al., (2014) stated that India is considered as the 'Yoga and Spiritual Capital of the World'. Yoga tourists come to India to learn Yoga and Spirituality and practice them to lift their souls at higher level. Yoga is considered as one of the six Indian philosophies. Yoga is so much popularized as an industry. But for some Yoga is practiced for spiritual upliftment. From ancient times, India has been known for its Yoga and spirituality all around the world. Rana (2015) stated that people from all over the world now come to India for Yoga, ayurveda and meditation in India. In India, Rishikesh remains the most preferred spiritual destination among Yoga tourists. The motive of tourists visiting ashrams have been with the belief that religious places give a peace of mind and spiritual satisfaction.

Challenges:

Security & safety

People who are travelling from all around the world look first and foremost for the factor of safety and security. Same factor is applicable in Yoga tourism. Yogis look forward for their safety. In India, it has become a challenge for the yoga tourism industry. Jammu (2015) stated in his research paper that there people who are travelling looks for security factor at the destination where they are visiting. He examined that

India is not ensuring safety and security and it is becoming more challenging for Indian tourism industry to attract tourists. Aggarwal et al., (2008) concluded in their research those tourists who travel India for Yoga feel unsafe when they travel to public transport and main reason behind this security is thieves and pickpockets. Bharati (2015) also identified that in every type of wellness tourism safety and security are the main issues which tourists face and Indian industry should focus on this aspect to attract more wellness tourism. The author found that tourism cannot be prompted if proper security measures are not ensured. Jammu (2016) again focused that various terrorist attacks on India the tourism industry of India is lacking in attracting customers and they avoid traveling in India. For encouragement of Yoga tourists' proper measures should be adopted. It was again said that theft is also a big issue which comes under safety and security. Chandran et al., (2017) also stated in their research that terrorism affects the mind of tourists about the place they are visiting.

Language

The second biggest issue in yoga tourism in India is language problem. Tourists visiting India find this as the biggest problem. This challenge is supported by previous literature. Jammu (2015) stated that India is a non-English speaking country. People travelling to India face the problem of language because English is the global and business language around the world. Yoga tourists find it difficult to understand the language as they want to know the things more deeply. Indian industry fails somehow on this aspect to give them proper service. Aggarwal et al., (2008) concluded in their research that there is availability of guides who know some language but not all the languages are available for tourists. So it becomes a major problem for tourists. Jindal et.al., (2019) examined that in wellness industry language is a big problem because people don't understand the language of each other and it makes Indian medical tourism less efficient in some ways. Jammu (2016) again found that English is common language around the world but most of people in India don't understand the same so it is creating a challenge in Yoga tourism India. Dawn et al (2011) also concluded that Indian tourism industry is lacking language translators. Kumar (2015) added to literature that in India there is shortage of language qualified workforce.

Hygiene

Hygiene is another aspect of challenges faced by yoga tourism industry in India. Rana (2015) surveyed about hygiene of restaurants in the eyes of tourists. It was found that majority of the tourists were dissatisfied about hygiene of restaurants in India. Jammu (2015) studied about perception of customer towards unhygienic country. It was found that India is fast growing developing country but cleanliness is still a big problem. Image of India in tourists is not good in hygiene aspect. It was also found that India has improper waste management system and poor infrastructure such as roads and public utilities. Aggarwal et al., (2008) also added to literature that Yoga tourism in Rishikesh can be improved by providing proper sanitation and good hygiene. Bharti (2015) also found that India has improper traffic system, zero waste management and no proper

rules on pollution control which adds negative image in the mind of tourists. Kumar (2015) studied that India has lack of hygienic awareness and it creates negative image in mind of tourists. Jammu (2016) concluded that hygiene and sanitation must be maintained at places where tourists visit. Chandran et al. (2017) also stated that there is a need to sensitize tourists about hygiene and healthy practices should be adopted that are crucial for promotion of health tourism in the country. Dawn et.al, (2011) added that there should be proper management of services and ensure hygiene and quality standards. It was said that not only the private hospitals but all around the country too stands to benefit from this by earning foreign currency.

Infrastructure

Infrastructure is also a big problem in Indian tourism industry. There are not sufficient infrastructure facilities to attract tourists. Jammu (2015) stated that India is facing the problem of lack of funds to improve its infrastructure such as roads and public utilities. These all factors affect tourism industry in India. Aggarwal et al., (2008) identified in their study that proper development plans should be taken to improve infrastructure by ministry of railways, road transport,, aviation industry so that more tourists can be attracted to India for Yoga. Rishikesh is Yoga hub of India and not having airport in the city tourists finds it a big problem. Bharti (2015) also found poor infrastructure problem in terms of roads, drainage and traffic system in Yoga tourism industry in India. Jindal et al., (2019) found that various aspects which tourists look upon before traveling are infrastructure related aspects and India is lacking this issue. Jammu (2016) stated that India is developing but still has infrastructure problem. It has no proper management of sanitation and public utilities and drinking water problem. Chandram et al., (2017) studied that to take opportunity in health care services it is necessary to provide proper infrastructure so that tourists can be attracted towards Yoga in India. Dawn et al., (2011) added value to literature that to boost wellness tourism in India it is necessary to develop proper infrastructure facilities such as transport.

Competition

The last but not the least and foremost factor which is emerging as big issue in yoga tourism is competition. Various countries are promoting yoga as a business product and provide high level facilities to tourists. Jammu (2015) identified that India has much opportunities for health care sector tourism but India is facing cut-throat competition in Yoga tourism from various countries such as Malaysia, Thailand and China etc. So India needs to promote it actively so that it could be on right track to attract tourists. Jindal et al., (2019) also said that India is providing top services in medical tourism but various countries are competing for the same factor like Malaysia and Thailand etc. so Indian health care tourism can be boosted only with the help of f advertising to attract customers. India is hub for medical tourism for countries like UK, Japan, and U.S.A. Because people in these countries have to face many problems in their home country such unaffordable cost and long waiting time for appointments. Jammu (2016) added

that India has knowledge of Yoga which is now not only limited to India. Yoga has become a global property due to globalization. Various Yoga businesses have been started in previous periods in India to attract tourists for providing Yoga therapies. But various countries are giving competition to India in this field such as Indonesia, Malaysia and Thailand etc. So there is need of huge advertisement expenditure to promote Yoga tourism in India. Chandran et al., (2017) again said that various Asian countries are giving competition to Indian Yoga tourism industry. It is needed to focus upon standards so that tourists can be retained. If proper standards will be maintained in Indian Yoga Tourism, then tourists will not divert to other competitive destination for Yoga in world.

Conclusion

Yoga tourism is an emerging trend in Indian tourism industry. As an emerging market it has wide range of opportunities & challenges. The present study revealed various opportunities and key challenges faced by yoga tourism in India. Studies of various authors revealed that every part of India i.e., southern India and northern India etc. have their own specific famous locations which attract yoga tourists, these places include Himalayan region, Uttrakhand, Kerala, Goa and Mysore etc. It was also revealed that the reasonable prices of the services provided in India, the availability of services on time, the cultural lures and spiritual wisdom through yoga attract yoga tourists all around the globe to India at a very large extent. This study revealed the key challenges mentioned by the authors in the field of yoga tourism in form of security and safety, language problems, hygiene, sanitation, infrastructure, roads and the cut throat competition from the other emerging countries in this field.New opportunities are growing day by day, and challenges and issues can't be tackled in short time spans. So, there is a lot of scope for further research to identify more opportunities and challenges arriving in the field of yoga tourism. This paper would lead to explore those opportunities and challenges and provide the way for further research in this field.

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IMPACT OF COVID-19 ON INDIAN AGRICULTURE: OPPORTUNITIES AND CHALLENGES

[1]Suman Kumar Premee and [2]Shweta Sonkar

[1,2]Research Scholar, Department of Economics MGKVU Varanasi, UP, India

Abstract

Corona virus is a global pandemic which has influenced all aspects of life. From the retail market to the cottage industry, small scale industries and large scale industries, shopping mall it has a huge fatal impact on all. Agriculture sector was the foundation of Indian economy and it will remain. This sector plays a vital role in rural livelihood, employment and national food security. Covid-19 has an impact on all sectors of the economy, not on one sector.

It is economically, politically and socially affecting the whole world. All three sectors agriculture, manufacturing and service sectors are moving towards a deep recession. According to the current data, the impact of Covid-19 is less on rural area than urban area in India. If this crisis spreads to the villages, the situation can become even more frightening. Due to the migration of a large population back to the village, there is increasing pressure on the agriculture sector for livelihood. According to the NSSO report in January 2020, the growth rate of agriculture will be around 3% in the year 2020 but due to Covid-19 growth rate can remain very low.

The condition of farmers is not good due to natural calamity, indebtedness of farmers and not getting proper price of agricultural products. In such situation Covid-19 is having a very bad effect on Indian agricuture. Covid-19 can be converted as a big opportunity for an agricutural sector. Emphasis can be laid on developing agro- based industries in 6 lac villages in the country. By doing this where agriculture will be developed on the one hand, on the other hand migration of people will also be prevented from getting employment in their villages.

Key Words –Agriculture, Covid-19, Farmers, Affected, Rural Economy, Migration.

Introduction -

Covid-19 is a global pandemic. It spread due to SARS-Cov-2 virus. This pandemic has affected all the countries of the world badly. The first case of corona virus came in November 2019 in Wuhan city of China, which originated from city of China and spread to the other countries of the world. Corona virus is a new virus and it can spread from infected person to healthy person through small droplets from the nose or mouth which are spread when a infected person coughs or speak. Those droplets enter the person's body directly or through by touching the infected surface and then touching their face. It shows symptoms like pneumonia for example fever, dry cough, breathing

difficulty, body pain etc. Most people suffering from covid-19 are recovering without special treatment but the person who is already suffering from some disease is dying. This pandemic has spread throgh the fault of China and WHO because in time China and WHO spread the illusion that it is not pandemic and it does not spread from human to human.

If China and World Health Organization had given correct information about corona virus on time,today this pandemic would not have spread all over the world. The United States of America is accusing China of deliberately spreading corona pandemic, because if Corona virus were natural it would not spread to all the countries of the world because every country have different climates. While on one side there is severe snow in Arctic countries, on the other side there is severe heat in African countries, so there this corona virus would have dies but it did not .Some countries are accusing China of deliberately spreading corona virus because by doing this, while on one hand other countries are busy in searching for ways to avoid the pandemic on the other hand China is increasing its trade in other countries. The corona virus is nothing less than a boon for China because China is expanding its trade under the cover of corona. China is buying shares of other countries of world at low prices. Where the countries of the world are buying large quantities of the corona testing kits from China, China is making huge profits by supplying inferior goods. China is buying companies of the other countries at low prices. China's pre-planned intention can't be denied because corona-virus originated from Wuhan city of China as it spread rapidly to other countries of the world but did not spread to any other city outside of Wuhan city of China that means it was pre-planned .If we call it Chinese virus, there will be no exaggeration. There is no cure for this corona virus yet scientist of the world is engaged in finding its treatments and vaccine. In such situation, the only way to avoid corona virus is caution and prevention. Guidelines have been issued from time to time from the World Health Organization and the Government of India, which is necessary to follow. Currently 4.1 Lac people in India are infected with this virus.

Corona virus has an impact on all sectors of the economy. No sector has escaped its impact. Whether it is primary sector, secondary sector or tertiary sector. From small scale industries to large scale industries, education, medicine or even the global market, there is a recession.

Agriculture sector plays an important role in Indian economy. This sector is a source of food supply, sources of government revenue, source of livelihood etc. In India around 43% of the land is used for agriculture. Agriculture and allied sectors contribute about 15% to Indian GDP and provides employment over 50% of the working population.

This article explains the impact of Covid-19 on Indian agriculture and also the article describes the possible challenges of Covid-19 in agriculture sector and its solutions.

Impact of Covid-19 on Agriculture

(1) Impact on storage and marketing -

Corona virus had severe impact on farmers. All the actions of farmers are adversely affected. The crisis has arisen on the farmers and people engaged in other agricultural activities. Ravi's crops like wheat, gram, mustard, pigeonpea, lentil maize crop somehow reached home but due to natural changes caused by lockdown, farmers are not able to prepare the crop properly. There is a problem of storage of potato, onion, garlic etc.Vegetable farmers are being hit twice. Outsiders are not allowed in the market. Hotels, restaurants are closed. Large events such as weddings are not being held, due to which the demand for vegetables has remained local only ,farmers are forced to throw the remaining vegetables because the cost of reaching the market is not even being received. People are avoiding buying raw vegetables like cucumber, tomato, carrot, watermelon etc due to fear of getting corona infected. Since they were sown in the month of January itself it is currently being produced at a rapid race, all the capital of the farmers has been invested in preparing these crops. Even after investment in the plowing of the field, seeds, fertilizers and irrigation the crisis has arisen in front of small producers.

(2) Impact on animal husbandry -

Due to lockdown the condition of the people engaged in agricultural ancillary industries like animal husbandry, poultry, fisheries etc is also became pathetic. Since the demand of meat, fish, chicken increases in marriages due to this, the poultry farm people has invested in it on a large scale. The demand of meat, fish, egg, chicken increases after navartri also. Keeping this in mind, the producers had invested extensively in it. But before reaching the level of production and sales, the market of these things was destroyed due to lockdown. Also consumers are not buying non-vegetarian products like meat, fish , egg, chicken etc due to fear of corona infection, due to this prices fell drastically and their capital was lost. According to the World Health Organisation (WHO), corona virus has a large family of viruses that are common in animals. But possible source of Covid-19 have not been confirmed yet.

The situation of cattle ranchers is also pathetic. A large source of income of farmers comes from animal milk. The consumption of milk, khoya, paneeretc in sweet shops and hotels has almost stopped. Due to this the consumption of milk has reduced drastically, the dairy people are also buying less milk. The demand for milk increases considerably during summer days because weddings happen at this time, but due to the lockdown these events are also closed. As a result milk producers are forced to sell milk at low prices. In such situation, the cost of producing of milk is not available. Due to traffic stops, increase in prices of petrol and diesel, increase in the value of cattle feed its production cost increases. Despite government efforts to control the price, it is not showing any effect at the ground level.

(3) Impact on distributed and landless farmers -

A serious crisis has arisen in front of farmers who are landless or do share cropping because even after investing capital, their hand is completely empty. If any government assistance comes in the future or in the recent times, then the land owner will get the benefit, not the actual cultivator of that land. In such situation, the possibility of them drowing in debt can't be denied. Along with the problem of maintaining the family, daughter's marriage, children's education etc starvation can also come in front of them.

(4) Impact on sowing of zaid and kharif crops-

On the one hand, farmers are not getting their cost from the crop of Ravi, on the other hand seeds, fertilizers, chemicals etc are also not available for sowing of zaid crop. Although the government has ordered to open fertilizer's and seed's shops but there has been a shortage of goods due to the shutdown of production in industries and those who have some goods left are charging higher prices.Where on one hand,the low price of the product and the debt to the farmers have made them distressed, on the other hand more investment has to be made in planting zaid and kharif crops. Labours are also unable to muster the courage to go to the field due to corona virus infection.

(5) Increasing population pressure on agriculture -

In the Indian economy scenario, 69% of the population is still dependent on agriculture. The rest of the population is dependent on the secondary and tertiary sectors. About 86% of the people work in unorganised sector in India. The work of people doing small business, factories employees and daily wage workers is closed due to lockdown. People are migrating from cities to their native places due to work shutdown. The present generation has never seen this frightening scene of migration to the village. With the migration of these people to the village now their livelihood will depend on the agriculture sector only. As a result of this, the pressure of population will increase on agriculture. Marginal productivity of workers will be reduced. At the same time, due to shortage of workers in the industries, production of commodities will be reduced resulting in increased inflation. In the present scenario it is clear that along with agriculture the existence of urban life, industries rests on the rural population.

Covid-19 challenges in agriculture sector-

While the farmer is already stricken on the one hand, the challenges have also increased for the future. It will be very difficult to overcome the lack of capital of the farmers, to give the farmers right price for their product, to compensate for damage caused by the corona virus. The challenges of reducing the growing impact on agriculture as a result of migration will also have to be addressed. At the same time, marketing of agricultural product will also have to be arranged. If the corona virus outbreak happens in the villages, then the situation can be very terrible.

Suggestions-

All industries need to be started immediately to prevent the migration of workers from cities due to the outbreak of corona virus. All workers must be screened at their factory and immediately employed,by doing this there will not increase the pressure of unnecessary population on agriculture and the migration of workers will also stop. Here it should be very important to take care of social distancing and other protective measures should also be necessary along with wearing the mask. Government should focus on setting up agro based industries in about 6 lac villages of the country. Instead of centralizing industries in one place, it is very necessary to lay a network of industries in every corner of the country so that congestion is reduced in one city and it is easy to deal with such challenges in future.

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नारीणां वहुरूपत्वम्

ड. दिलीपकुमारपण्डा
सहयोग्यध्यापकः,संस्कृतविभागः,घाटालरबीन्द्रशतवार्षिकी महाविद्यालयः
घाटालः , पश्चिममेदिनीपुरः,पश्चिमवङ्गः,भारतबर्षः

भूमिका

भारतीयसंस्कृतौ नारीणां महनीयता परीक्षितुं स्बसंस्कृते स्बस्बरूपज्ञानमत्यावश्यकम् ।भारतीयसमाजे नारी शक्तेस्त्यागस्य तपश्चर्यायाश्च साक्षात् मूर्तिः ।मनुना सत्यमेवोक्तं यत् **–"यत्र नार्यस्तु पुज्यन्ते रमन्ते तत्र देवता** "इति ।यस्मिन् समाजे देशे च नार्यः समाराध्यन्ते समाद्रियन्ते च तत्र देवा अपि हर्षप्रकर्षमनुभवन्ति ।समाजे नार्यस्त्रीणि रूपाणि दृश्यन्ते –कन्यारूपम् ,पत्नीरूपम् ,मातृरूपञ्चेति ।परन्तु मानवेन सह सम्वन्धदृष्ट्बा नारीणां रूपाणि परिदृश्यन्ते ।तद्यथा –

नारी

ऋग्वेदे नारीश्ध्दस्य प्रयोगः न दृश्यते ,परन्तु यज्ञस्य अर्थे नार्यः इति प्रयोगः दृश्यते ।नारीशव्दः नृ अथवा नरश्ध्दात् उतपन्ना भवति ।नृ + अच +ङीन् = नारी ।नर् + ङीषु = नारी इति व्युतपत्त्या अस्य शव्दस्य गठनम् ।

पतञ्जलिना व्युत्पत्तिद्वयमेव स्बीकृयते –"नृर्धर्म्यान्नारी ,नरस्यापि नारी '।सायणाचार्येण तैत्तिरीयारण्यके इत्थमुक्तम् –"नृणां महाबीरार्थीनाम् उपकारीत्वात् नारिः।न अरिः नारिः'।

मेना

अयं बैदिकशव्दो भबति ।ऋग्वेदे मेना श्ब्दः नारीशब्दस्य वाचको भबति –"मानयन्ति एनाः '(पुरुषाः)अर्थात् पुरुषाः अस्यां प्रीतिं कुर्बन्ति ।अतः स्त्रीणां मेना इति कथनं समीचीनमिति दिक् ।पुराणानुसारं हिमालयस्य पत्नी तथा पार्ब्यत्याः मातुर्नाम मेना आसीत् ।

स्त्री

नारीनामधिका प्रचलिता श्ब्दः स्त्री भबति ।स्त्रीशब्दः स्त्यै धातुना निष्पन्नं भबति ।यास्कमतानुसारेण स्त्यै श्ब्दस्य अर्थः लज्जा भबति ।उक्तञ्च तेन –"स्त्रियः स्तायते अपत्यवय कर्मणः ।परन्तु पाणिनीयधातुपाठे स्त्यै श्ब्दस्यार्थः –"स्त्यै श्ब्दसंधातयोः 'इति प्राप्यते ।ऋग्वेदस्योपरि टिप्पणी लेखनसमये यास्केन एवमुक्तम् –स्त्रियः एव एताः श्ब्दस्पर्शरूपरसगन्धहारिण्यः इति ।

योषा, योषित् ,योषिका

श्ब्दोऽयं योषायाः तुल्याः भवति यस्यार्थः नारी इति ।यः जुष्यते उपभुज्यते इति जुषु धातोः –जुषु +घञ् +टाप् प्रत्यये कृते =जोषा निष्पन्ना भवति ।

वामा

स्त्री वामा भवति –"वयति सौन्दर्यम् '।या वमति सौन्दर्यं सा स्त्री वामा भवति प्रतिकूलवाक्यं कथयतीति हेतोः ।आम् इति स्थले प्रायशः नेति कथयति ।वामा दुर्गा देव्यामपि नाम अस्ति ।अस्या इयं व्युत्पत्तिः वम् +अन् +टाप् =वामा ।

अवला

अस्य श्ब्दस्य रचना नारीणां शारीरिकशक्तेः दृष्ट्या क्रियते ।स्त्रीणां शक्तिः पुरुषानुरूपं न भवति ।अतः नास्ति बलं यस्याः सा नारी ।अत्र नञ् इत्यनेन अल्पत्वं सूच्यते यत् मेघदूते कालिदासेन वर्णितमस्ति – "तस्मिन्नद्रौ कतिचिदबलाविप्रयुक्तः स कामी " (उत्तरमेघः)।

सुन्दरी

स्त्री सुन्दरीति ।अस्यां दृष्टया पुरुषाणां हृदयं दलिताः ,चित्तं द्रविताश्च भवन्ति ।अस्याः व्युत्पत्तिः –सु + उन्द् +अर +ङीष् = सुन्दरी ।वस्तुतः सुन्दरीशब्दः ऋग्वेदस्य सुनरीश्ब्दस्य विकसितरूपं भवति ।ऋग्वेदे –"आधा योषेव सूनर्युषा याति प्रमुञ्चति'।सुनरीश्ब्दस्य अर्थः शोभाशालिनी सुन्दरी इत्युच्यते ।

प्रमदा

प्रेम्णा शृङ्गारभावपूर्णेन पुरुषाणाम् आसक्तिं प्रवर्धयति या सा प्रमदा इत्युच्यते ।

प्र+मद् +अच् +टाप् =प्रमदा ।प्रमदः हर्षोऽपि भवति ।अतः हर्षिता पुलकिता स्वभावा हेतोऽपि स्त्रीं प्रमदा इत्युच्यते ।

तरुणी

युवतीं नारीं तरुणीत्युच्यते ।"वृद्धस्य तरुणी विषम् इत्यस्ति प्रवादः '।नृ +उनन +ङीष् धातोः निष्पन्नो भवति अयं श्ब्दः ।यस्यार्थः युवती नारी इति ।

युवती

युवन् श्ब्दात् निष्पन्नस्य श्ब्दस्यार्थ तरुणी स्त्री अर्थात् यौवनप्राप्ता स्त्री युवती भवतीति ।युवन् + ति +ङीप् वा = युवतिः ।युनस्तिः इत्यस्मिन् पाणिनीय सूत्रे युवन् इत्यस्य न-कारस्य स्थाने तकारे कृते युवति इति ।युवतीतु युधातुतः शतृप्रत्यये युवत् इति जाते ङीप् ङीष् वा संयोगे भवति ।

मोहिनी

मनोहारिणि स्त्री मोहिनी भवति ।भगवान् विष्णुः मोहिनीरूपं धृत्वा देवासुरयोर्मध्ये अमृतवन्टनं कृतवान् ।मुह् धातुतः अस्य पदस्य गठनं भवति ।एवमस्य निर्वचनम् –मुह् +णिच् +णिनि + ङीप् = मोहिनी ।

ललना

अयं शब्दः स्त्रिया एकस्य मानसिकभावस्य द्योतको भवति ।यस्यां नार्य्यां मध्ये लालसा ,इच्छा प्रबलतमरूपेण तिष्ठति सा ललना इत्युच्यते ।लल्+ णिच् + ल्युट् + टाप् = ललना इत्यस्य व्युत्पत्तिः ।

मानिनी

मान् + णिनि + ङीप् इति मानिनि श्ब्दस्य व्युत्पत्तिः ।मानिनिश्ब्दस्य अर्थः स्बाभिमानम् तथा आत्मसम्मानं भवः ।नारी मानप्रिया भवति ।स्वीया सौन्दर्यगुणकार्यादिः प्रतिकूलालोचना अस्याः वाणसदृशावध्यति ।

महिला

मह् + इलय् + टाप् प्रत्यये कृते निष्पन्नोऽयं श्ब्दः ।महश्ब्दस्य अर्थ पूजा ।पूज्य इति हेतोः स्त्री महिला कथ्यते ।मह् श्ब्दस्यार्थ महानपि भवति ।

पुत्री

कन्यां पुत्री इत्युच्यते ।पुत्र श्ब्दस्य स्त्रीलिङ्गे रूपम् ।मन्वनुसारतः पुत्र पुम् नामकात् नरकात् पितरं त्राणं ददाति ।अत्र पुत्रं भवति ,पुत्रीं भवति ।पुत्र + ङीप् = पुत्री ,पुत्रक् +टाप् = पुत्रका ,पुत्री + कम् +टाप् =पुत्रिका ।

सुता

कन्यां सुताऽऽपि उच्यते ।सुधातोः क्तप्रत्यये सति सुता इति रूपं सिद्धं भवति ।अस्यार्थ उत्पादितः वा जन्म अलभत् ।सुता श्ब्दः सुत + टाप् प्रत्यये कृते निष्पन्नो भवति ।

बाला

प्रथमात् षोडशी वयसी युवती बाला इत्युच्यते ।बाला अषोडशा इयति ।बल् + ण तथा टाप्प्रत्यययोगे निष्पन्नो भवति ।अस्यार्थ अप्राप्तवयस्का तरुणी ।बाला वालिकापि भवति ।बाल् +कन् +टाप् +इत्वम् = वालिका इत्यस्य व्युत्पत्तिः ।

दारिका

पितुः ह्रदयभङ्गकारिणी इति हेतोः कन्यां दारिका इत्युच्यते ।द + णिच् + बुल् +दारक् + टाप् + इत्वम् =दारिका इत्यस्य व्युत्पत्तिः ।

दुहिता

कन्यां दुहितापि उच्यते ।दुहिता श्ब्दस्त्वत्यन्तप्राचीनो भवति ।दूरे सति सा पितुः हित पश्यं भवति इति दुहिता इत्युच्यते ।दुह् +तृच् +टाप् = दुहिता इति ।यास्क वदति दुहिता ,दुर्हिता ,दुरेहिता ।स हि यत्रैव दीयते सर्वत्र दुहित भवति अथवा दुरेहित दुहिता ।

मध्यमिका

विवाहयोग्या वयस्का कन्यां मध्यमिका ,मध्यमा वेत्युच्यते ।मध्य +म +कन् +टाप् +इत्वम् = मध्यमिका ।

रमणा ,रमणी

पुरुषः पत्नीं रमणं करोति ,अतः नारी रमणा वा रमणी इत्युच्यते ।रमणीं विना संसारस्य सम्पूर्णसुखम् अधुरा भवति इति विदूषाम् अभिप्रायः ।"भोगः को रमणीं विना इत्यस्ति काचित् कथा '।रमण + टाप् = रमणा ,रमण +ङीप् =रमणी ।

पत्नी

पति + ङीष् =पत्नी ।पत्नी सखी ,सहचरी ,सहचारिणी तथा सहधर्मिणी इति श्ब्देन व्यवह्रयते ।पत्नी सुख्दुःखस्य साथी भवतीति कृत्वा सा सखी इत्युच्यते ।जीवने पुरुषस्य धर्म-कर्म् इत्यदिनां समभगिनीति हेतोः नारी सहधर्मिणी च भवति इति ।

गृहिणी

गृहस्य सम्पूर्णकार्यं सहोत्स्साहेन सुन्दररूपेण सम्पूरयति ।अतः नारी गृहिणी इति पदवाच्या ।गृह + इनि +ङीप् = गृहिणी ।कथितास्ति विना गृहिणीं गृहः प्रेतगृहो भवति ।अतः पञ्चतन्त्रे साधुक्तम् –

न गृहं गृहमित्याहुर्गृहिणी गृहमुच्यते ।
गृहं तु गृहिणीहीनं कान्तारादतिरिच्यते ॥

अर्थात् गृहं तु गृहिणि श्बदात् निष्पद्यते ।विना गृहिणीं गृह कान्तिरहितो भवति ।

प्रियतमा ,प्रेयसी

पत्नी पुरुषस्य अत्यन्तप्रियो भवति ।अतः सा अस्य प्रियतमा प्रेयसीवेत्युच्यते ।प्रिय + तमप् + टाप् = प्रियतमा ।

वधूः ,वधूका ,वधूरी

स्त्री पितुः गृहतः सम्मानम् ,सम्पत्तादि च पतिगृहपर्यन्तं वहन् करोति ,अतः नारीं वधू इत्युच्यते ।
"उदूचजे पितृगृहात् इति वधू "।वधूश्बदः पत्नी ,पुत्रवधू ,युवती –स्त्री चेति शब्देन व्यवह्रयते ।वह + उधुक् = वधू इति च व्युत्पत्तिः ।

माता

नारीं मातारूपेण सर्वदा पूजनीया ।ऋग्वेदे मात् शब्दः अन्तरिक्षः ,नदी ,जलम् ,पृथ्वी इत्याद्यर्थे व्यवह्रतो भवति ।वैयाकरणः मातृश्बदः मान् +तृच् प्रत्ययेन निष्पद्यते ।"मान् पूजायां तृच् न लोपः '।मान् इत्यस्यार्थः आदरः ।अतः मातृशब्दस्यार्थः आदरणीया ।सृष्टेरादिकालतः अद्यावधि मानवः यां सततं श्रद्धाप्रदानं करोति ,यस्याः अजराक्षयस्नेहः अनुगृह्णाति सा न केवलं जन्मदात्री अपि तु –"जननी जन्मभुमिश्च स्वर्गादपि गरीयसी '।सा गरीयसी सर्वेभ्यो वस्तुभ्यः ।

जननी

नार्य्यः प्रजननक्षमता अस्ति इति हेतोः सा जननी पदवाच्या ।जन् + णिच् +अनि + ङीप् = जननी ।या जन्मदात्री भवति सा जननी इति ।

जनयित्री ,जनित्री

पुत्रस्य जन्मदात्री मातरं जनयित्री वा जनित्री इत्युच्यते ।जनयितृ +ङीप् = जनयित्री , जनितृ + ङीप् = जनित्री इत्यस्य व्युत्पत्तिः ।

जनिः ,जनिका ,जनी

एते श्बदाः स्त्री ,माता ,पत्नी ,पुत्री ,पुत्रवधूना च सह प्रयुक्ताः भवन्ति ।जन् +इन्(ङीप्) =जनिन्(जनी)। जनि + कन् + टाप् =जनिका ।एतेः सर्वे श्बदाः नारीणां सम्मानवोधकाः भवन्ति ।

गणिका

गुणानुरक्ता गणिका ।गण् + ठन् + टाप् = गणिका इति अस्ति अस्य शब्दस्य व्युत्पत्तिः ।

मुक्ता

उन्मुक्तं जीवनयापनं करणहेतोः वेश्यां मुक्ता इत्युच्यते ।मुच् + क्त + टाप् = मुक्ता इति व्युत्पत्तिः ।

लज्जा

व्यभिचारिणी स्त्री ,लज्जितः कल्ङ्कितश्च जीवनव्यतीतं करोति इति हेतोः लज्जा इत्यनेन अभिधीयते ।लज्ज +टाप् =लज्जा इति शब्दस्यास्य व्युत्पत्तिः ।

विलासिनी

स्वेच्छाचारिणी वेश्यां विलासिनी इत्युच्यते ।विलासिन् इति श्दात्परं ङीप् प्रत्यये विलासिनी इति श्दस्य गठनं भवति ।

वेश्या

नष्टा स्त्री ,या स्वीया परिधानाधारपरजीवनयापनं करोति एवञ्च यस्याः प्रवेश्द्वारं सर्वेषां मनुष्याणां कृते उन्मुक्तो भवति सा वेश्या इति ।तदुच्यते –"वेशेन पण्ययोगेन जीवति 'इति अस्य व्युत्पत्तिस्तु वेश् + यत् +टाप् = वेश्या इति ।

एवं भारतीयसंस्कृतौ वयसानुसारं ,सौन्दर्यानुरूपं कार्यानुरूपञ्च स्त्रीणां वहुरूपाणि कल्पितानि ।

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CASH TO A CASHLESS SOCIETY

Dr. Sabina Ronica Bodra
Associate Professor
Christ Church Degree College Kanpur

Abstract

The current Indian society is known for its technological advancements. In lieu of the digitalization that has perpetuated every sphere of the society, India is also transitioning from a society that relied heavily on the use of tangible cash to digital cash. This has invariably created a range of opportunities for consumers to enter into the digital payment space. The cashless economy of the Indian scenario involves various factors for its adoption such as reach, availability, and awareness. This study considers factors such as demonetization responsible for adopting new digital payment technologies in India's different regions across various consumers.

Keywords – Cashless, Digital Money, Digitalization, E-Banking, Demonetization

Introduction

Over the past several decades, financial markets and institutions underwent a radical transformation and a sudden expansion, induced by general trends in deregulation, liberalization, globalization, as well as computer technology advances. International capital flows intensified; markets have developed new and sophisticated instruments, with the drastic improvement in the speed of financial trans-actions execution significantly lowering financial transaction costs (Fabris, 2018). The degree of cross-border financial interdependence has increased dramatically, and financial sector development exceeded that of the real economy by far, resulting in financial assets in developed countries being multiple times higher than their GDP. These trends have also led to a better allocation of capital, reduction of costs, and other numerous positive effects, but also to easier crisis spillover and changes in economic policy pursuit that relies more on discretion than rules (Prašćević, 2013).

“CASH” a nuanced term, has been etched in every Indian citizen’s mind from ancient times, and still, it is in demand. In today’s world, every Indian customer must have the option to pay electronically, using mobile devices, laptops, and other devices, and it is essential to boost the country’s country as a cashless economy through technology. The contribution of cash in the context of the

Indian economy has played a vital role in Indian history in all different sectors, whether it is agriculture and allied industries, biotechnology, automobiles, cement, consumer durables, e-commerce, transportation, business, banking, etc. But it is time to equip all these sectors with new, modern technologies to introduce the word "cashless" into the picture, which makes commerce faster, easier, and more efficient.

"Cashless Economy" refers to the physical stream of national exchange being replaced with digital platforms such as online transactions, the introduction of plastic cards, Internet banking, etc. (Praseetha et al., 2019). With this change, the currency is not restricted from use, whether it means slowing down the usage of cash currency by utilizing the appropriate procedure. The role of digital transactions becomes more prominent; hence it provides an alternative solution to the population from different perspectives (Alibekova et al., 2019). There is a requirement to move out of the cash and enter the new cashless world. For that, there are various initiatives launched by the Indian government, i.e., Digital India, so that the use of cash can be reduced and focus on digital transactions could be increased and entertained into the minds of the people. Understanding the scope and importance of Cashless India, it is the Indian government's top priority to address the significant issues of cybercrime and online fraud so that people are aware of their effects. Banks also play a crucial role because they will follow the transactions, as they are responsible for all the operations, whether cash or cashless transactions.

There is a new level of change in the latest stage, which we see in making and receiving payments. There has been a constant change in daily infrastructural activities; hence, we can see a policy change. Everyone needs to understand that India's future is a "cashless economy" for the welfare of society (Athique, 2019). A decrease in the level of cash flow, or its disappearance, or replaced by plastic notes can be brought or introduced in the future by the government that is trying to bring awareness among the citizens. The primary response created for introducing a cashless economy was mainly after demonetization, which became popular.

The government is also well conscious that consumers are progressively using their smartphones to pay for goods and services, which is a step toward Digital India. For India's transformation, the consumers need to be equipped with digital knowledge, which is known to be the Indian government's principal element. The primary focus is on rural India. The technology needs to be assessed and implemented to move India from a cash to a cashless economy, as there is a lack of awareness among people. The majority of India's population is

engaged in agriculture, so there is a need to adopt new measures to move India forward there. Due to privacy and security concerns, people are scared to move from cash to a cashless economy as they find it risky.

Two types of online payment are introduced in India, namely, walled-based and UPI (Unified Payment Interface)-based media. As the government pushes its drive for a cashless economy, it backs UPI-based mobile payments apps. Banks are also liable to promote online payments such as Internet banking, mobile payments, etc. There is no need to go to the bank, the transactions are done from home very quickly and easily (Menon & Ramakrishnan, 2019). This paper will analyze the evolution of the banking system and its development to make India a cashless economy with future digital transaction trends. This study will evaluate the current status of the reach, availability, and disbursement of cashless transaction awareness.

Origins of a Cashless Society

There's been an increase in the number of payment facilities methods in the digital era because of the constant rise in technological infrastructure and policy changes. The Internet of Things is an essential function in our society to bring citizens together by adopting an open innovation approach. This research has investigated those cities that have become Smart Cities with the help of IoT. In the long run, becoming independent in information technology (IT) and artificial intelligence (AI), can be achieved with the government's help, as its role is a crucial part of the future. Moreover, the study reviews open innovation and IoT literature. Hence, for development, there should be a close relationship between relational and trust-building capabilities, learning capabilities, and open innovation capabilities (Scuotto et al., 2016).

E-banking and e-payment opened the doors for cashless transactions earlier, but it was not well known. The online modes of payments made it possible to keep an eye on the people who have black money, but at that time, there was a lack of awareness, and people were not well versed with the technology, which was not successful from the government's position. This research analyzes India's cashless transaction system's growth pattern from the year 2006. With the full advantage of technology, there is a way for the government to introduce a new system into the market for modernization and quick payments remittances. The e-banking system also ensures the optimal use of banking services for better availability of funds for banks and customers. The author mentioned that communications networks would be responsible for the new modes of payment (Maurya, 2019).

The rationale for establishing a digital revolution has steadily converted more and more analog information into digital channels. The digital revolution is benefitting society by allowing easy interoperation, conditional on common standards (Pearson, 2010). All markets have been filled with digital standards with telephones, music players, and cameras. There is also a need to control terrorism funding so that the money flow can help find black money, hoard unaccounted assets, etc. In conclusion, there is rapid growth in the advancement of technology in every country's payment system, which will become fully digital. Wireless is considered to be the core factor in the current phase of digital convergence. It is not only about mobile phone features, but the applications are moving to the cloud, which makes it possible to work digitally (Teece, 2018).

Information and communication technologies (ICT) have created a tremendous impact on the growth of the world economy (Fang et al., 2016). There has been a rapid expansion in the sector, changing human lives and making it very easy and suitable. The Internet made it possible and sparked the IT sector with a lot of innovations that have spread all around the world. "Internet banking" (IB) was the term introduced, which led to a reduction in the use of cash, hence making transactions online (Nguyen, 2020) Confirmatory Factor Analysis, Structure equation model. The study uses the Technology Acceptance Model (TAM), a theory that models how users accept and use technology. In conclusion, the primary focus of this paper is on the adoption of Internet banking without reverting to descriptive studies (Hanafizadeh et al., 2014).

Why cashlessness was imperative

According to the Indian government, the cashless policy creates more empowerment in the industry, which will lead to an increase in employment and a reduction in cash-related fraud. Now, more cash will get saved in the bank accounts of customers. There will be less hard money in their hands, which will lead them to divulge their exact income so that income tax fraud can reduce significantly. It will also reduce fraud toward cash transactions and lead to foreign investors' participation in the country as this mode of payment is secure (Grimes, 2003). When this step was introduced in other countries, they were the right steps going in the right direction. The assumption was that it pushed the modernization of the new payment system. An increase in the number of banks leads to reduced transaction costs and a reduction in the high security of carrying cash along. This bank helps make a more manageable platform for interaction with consumers to know about the industry. Financial risk is also an

essential point in pushing the digital channel to improve the idea of a cashless economy. Indians have used electronic modes of payment for many years; however, the retail sector still relies predominantly on cash transactions. They find it a more secure and convenient way of physical operation in the retail market (Chundu Venkata Rao, 2014).

The constant innovation in the banking systems, products, and services helps it move toward a more coherent environment. The part highlighted in this paper is MBPS (Mobile Banking & Payment System), which is directly proportional to digitalization. The authors tried to keep the analysis based on historical and contemporary literature by highlighting essential gaps and discussing the challenges and opportunities during e-banking implementation (Devlin, 1995). The study proposes a new mobile banking system, namely, MBPS, a multitasking smartphone software that allows various banking and payment transactions in a single click with artificial intelligence. Similarly, it also determines different implications and limitations that are making future steps difficult. The research is entirely theoretical; hence, no viable hypothesis has been formulated. The objective is to conceptualize and propose MBPS through various digital banking channels and enter into an aggressive digital market full of innovation. In conclusion, MBPS will create tremendous growth and potential that we can predict, which is not too into the future, when mobile communication will outperform all digital channels and products (Shaikh et al., 2017).

Impact of Demonetization on Cashless India

There is a need to investigate different reasons for the lack of penetration of digital transactions in India and find the available attributes that need alteration to fill the Indian economy gap. The objective is to discover how the journey will continue on a successful path and get deeper insights. The focus is on the people behind the acceptance and non-acceptance of digital modes of payments, so a comprehensive examination of the various reasons is undertaken (Gupta et al., 2012). The trend toward non-cash transactions such as e-wallets and other modes of online payments has a significant impact on the Indian economy. Indeed, demonetization has played a substantial role in introducing online payments, and day by day, there is an influence on the growth rates in payment volumes. There are various challenges faced to implement digital transactions in India and how they can be overcome. It has been seen that there is progress in digitalization in the current scenario of the Indian economy. The focus is primarily on the rural areas as there are people who need to acquire new

facilities to move further and contribute toward the Indian economy (Kumar & Puttanna, 2018).

The introduction of the word "cashless economy" happened after the demonetization of 500- and 1000-rupee notes in India in November 2016. A quick review was carried out from media reports on the history of demonetization in India compared with other emerging countries. They recorded that around 80% of the money transactions are based on physical flow, which opens the doors for problems like corruption, black money, and terrorism funding. These are cashless problems, which means minimal use of cash and the rest of operations are through different electronic modes of transactions (Adil & Hatekar, 2020).

The dream of a cashless India is embraced by all people. There is both perspective, i.e., benefits and challenges toward implementing it, as in both cases, India might face difficulties. The rationale for establishing a cashless economy started after India's demonetization, in terms of origin and impact over the following year after November 2016. There is proper involvement required from every individual to keep the desired objectives included in the plan. After that initiative, tax payment collection increased as there was no way to escape from it. The whole thing was focusing on promoting online modes of payments for the Indian economy's successful flow. The process has started and there will be many more opportunities to achieve Digital India's goal (Khurana, 2017).
There would be a significant impact on society in implementing the steps toward India's economic growth. There is a need to focus on the effects that would make India have a high market value. It shows there will be both positive and negative impacts in moving from a cash to a cashless economy (Yucha et al., 2020).

There is a need to change the financial system in today's world, where the main focus is on Digital India. In recent times, technology has been a great enabler in the financial industry in pulling out masses from the bottom of the pyramid. Moving further with the advent of modern technologies like AI, Blockchain, Internet banking, and smartphones helped the whole financial ecosystem (Carlsson, 2004). It paved the way for a successful banking industry, not only in India but globally. The new term coined by industry experts is "Fintech." The word itself represents the amalgamation of two words – finance and technology. Every financial company viewed it as an excellent opportunity to derive all the positive outcomes. Internet availability and data facility became a facilitator for fintech, whereas, in the Indian context, Digital India, e-governance, and

demonetization pushed for the adoption of fintech solutions to improve the Indian Economy in the context of Digital India. India has witnessed a large scale of technology-based tools supported by rapid growth in mobile and Internet users in urban and rural areas (Hernández-Muñoz et al., 2011). For possible financial inclusion, literacy and credit counseling can convince the masses of the usefulness of financial services, which will have a long-lasting impact on people's lives in pulling people out of extreme poverty (Liao et al., 2019).

Moving toward digitalization and a cashless economy from cash also needs an examination of the current IT infrastructure and AI for security reasons and looks at frauds in digital transactions. The initial step in moving from a traditional to a modern economy is for banks to have a reliable and smart mechanism to fight cybercrime. We need to accept a stable banking system for a new transformation in the banking sector; it is necessary to control fraud to introduce digital transactions. So, for the betterment of the Indian economy, anti-fraud regulations should police the system. This focus is on moving into Digital India through different platforms, so there is a need to ensure addressing crime security risks by introducing Artificial Intelligence into the system (Attigeri et al., 2018).

Conclusion

It is concluded from the paper that the recent trends in technology and the supportive Indian government are driving India toward a cashless economy. In the past years after demonetization, mobile payment services' popularity has significantly increased. Two types of amenities have been trending over the years. These are wallet-based and UPI- based platforms. The online pattern is generally stronger in metro cities, but the Indian government is focusing on extending rural implementation to the urban environment. Modi's government focus is on greater use of technology and consequent reduction in cash usage, which will lead to a decrease in corruption. The new system will not only reduce the flow of 'black money but will also be efficient for tracking taxable entries over time. The electronic wallet stores money in digital format for immediate transactions, while UPI makes use of interbank connections in which payment gets directly debited from the account of the consumer (Hanafizadeh et al., 2014).

The objective was to consider and compare the consumer perception of moving from cash to a cashless economy; the present study provided an understanding of customer perception and satisfaction about 'Digital India'. For the successful

implementation of the survey, ANOVA is used to support the findings. There was no significant difference between the respondents based on gender, age group, educational qualification, profession, marital status, and annual income. The respondents' age group, educational qualification, and marital status displayed signification differences. It is an indication that the adoption of a cashless economy is influenced by the consumer's age group, educational qualification, and marital status. There is a need to execute plans accordingly, which should not trouble the citizens. For building a new structure, there are many opportunities and challenges, which need to be first tackled. Plans should focus on the opportunities, which the citizens should be able to grasp in less time. The citizens need to adopt the digital payment mode to know the system's benefits before implementing it.

The current situation explains why India is undergoing modernization in e-payment services, which are growing with unprecedented momentum. In India, every business, even street vendors, or any citizen, whether urban or rural, has started accepting e-payments, encouraging people to enjoy the advantages and benefits to effectuate transactions cashless way faster than earlier. Compared to past years there is significant growth in the number of smartphone users; Internet penetration has increased very much in every area, which increasingly leads to the adoption of digital payment. Much development can be seen day-by-day toward new infrastructure and technology, bringing India to a new reality (May & Hearn, 2005). However, there are also some other factors, which cannot be ignored. Many Indian citizens are still not aware of the meaning of a cashless economy. The government has also faced various public criticism in the past following new initiatives, such as GST and demonetization. There are both opportunities and challenges in bringing India to a cashless society, but it is very likely all Indians are looking to the future. A great deal of innovation will be needed in every field. To achieve this there is a need to strengthen collaboration between consumers and the Indian government so that IT and AI can be more readily introduced. The Indian government should first take steps to educate citizens on the new economy before attempting to more widely implement it (Goel et al., 2019).

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