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VOLUME 21 **MARCH-2021**

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(College affiliated to University of Madras and Re-accredited at A++ grade by NAAC)

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FROM THE EDITOR'S DESK

M.O.P Vaishnav College for Women encourages Research and motivates Researchers. Syndicate Journal of Management is a peer- reviewed online journal which publishes content in areas of Humanities and Social Sciences. Customer Satisfaction using Online Store Portals for grocery shopping during COVID-19 in Chennai, the Brand Awareness among customers on Automobile Industry in Chennai, Teacher's Role in Society over the ages and in the years ahead, Outcome based Education and Online brand experience and its impact on customer engagement with special reference to baby products are some of the areas explored in this edition.

Dr. Lalitha Balakrishnan
Editor-in-Chief and Principal
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Chennai

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ANALYSIS OF CUSTOMER SATISFACTION REGARDING ONLINE STORE PORTALS FOR GROCERY SHOPPING DURING COVID-19 IN CHENNAI

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Abstract

During the fear of COVID-19 spread, people are finding it extremely unsafe to move out of their homes unnecessarily and they do not have a normal, secure life. Many employees are working from home, while students are attending their classes online from their homes. Except for the people employed in essential services, movement of people has not been entertained in public places during this lockdown period. Even in companies and workplaces, staff practise safe distancing work norms. Many people buy their essentials and day to day groceries from online portals and close by kirana shops. This paper attempts to study the customer satisfaction regarding the effectiveness of online portals in supplying groceries & essentials at the doorsteps of customers during this crucial period. The period of survey was conducted during the COVID times during the period extending from October 2020 to December 2020. Many online giants who were dealing with different types of products hitherto, have presently jumped into the fray of supplying groceries online. This helps to have sustainable revenues keeping their businesses alive and ticking during these unparalleled tough times.

Keywords: Groceries, Customers, Satisfaction, COVID-19, Online Portals

I. INTRODUCTION

Today, consumers can purchase almost any product using the Internet. Online nutritional and grocery shopping is becoming increasingly popular and helpful during this COVID (Pandemic) times. Food stuff and Provisions / groceries is the fundamental daily want of any household. Online grocery business is in an up-coming stage in India. This kind of model has gained fame in tier one cities like Delhi and Mumbai, but still it has a long way to go. As of now, people in India are getting a grip of this kind of online grocery shopping model. People in the country used to prefer buying items like groceries, fruits and vegetables by making a physical comparison of price and quality. This type of tradition has been existing in the nation and it is very challenging to popularize this kind of model in Indian markets. But on the other side, other e- commerce businesses are becoming more attractive in the Indian markets and e-commerce grocery industry is in its introductory phase. So, this presents a great opportunity for any firm to enter the e-grocery space. Online grocery portals operate 24 hours a day and seven days a week. Unlike the traditional shopping environment, consumers can take the pleasure of window-shopping on the internet without the stress to purchase them online. Another important factor is the stress-free experience of shopping online. Consumers do not need to go through the several processes that are obvious in physical shopping, such as dressing up, travelling, parking the car, waiting and carrying the

shopping bags etc. Time saving and convenience are the biggest points of advantage in online shopping compared to traditional modes of shopping.

II. REVIEW OF LITERATURE

Kavitha Rajagopalan (2017) revealed that most of the respondents preferred Big basket as their option of shopping portal and buying personal care products among the various products available was the most preferred product choice. The study stated that online grocery industry is one of the rising industries in India. It was also found that the customers get into the internet more frequently and tend to buy things online. They always had favourite shops and brands in the online arena which gives them the most best customer service and satisfaction among other brands. The most important motive for purchasing groceries online was saving of time & effort and the absence of time restrictions in shopping. They liked better quality rather than quantity of product in case of fruits and vegetables and other perishables. Belief system of a customer while buying groceries online and in physical market were totally different.

Mariam Saleem, Marium Mateen Khan, Mohammad Ekhlaque Ahmed, Sanober Ali Neha Shah and Saad Rafiq Surti (2018) concluded that positive attitudes have a strong positive influence on intentions within the context of online grocery shopping. Current buyer behaviour is favourable with the presence of positive attitudes in online grocery shopping and vice versa. This is explained by the fact that, if a consumer possesses positive perceived behavioural control, the likelihood of going straight into action is higher. An influential factor found in connection to perceived behavioural control within online grocery shopping was the family of the customers.

Harjinder Kaur, Rakesh K. Shukla (2017) demonstrated that family income and age factor were the most significant factors amongst the demographic variables with regard to the online grocery purchases. By understanding the behaviour dimensions related to education level and number of working members in the family, online marketers were able to develop positive tendency amongst shoppers and make them go online for grocery shopping. It can be said that, most of the respondents agreed that online shopping can be done at any time because there is no limit in browsing the internet. Since most of the respondents were from working class, they wanted their order to be delivered at their convenient time and showed readiness to pay the extra delivery charges.

Himanshu Budhiraja, Kanav Mittal (2016) found that the online grocery shopping model was more popular amongst the working women followed by men. The study further revealed that the major reason for purchasing groceries online was saving of time and effort. On an average, customers were satisfied with the quality of the products received by them and the sellers were providing customers with the option of replacement in online shopping environment. The study also stated that the expectation of a customer while buying groceries online and in physical market is totally different. The problem that lay in this model was the delay in the scheduled delivery time promised and non-availability of some products due to certain unavoidable reasons.

Chandini A. V. and Nagendra (2018) focused on the consumers' approach towards online grocery shopping. The factors considered for the study were convenience, website design, time saving, security, return policy and customer support. Further, the study revealed that there was no

significant impact of return policy on the consumer attitude towards online grocery shopping. There was also no positive impact of website design on consumers who were shopping for groceries online. The study concluded that, it is the females, under the age category of 39-45 years, undergraduates and employed professionals were shopping for groceries online in majority compared to others.

III. STATEMENT OF THE PROBLEM

Before COVID-19 could affect the world, people were happily moving around and doing things that they desired. With restrictions placed fully & partially by the Government on the movement of people, customers wanted to avoid unwanted visits to shops & other locations. Due to this COVID-19, many customers are purchasing groceries online and that is slowly becoming a new normal. So, this study would be relevant today since with the study results, we can predict the future of customer purchase pattern of groceries. This paper deals with an analysis of customer satisfaction level regarding online grocery shopping from web portals delivering in Chennai locality. Chennai being a tech savvy and fast-growing city, it would be apt to consider this city for the research study. This study findings may help in predicting the satisfaction levels of customers purchasing groceries online in other cities of India.

IV. OBJECTIVES OF THE STUDY

1. To study the Socio-economic status of the customers.
2. To find out the online portal most sought after by the customers.
3. To analyse the factors which influence the customers in selecting online grocery shopping web portals.
4. To measure the overall Satisfaction level towards Online Grocery Shopping.

V. RESEARCH METHODOLOGY

Population of the study: Customers shopping online in Chennai city
Sample Collection Method: Sample survey method - Convenient sampling method was adopted.
Technique of Data Collection: Google Forms Questionnaire technique.

The questionnaire had been framed with 16 questions consisting of clear and meaningful variables. The questions with Likert scale values ranging from 1 - Strongly Disagree to 5 - Strongly Agree were also designed. The questions were related to the choice of online portals for grocery shopping, factors influencing the customers in selection of online grocery shopping web portals and the overall satisfaction level towards online grocery shopping portals.

The demographic profile of the respondents was collected for the study purpose during the during the period extending from October 2020 to December 2020. The findings are tabulated below for further understanding & clarity.

Sample Size: 102 questionnaires were sent to 120 customers. However, only 102 respondents from Chennai city filled them and the same were used for statistical analysis and interpretation.
Types of Data: Both Primary and Secondary data were used.
Statistical Package: SPSS package has been used for Data Analysis.

Statistical Tools Applied:

- Frequency table
- Percentage analysis
- Friedman test
- Correlation analysis
- Bar Chart

VI. DATA ANALYSIS AND INTERPRETATION

Table 1 - Demographic Analysis Table of the Respondents

Frequency Table

GENDER	Frequency	Percent
Female	42	41.2
Male	60	58.8
Total	102	100.0

AGE (IN YEARS)	Frequency	Percent
Below 30	60	58.8
30-40	24	23.5
40-50	18	17.6
Total	102	100.0

OCCUPATION	Frequency	Percent
Business	12	11.8
Housewife	12	11.8
Professional	30	29.4
Salaried Person	48	47.1
Total	102	100.0

EDUCATION QUALIFICATION	Frequency	Percent
Under Graduate	42	41.2
Postgraduate	30	29.4
Professional Degree	30	29.4
Total	102	100.0

FAMILY SIZE (No of total members)	Frequency	Percent
below 4	38	37.3
4-6	46	45.1
6-8	18	17.6
Total	102	100.0

Family total Income (per month in Rs)	Frequency	Percent
Below Rs. 40000	24	23.5
Rs. 40000-Rs. 80000	48	47.1
Above Rs.120000	30	29.4
Total	102	100.0

Source: Primary Data

INFERENCE:
As per the study in these COVID times, 58.8% of the respondents were males and 41.2% were female customers belonging to the majority age group of below 30 years. The highest number of respondents are having a UG degree and the respondents are mostly Salaried persons with a majority of them earning a monthly income of Rs. 40000 – Rs. 80000. The family size of the majority of the respondents was comprising of 4 to 6 people.

Table - 2 showing Friedman Test for significant difference between Mean Ranks regarding the Online portals used for Grocery shopping by customers

Online portals used for Grocery shopping by customers	Mean Rank	Rank Order
Amazon Pantry	4.26	1
Flipkart Grocery	3.09	2
Big Basket	2.91	3
Jio Mart	2.56	4
Grofers	2.18	5

Test Statistics[a]

N	102
Chi-Square	118.598
df	4
Asymp. Sig.	.000

a. Friedman Test

INFERENCE:

Since P value is less than 0.05, the null hypothesis is rejected at 5 percent level of significance. There is a statistically significant difference between mean ranks regarding the choice of online portals used for Grocery shopping where $\chi2(2) = 118.598$ and $p = 0.000$.

Based on mean ranks regarding the choice of online portals used for Grocery shopping, Amazon Pantry (4.26) is ranked first, followed by Flipkart Grocery (3.09) in the 2nd place, Big Basket (2.91) in the 3rd place, Jiomart (2.56) in the 4thplace and Grofers (2.18) in the last place.

Table - 3 showing Friedman Test for significant difference between Mean Ranks regarding the factors which influence the customers in selection of online grocery shopping web portals

Factors influencing the customers in selection of Online Grocery Shopping Web Portals	Mean Rank	Rank Order
Convenience	4.00	1
Safety	3.79	2
Discounts	3.71	3
High Quality	3.47	4
Door Delivery	3.41	5
Low Price	2.62	6

Test Statistics[a]

N	102
Chi-Square	38.223
Df	5
Asymp. Sig.	.000

a. Friedman Test

INFERENCE:
Since P value is less than 0.05, the null hypothesis is rejected at 5 percent level of significance. There is a statistically significant difference between mean ranks regarding the factors which influence the customers in selection of online grocery shopping web portals where $\chi2(2) = 38.223$ and $p = 0.000$.
Based on mean ranks regarding the factors which influence the customers in selection of online grocery shopping web portals**,** Convenience (4.0) is ranked first, followed by Safety (3.79) in the 2nd place, Discounts (3.71) in the 3rd place, High quality (3.47) in the 4th place, Door Delivery (3.41) in the 5th place and Low price (2.62) in the last place.

CORRELATION ANALYSIS

H_0: Null Hypothesis: There is no significant relationship between Best Product Choices that are available in online portals and the Overall Satisfaction Level towards Online Grocery Shopping Portals.

H1: Alternative Hypothesis: There is a significant relationship between Best Product Choices that are available in online portals and the Overall Satisfaction Level towards Online Grocery Shopping Portals.

Table 4 - Correlation between Best Product Choices are available in online portals and Overall Satisfaction Level towards Online Grocery Shopping Portals

		Best Product Choices are available in online portals	Overall Satisfaction Level towards Online Grocery Shopping Portals
Best Product Choices are available in online portals	Pearson Correlation	1	.704**
	Sig. (2-tailed)		.000
	N	102	102
Overall Satisfaction Level towards Online Grocery Shopping Portals	Pearson Correlation	.704**	1
	Sig. (2-tailed)	.000	
	N	102	102

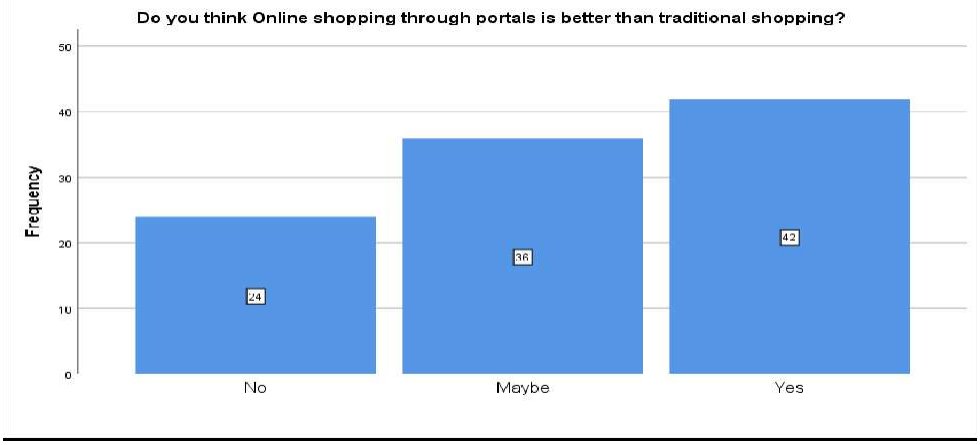
** Correlation is significant at the 0.01 level (2-tailed).

Source: Primary Data

INFERENCE:

Since the table shows a Pearson correlation co-efficient value of 0.704, there is a positive correlation relationship between Best Product Choices that are available in online portals and the Overall Satisfaction Level towards Online Grocery Shopping Portals.

Table 5–Bar Chart showing the frequency distribution regarding the customer opinion as to whether online shopping is better than traditional shopping



Source: Primary Data

INFERENCE:

The above chart shows that the majority of 42 number of customers feel that online shopping is better than traditional shopping, while 36 are having a neutral "maybe" opinion and the remaining 24 say that online shopping is not better than traditional shopping out of the total of 102 respondents.

VII. FINDINGS

- Majority of the respondents (59%) are Male respondents.
- Majority of the respondents (58.8%) belong to the age group of below 30 years.
- Majority of the respondents (47.1%) are salaried people.
- The highest number of respondents (41.2%) are having an Under Graduate (UG) degree.
- Majority of the respondents (47.1%) are having family total monthly income of Rs. 40000 to Rs.80000.
- Majority of the respondents (45.1%) are having a family size comprising of 4 to 6 people.
- Based on mean ranks regarding the choice of online portals used for Grocery shopping, Amazon Pantry is the most preferred online portal.
- Based on mean ranks regarding thefactors which influence the customers in selection of online grocery shopping web portals**, C**onvenience is the most advantageous factor that is ranked first.
- There is a positive correlation relationship between Best Product Choices that are available in online portals and the Overall Satisfaction Level towards Online Grocery Shopping Portals.
- Majority of customers feel that online shopping is better than traditional shopping.

VIII. SUGGESTIONS

Convenience increases the level of customer satisfaction. Price of products could be made attractive & catchy, in order to influence the customers intending to make use of Online Grocery Shopping Portals. It is suggested that shopkeepers should provide various facilities such as, offers and discounts. They should also ensure about the safe delivery of products to the customers in these COVID times. The speeding up of delivery mechanisms & proper supply chain management would definitely draw the attention of more customers in future. This online model may overtake the turnover of traditional shop keepers in the years ahead and become the order of the future.

IX. CONCLUSION

The study concluded that most of the customers are more satisfied with online shopping portals which were supplying groceries and essentials at the doorsteps of the customers during this lockdown. Safety and hygiene were also a prime factor in the minds of the customers who purchased from online grocery web portals. Convenience is the key factor for the customers who shopped online than other factors.

X. LIMITATIONS OF THE STUDY & SCOPE FOR FURTHER RESEARCH

This study is limited to 102 respondents and conducted in Chennai city only. This study confines to the Online Store Portals for grocery shopping during COVID-19 in Chennai and the study does not cover any other City/Locations. Further, it is with respect to COVID-19 times and may or may not be suitable for other times. For accuracy and validity of results, any researcher may conduct future research in this direction comparing the pre and post COVID era and find out the impact using a larger sample size. In addition, the Customer Satisfaction regarding Online Store Portals for grocery shopping can be compared with Delhi, Mumbai, Kolkata, Bangalore, Hyderabad & Kochi to analyze the impact in other cities of India.

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THE BRAND AWARENESS AMONG CUSTOMERS ON AUTOMOBILEINDUSTRY IN CHENNAI, TAMIL NADU

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Abstract
Means of transport decides the sophistication of life in the modern world. Transport through road, especially through car is increasing trend in recent years. Car is preferred by economically upper middle- and high-class people. Awareness about the Brand name and its unique nature of the model decides the customer's preference. The user prefers the brand based on availability of showroom, adaptability to their needs and their road condition, services offered by the company and its consistency. The current research on "The Brand Awareness among Customers on Automobile Industry in Chennai, Tamil Nadu" has been studied about the influence of brand name in purchase, effective mode of awareness creation, and brand awareness vs. buying behaviour. Primary and secondary data used to assess the above said parameters. Socio-economic indicators of the respondents were collected through questionnaire method as primary data.

Key words: Brand awareness, automobile industry, customer satisfaction

I. INTRODUCTION
Maintaining brand awareness among customers is most important for the success of brand. Attention to how customers are responding to products packing displays and messages. Ways and means to advance the image you are demanding to catch across. Ask your customers for suggestion to sustain a consistent presence in the marketplace

II. LITERATURE REVIEW
Delgado-Ball ester, Elena Navarro, Angeles Sicilia (2012): From an integrated marketing communications perspective, this study aims to analyze what level of consistency among brand messages is more effective in terms of customer-based brand equity. In particular it aims to evaluate its impact on brand knowledge structure, and how brand familiarity moderates this influence. Results show that the effectiveness of consistency among messages depends on brand familiarity. For familiar brands moderately consistent messages improve their awareness (recall), enrich their network of associations, and generate more favorable responses andbrand attitudes. However, for unfamiliar brands, no significant differences are found between high and moderate levels of consistency, except for brandrecall,being higher when highly consistent messages are used.

Dong-JennYang ,Jyue-Yu Lo Sheng Wang (2012): Celebrity endorsement is one of the most popular promotions of marketing communication. The purpose of this study is to understand thetransfereffectivenessbetween celebrity and brand. Experiment 1 indicates that audiences perceive both images of a Celebrity and a brand as being consistent/ inconsistent, and the positive/negative transfer effect did not occur. Experiment 2 shows a positive endorser image can benefit a negative brand image and a positive brand image can weaken a negative endorser image. Experiment 3 shows that when the same celebrity endorsement changed from high to low, brand awareness has a positive transfer effect; conversely, when the samecelebrity endorsement changed from low to high, brand awareness has a negative transfer. The results show interesting transfer effects between celebrity and brand, and support most of the hypothesized relationships. These findings advance our understanding of the pervasive

influence of celebrity in today's society.

Ms. Roshni P Sawant (2012): In her article" Impact of advertising on brand awareness and consumer preference (with special reference to men's wear)" identified that if the consumers experience dissonance or discomforts owing to their purchase decision, then advertisement reduce this feeling of discomforts provided information on the product attributes and it was an impact of the advertisements of rival brands. The author suggested that the advertising is presented in an inspired and efficient manner it creates a perpetual notion on the consumers mind about brands and more consumer to be drawn into their field of influence and advertising in dubitable plays a momentous role in their pursuits.

III. RESEARCH DESIGN

PROBLEM STATEMENT: Brand awareness study is a continuous process in any company. This study envisages to understand how customer perceive the brand HYUNDAI? How to create brand awareness among the target audience? How brand perception linked with increase in revenue? To understand whether brand and brand perception increases the value of the company?

OBJECTIVE OF THE STUDY

The study has been conducted with the following objectives in mind:-

- To judge the awareness level of the prospect customer.
- To assess how they are aware about the product.
- To examine which promotional tool is effective to increase the awareness level among the people.
- To overview whether brand awareness influences the buying behaviour or not.

RESEARCH METHODOLOGY: The research design followed for this study is descriptive research for analysing the collected data and in-depth research analysis was framed for the purpose. Descriptive research includes service and fat findings enquiries of different kinds the major purpose of descriptive research is description of the state of affairs as it exist at present. The method of research utilized in descriptive research are survey methods through the questionnaire. Primary data is collected in the form of questionnaire do the questionnaire which consists of a number of questions printed in the definite order that these were collected through various sources such as friends' related to social media in person etc. The respondents need to answer on their own and their perception was recorded

DATA COLLECTION METHOD: Data collected from the questionnaire can be both qualitative and quantitative in nature. A research questionnaire is typically a mix of open ended questions and close ended questions. Questionnaire have an advantage compared to other research methodology that is they are very cheap and it does not require much efforts of surveyor compared to verbal or telephone surveys. For some demographic groups questionnaires may not be suitable. It made the respondents duty easy by providing many number of questions of multiple choice questions but the limitations is that sometimes the options may not satisfy the respondents choice.

Analysis and Interpretation of Data

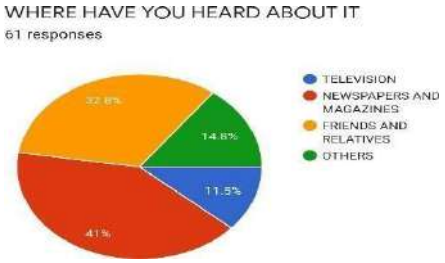
Graphical presentations;

Graphical representation refers to the use of intuitive charts to clearly visualize and simplify data sets. Data is ingested into graphical representation of data software and then represented

by a variety of symbols, viz., lines on a line chart, bars on a bar chart, or slices on a pie chart, from which users can gain greater insight than by numerical analysis alone. Various types ofgraphical presentation slide bar diagram line chart pie chart etc are used here.

AGE ANALYSIS: Sample collected all most of the one response is collected through the form of questionnaire. It is clearly understood that most of the person who filled this questionnaire is between 18 and 25 years i.e., out of 61 respondents 34 respondents are below 25 years of age.
GENDER ANALYSIS: Around 72% that is maximum number of respondents are male and around 28 % are female. Among the respondents that are 44 male and 17 female.

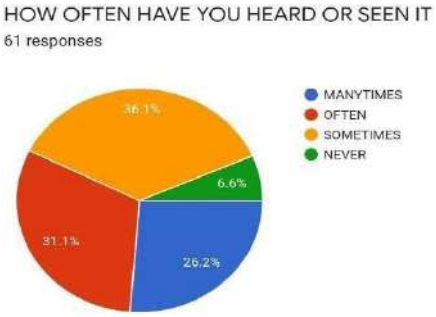
AWARENESS ABOUT HYUNDAI



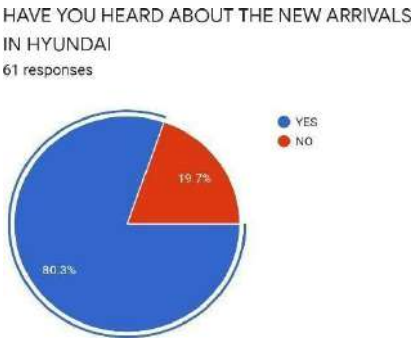
It is clearly understood that majority of the respondents came to know about Hyundai through newspapers and magazine. That is 25% came to know about it through newspapers and magazines. Seven persons came to know about it through television. 20 persons came to know about it through friends and relatives. Nine persons came to know about it through other sources. From this it is clearly understood that all the respondents have heard about Hyundai cars.

Experience of TEST DRIVE: It is clearly understood that majority of the person haven't done the test drive yet, i.e., 31 responses out of 61 respondents have done the test drive it whereas 30 respondents have done the test drive.
This question is asked to know whether the respondents have done the test drive of Hyundai cars. From the responses Majority of the respondents have done the test drive that is out of 61 respondents 31 have done the test drive and it is clear that nearly half of the respondents that is 30 respondents haven't done yet. Awareness should be created so that many respondents do test drive and as a result few of them will buy it.

HOW OFTEN HAVE YOU HEARD OR SEEN IT



It is clearly understood that around 36% heard or seen it sometimes and around 31% heard about it often and around the 26% heard about it many times around 6.6% never heardit about it. That is 22 persons had seen it sometimes, 19 persons heard about it often, 16 persons heard about it many times four persons have never heard or seen it. This is a pie chart we canconclude that out of a 61 respondents more than 57 respondents have seen or heard about it at-least once in their lifetime.



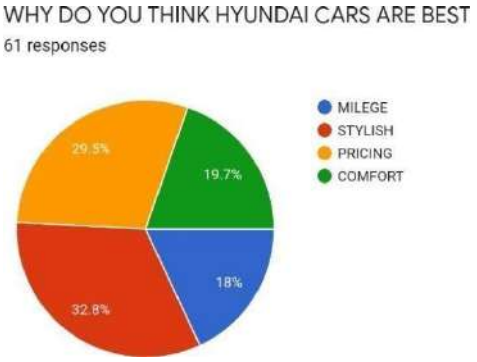
Preference to buy HYUNDAI CARS: It is clearly understood that majority of the respondents would like to purchase Hyundai cars. Out of 61 respondents 30 respondents wish to purchase a Hyundai car whereas 25 respondents do not wish to buy Hyundai cars and 6 respondents haven't decided yet. Around 50% wish to purchase it but 40 % donot wish to purchase it now and 10%haven't decided yet.

Awareness on the new arrivals of Hyundai cars: It is clearly understood that more than 80 % of the respondents are aware about the new arrivals of Hyundai cars and around 19.7 % of the respondents are unawareabout the new arrivals. That is among 61 respondents

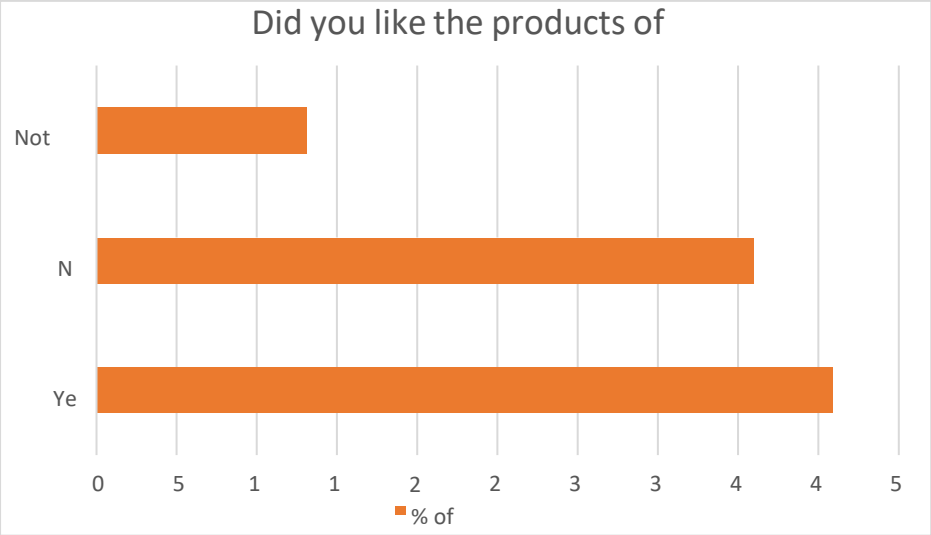
49respondents are aware about the new arrivals and 12 respondents are unaware about the new arrival.

It is clearly understood that majority of the respondents would prefer Mahindra. 32.1 percent that is 18 respondents have chosen Mahindra. 30.4% that is17 respondents are chosen Tata,28.6 percent that is 16 respondents have chosen Maruti Suzuki and 8.9% that is 5 respondents have chosen Toyota.

Positive things on Hyundai cars: It is clearly understood that most of the respondents think Hyundai cars of our best because of its stylishness. 32.8 percentage of correspondence like it because of its stylishness Around 29.5 percentage of respondents think that the Hyundai cars are the best because of its pricing.19.7 percentage of the respondents think Hyundai cars are best because of its comfort. 18 % of the respondents think are Hyundai cars are best because of its mileage. That is 20 persons think Hyundai cars are best because of its stylishness 18 thinks because of pricing 12 thinks because of comfort 11 thinks because of mileage.



LIKELIHOOD ON THE PRODUCTS OF HYUNDAI: It is clearly understood that majority of respondents like the products of Hyundai i.e., 46% and 41% doesn't like some of the product of Hyundai and 13 % or not sure.



28 respondents out of 61 like the products of Hyundai. 8 Respondents are not sure about it and 20 viral mountains tomorrow like some of the product of Hyundai.

RECOMMENDATION OF HYUNDAI CARS TO OTHERS:

It is clearly understood that majority of the respondents would like to recommend Hyundai cars to others. That is out of a 59 respondents 53 respondents would like to recommend the Hyundai cars to others has not chosen to recommend it to others.

BCG MATRIX

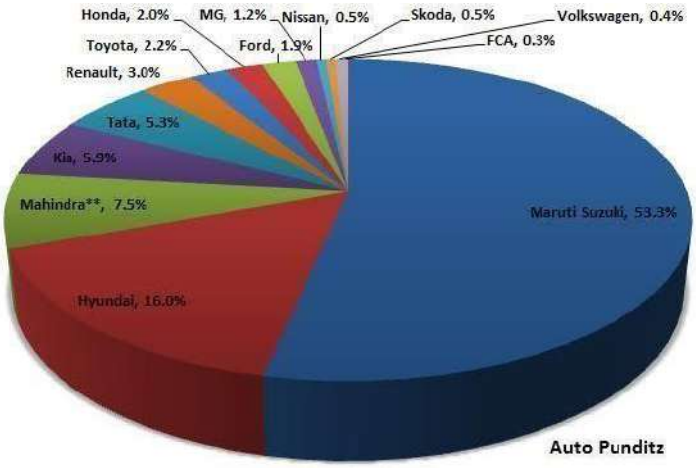
The Hyundai Motor Company, commonly known as Hyundai, is a South Korean multinational automotive manufacturer headquartered in Seoul. Hyundai was founded in 1967 and, along with its 32.8% owned subsidiary, Kia Motors, and its 100 percent owned luxury subsidiary, Genesis Motor, and electric vehicle subsidiary, Ioniq, altogether comprise the Hyundai MotorGroup.

SBU (STRATEGIC BUSINESS UNIT OF HYUNDAI)

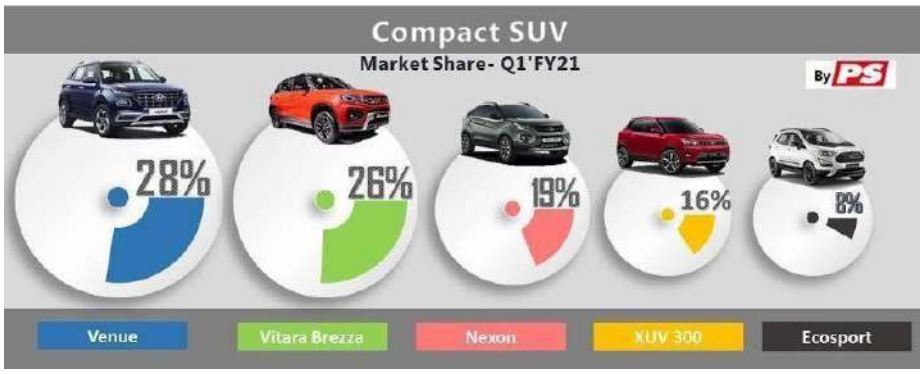
Hatch back	Sedan	Suvs
i20 Grand i10 Santro Kona Grandi10 nios	ElantraXcent Verna Aura	Creta Venue Tucson Kona

Market share of hatchback in India

MARKET SHARE OF SEDAN CARS IN INDIA



MARKET SHARE OF SUV IN INDIA



MARKET SHARE AND GROWTH

SBU	Annual growth 19-20	Market share(a)	Largest competitor(b)	Relative market growth a/b
Hatchback	48%	20%	32% (maruthi suzuki baleno)	.625
Sedan	7%	16%	53.3% (Maruthi suzuki)	.3002
Suv	42%	28%	26% (maruthi suzuki)	1.0769

CONCLUSIONS AND RECOMMENDATIONS HATCHBACK (QUESTION MARK)

The i20 has shown great promise and has back sector which has a great market share in hatchbacks but in totally hatchbacks share is less compared to altros and baleno.

But fluidic range of sentence are quite promising and boosted and the growth in market of hatchbacks in Hyundai. This version has erase to the previous perception of the sector and rebranding of hatchbacks is taking place recommendation for the transition to star segment is as follows:

Invest heavily in bringing new variant in i20 and Santro Expensive marketing of i20 is the need of the time I20 low price dividend should be introduced so that it can attract every segment of buyer

SEDAN: (currently placed in question mark): Accent has shown great promises in Seden sector which has great market share but totally fed and share is low for Hyundai. virus Elantra and Verna or very low in market growth and market sharebut fluidic range of students are quite promising and booster and assured the growth in market of students in Hyundai these notions has raised the previous perception of this sector and rebranding of sentences taking place recommendations for the transition to stars segment is as followsInvest heavily in bringing new variant in Verna and Elantra Extensive marketing of Elantra is the need of the time

Ring sedans in range of 7 to 8 lacks is required to compete with competitors

SUV'S (CURRENT PLACED IN STARS): Success story of Hyundai Creta and when you inspired the SUV segment and took the market by storm. There are four SUV which are produced in India and exported from India to European countries it's Creta and reduction is one of the major sellers in USA and Europe. Hyundai started production of hydrogen powered I*35 SUV in December 2012 which is the step to build its SUV portfolio as it is correctly placed in stars. Recommendations: It should focus on more variance of Creta as its market grow is very good to focus on venue because it is cash cow for the Suv segment. Solitude increases portfolio by bringing in more SUVS.

CHI SQUARE TEST ANALYSIS:
NO 1: RESPONDENTS KNOWLEDGE ABOUT HYUNDAI CARS
NULL HYPOTHESIS (H0): Knowledge about Hyundai cars has no impact on gender equality.
Calculation of Chi-square value:

RESULTS	YES	NO	TOTAL
MALE	0.003	0.015	0.017
FEMALE	0.009	0.035	0.04

TOTAL	0.012	0.049	0.061

Calculation of Degree of Freedom (df):df = (r-1)(c-1)=(2-1)(2-1) =1. Fixing out Level of Significance (LoS): 95% means = 5% difference = 0.05. Finding out the Chi-square table value matching df and los: Chi-square table value between df=1 and 5% los = 3.841. Compare the result of Chi-square value and Chi-square table value: Chi-square calculated value = 0.06; Chi-square table value = 3.841. Here, the Chi-square calculated value is lesser than Chi-square table value.

Result: Here, the Chi-square calculated value < Chi-square table value, so ACCEPT the null hypothesis. So it is clearly identified that knowledge about Hyundai motors has NO impact on Gender equality.

VISIBILITY OF TANGIBLE AWARENESS

NULL HYPOTHESIS (H0): how often respondents' seen it has no impact on gender equality.

Calculation of Chi-square value:

RESULTS	MANYTIMES	OFTEN	SOMETIMES	NEVER	TOTAL
MALE	0.46	0.004	0.86	0.007	1.33
FEMALE	0.16	0.001	0.31	0.003	0.47
TOTAL	0.62	0.005	1.17	0.010	1.80

Calculation of Degree of Freedom (df):df =(r-1)(c-1)=(4-1)(2-1)=(3)(1) = 3. Fixing out Level of Significance (LOS):95% means = 5% difference = 0.05. Finding out the Chi-square table value matching df and los: Chi-square table value between df=3 and 5% los = 7.815. Compare the result of Chi-square value and Chi-square table value: Chi-square calculated value = 1.80; Chi-square table value =7.815. Here, the Chi-square calculated value is lesser than Chi-square table value.

Result: Here, the Chi-square calculated value < Chi-square table value, so ACCEPT the null hypothesis. So it is clearly identified that have the respondent seen Hyundai has NO impact on Gender equality.

HOW DO THE RESPONDENTS KNOW

NULL HYPOTHESIS (H0) : Respondents various modes of knowledge of how do they came to know about Bajaj Allianz has no impact on gender equality.

Calculation of Chi-square value:

RESULTS	TELEVISION	NEWSPAPERS AND MAGAZINES	FRIENDS AND RELATIVES	OTHERS	TOTAL
MALE	0.013	0.02	2.67	1.62	4.32
FEMALE	0.005	0.01.	1.03	0.63	1.67
TOTAL	0.017	0.03	3.97	2.25	6.26

Calculation of Degree of Freedom (df): df =(r-1)(c-1)=(4-1)(2-1)=(3)(1) = 3. Fixing out Level of Significance (LOS):95% means = 5% difference = 0.05. Finding out the Chi-square table value matching df and los: Chi-square table value between df=3 and 5% los = 7.815. Compare the result of Chi-square value and Chi-square table value: Chi-square calculated value = 5.99272499972. Chi-square table value =7.815

Here, the Chi-square calculated value is lesser than Chi-square table value.
Result: Here, the Chi-square calculated value < Chi-square table value, so ACCEPT the null hypothesis.So it is clearly identified that respondents various modes of knowledge of how do they came to know about Hyundai cars has NO impact on Gender equality.

RESPONDENTS VIEW ON PURCHASE OF HYUNDAI CARS
NULL HYPOTHESIS (H0): Respondents view on branding strategies undertaken by Bajaj Allianz has no impact on gender equality.
Calculation of Chi-square value:

RESULTS	YES	NO	NOTYET DECIDED	TOTAL
MALE	3.46	0.02	0.44	3.92
FEMALE	1.34	0.01	0.17	1.51
TOTAL	4.80	0.02	0.61	5.44

Calculation of Degree of Freedom (df): df = (r-1)(c-1)=(3-1)(2-1)=(2)(1) = 2. Fixing out Level of Significance (LOS):95% means = 5% difference = 0.05. Finding out the Chi-square table value matching df and los: Chi-square table value between df=2 and 5% los = 5.991. Compare the result of Chi-square value and Chi-square table value: Chi-square calculated value = 5.44; Chi-square table value = 5.991.
Here, the Chi-square calculated value is lesser than Chi-square table value.
Result: Here, the Chi-square calculated value < Chi-square table value, so ACCEPT the null hypothesis.So it is clearly identified that respondents view on purchase of Hyundai cars has NO impact on Gender equality.

FINDINGS

- ✓ It is inferred that majority of the people who responded for the questionnaire are less18-25 years of age. Majority of the respondents are male.
- ✓ Majority of the respondents heard about Hyundai cars through news papers and magazines i.e., out of 61 respondents 25 of them came to know about it through newspapers andmagazines
- ✓ Majority of the respondent had heard or seen it often that is 19 respondents had seen or heard it. 49 response out of 61 had heard about the new arrivals in Hyundai
- ✓ Around 30 respondents have done the test drive of new arrivals in Hyundai. 31respondentshaven't done it
- ✓ Majority of the respondents like the products of Hyundai that is out of 61 respondents28 respondents have liked the products and 8 respondents are notsure
- ✓ Majority of respondents on a personal car that is 45 out of 61 respondents who own a personal car
- ✓ Majority of the respondents which to purchase Hyundai cars in future that is around30 respondents have expressed their willingness to purchase Hyundaicars
- ✓ If not Hyundai 18 respondents have chosen Mahindra car.
- ✓ Majority of the respondents that is a 20 out of 61 respondents have taught that Hyundai cars or best because of itsstylishness
- ✓ Indian the respondents that is 30 out of 60 and respondents and know the logo of

Hyundai car price 10 on not sure aboutit

- ✓ Majority of respondents that is 33 Out of 60 respondents would prefer a diesel engine while buying a Hyundai cars
- ✓ 53 respondents out of 59 respondents would like to recommend Hyundai cars to others

majority of respondents that is a 23 out of 61 respondents would prefer AMT transmission

RECOMMENDATIONS

Recommendations are given on the basis of findings and analysis of data collected through questionnaire.

- ✓ In order to promote sales in highly competitive automotive market, attractive schemes such as cash discount, complementary gifts, lucky draws, etc., can be organized to thecustomers.
- ✓ Customers who gets estimate or enquires about the product, either through online or in-person, should be contacted at a regular interval through phone calls, emails,etc., to maintain customers' satisfaction.
- ✓ Since the people tends to forget the advertisement of a product, a simple reminder messagehas to be enforced in a regular interval through a proper media which would reach a largenumber of potential customers, including the people in the rural areas.
- ✓ As from the inference, we can see that the most important criteria for selection of the car is its performance and features which includes price, comfort, spacious, glossy interiors, stylish exteriors, mileage, speed, braking efficiency, maintenance, etc. So there would be a definite increase in the sale of the car if this could be looked into, improved and gets updated.
- ✓ The author suggests that hyundai could concentrate on marketing and communication efforts and adjusts its advertising accordingly, in order to reflect more accepted brand imagery for the ethnic group with respect to the automotive brand, through meeting the desires, social and self-expressive needs of this group more accurately.
- ✓ The author suggest Hyundai should focus on developing branding strategies concerned with being able effectively to improve the satisfaction of emotional needs, on the part of the population in question.
- ✓ Through creating a loyal consumer base, there is more of a guarantee of future sales and profit, which in turn contributes to positive brand equity, incentives or frequent purchasingprogrammes, etc would restrict consumers from brand switching.
- ✓ By identifying what it is that, this segment values the most in the brand can adjust its valueproportion accordingly in order to increase its market share.
- ✓ By providing a superior value proposition, and meeting the problems, desires and needs ofthe consumer more appropriately, the brand can head towards enhancing and improving the consumer satisfaction and loyalty.

LIMITATIONS

There were various limitations concerning this study. Limitations are

- The questionnaire got only 61 responses.
- The study was conducted under of assumption that the information given by the respondents is authentic.
- The respondents were reluctant to answer due to their busy schedule.

WAY FORWARD:

- ✓ Our sample consisted of 61 people. A research with a greater sample would give a more dependable and generalized result. Even if the result was different from our result, it would givea more significant end result.
- ✓ Our research was responded mostly by students, which also means that the respondents have certain preference and economical limits that do not match people that are working and have anincome. A research can be done on "white collars" and see if they have different buying behaviour than our sample.
- ✓ A survey with other explainable factors can be done. As said above, if the persons in the samplehave a regular income and no economical limits, the behaviour would probably be different and that would also affect the depending factors like awareness, loyalty, influenced by others and quality. People with a high income are more dependent by brand awareness.
- ✓ The factors are changing if the products in the survey are not everyday commodities. A personis more aware and compare when buying a car than a package of rice. A research on luxury goods, instead of everyday commodities, could be done. It would be interesting to see the resultif other countries thanIndia were included in the survey.

Since the survey is done only through online and no direct contact with respondents there are some flaws. It would be better and more authentic if the survey is conducted by enquiring the respondents in person.

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TEACHER'S ROLE IN SOCIETY OVER THE AGES… AND IN THE YEARS AHEAD

Dr Ramkumar Ramamoorthy
Pro Vice-Chancellor, Professional Learning
KREA University

Excerpts from Dr Ramkumar Ramamoorthy speech as the Chief Guest of the 8 days National Level "Capacity Building Programme- A Teacher's Toolkit", conducted by the Internal Quality Assurance Cell-M.O.P VAISHNAV COLLEGE FOR WOMEN (18th January to 25th January, 2021

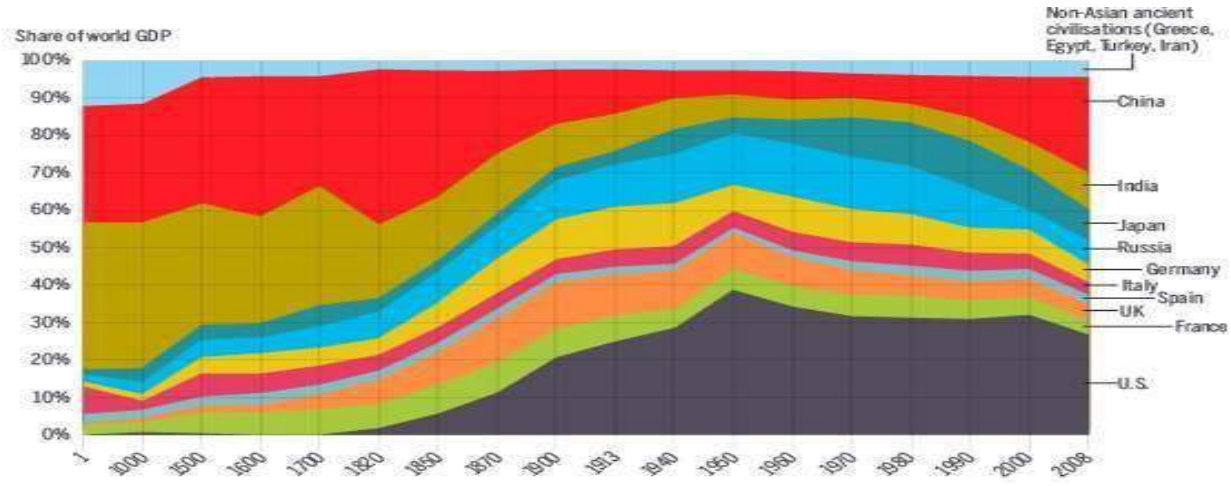
Absract

All around the world, leaders from government and industry debate the future of work and the changes brought by technology and automation. Despite this, the world is not reacting fast enough to update our system of education both in content and delivery. The fourth industrial revolution is changing the world around us. Artificial intelligence (AI), robotics, big data and the internet of things are its new tools. The impact on jobs and industry that these tools are creating is immense. However, they also present huge opportunities to tap. For shaping the expectations of students to meet the challenges of the future, academic institutions would need to design collaborations. Universities, colleges, research centers government agencies and corporate need to collectively get involved in the process. At the global level in academic circles, people are now discussing the need of shifting from quality culture to impact culture. Therefore, educational institutes of the future must constantly work towards finding solutions to societal problems. They must make efforts to create an impact on the society they operate. This calls for a complete makeover of the teacher's role in the education process.

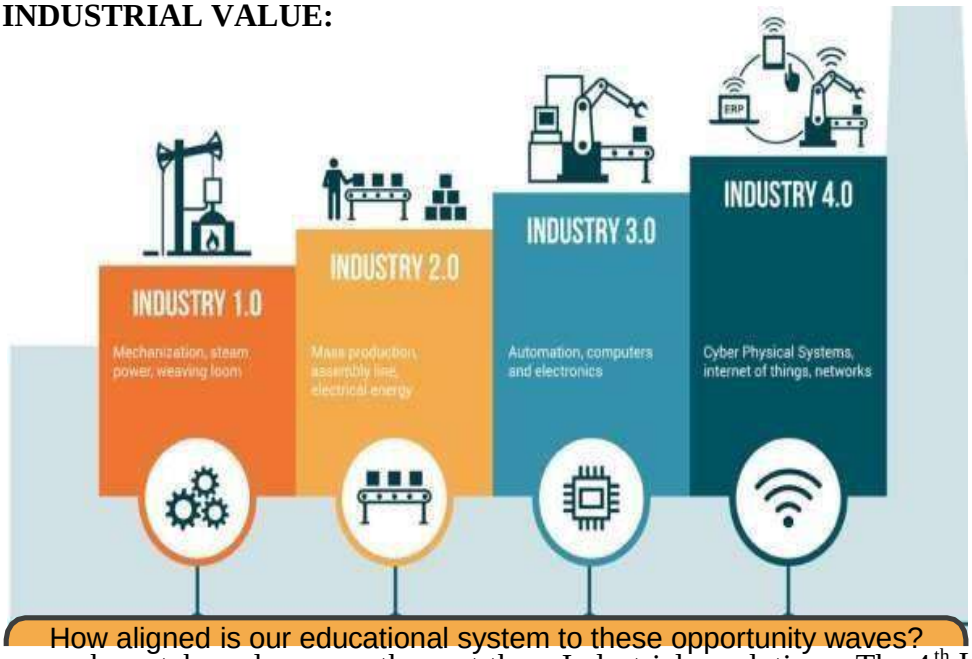
I. INTRODUCTION

ECONOMIC HISTORY OF THE WORLD

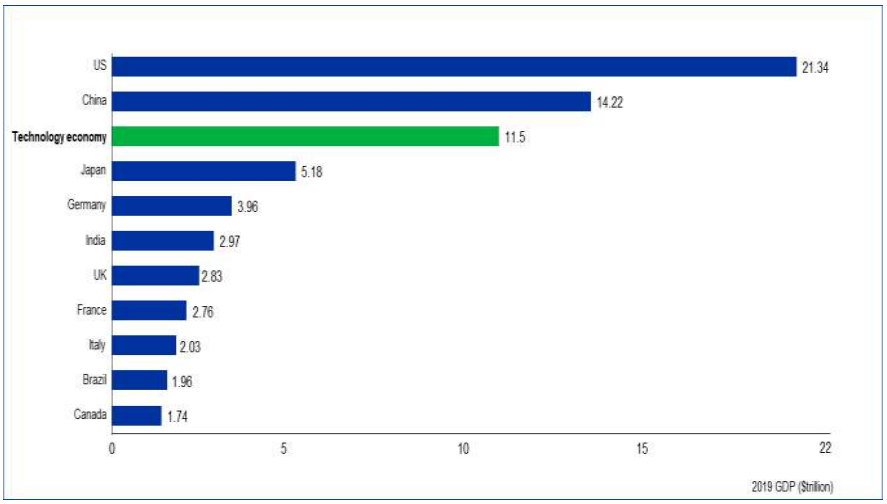
India and China were home to one-third and one-quarter of the world's population, respectively. It's hardly surprising, then, that they also commanded one-third and one-quarter of the world's economy, respectively.in the early days. Before the Industrial Revolution, there wasn't really any such thing as lasting income growth from productivity The industrial revolution(s) changed all that. Today, the U.S. accounts for 5% of the world population and 21% of its GDP. Asia (minus Japan) accounts for 60% of the world's population and 30% of its GDP.



WAVES OF INDUSTRIAL VALUE:



A multitude of changes have taken place over the past three Industrial revolutions. The 4th Industrial Revolution will dramatically change the way we relate to one another, live, work, and educate our children. These shifts are enabled by smart technologies, including artificial intelligence, big data, augmented reality, blockchain, the Internet of Things, and automation. These technologies are disrupting every industry across the world at unprecedented speed. For our children to be prepared to engage in a world alongside smart machines, they will need to be educated differently than in the past.



Sources: IMF world economic outlook, 2019; Trends in the Information Technology Sector—www.Brookings.edu

PREPARING OURSELVES FOR THE 4TH INDUSTRIAL REVOLUTION

1. Redefine the purpose of education
2. Improve STEM education
3. Develop human potential
4. Adapt to lifelong learning models
5. Alter educator training
6. Make schools makerspaces
7. International mindfulness
8. Change higher education

There is an immense need in forging stronger ties between institutions of higher learning and industry. Changes will need to be made to our post-secondary education learning to prepare students for the 4th Industrial Revolution adequately. During the 4th industrial revolution, college qualifications will become shorter and more focused, and colleges will provide more life-long education with modular post-grad qualifications throughout the working lives of individuals. This will also impact how earlier education levels will need to modify their college preparatory classes. For example, it is essential that the seeds for this type of learning are set in schools by offering students the opportunity to learn topics beyond their core curriculum and develop a love for learning.

TWO KEY INGREDIENTS TO SUCCEED IN INDUSTRY 4.0:

A number of experts believe that adoption of Industry 4.0 will result in increased use of automation and robots in the shop floor. Given that these robots will be capable of performing tasks multiple times with high levels of accuracy and within shorter time duration than humans, robots will act as an efficient replacement for labour. The quantum of job loss, however, is expected to vary with country, industry and employed levels of automation. The experts on the other end of the spectrum believe that the use of industry 4.0 technologies will not result in job loss, if not an increase in employment. The basis behind such a statement is the fact that Industry 4.0 will result in an increase in labour productivity and in the quality of the products manufactured. As a result, the demand for quality products manufactured will increase, rendering companies with no option but to increase capacity to meet the demand.

There is no doubt that certain low-skilled jobs will be eliminated. However, it is expected that an increase in capacity will have a positive effect on the creation of jobs, requiring higher levels of skills. Employees who were rendered jobless due to elimination of low-skilled jobs need to be re-skilled or up-skilled to make them ready for the new requirements. All in all, the creation of new high skilled jobs will compensate, to a large extent, for the elimination of low skilled jobs.

With a strong background in IT, India has seen a number of start-ups in the digital technology space. Companies like Imaginarium which provide 3D printing services have come up. Though the current market for 3D printing is small , big companies like Hero, L&T, Pidilite and ISRO have used such technologies to develop prototypes. Implementation of such technologies in industry on a large scale is bound to take some more time. In terms of sectors driving Industry 4.0 adoption, the Automotive sector is at the forefront. Some other areas that have seen some traction in adoption of such technologies include packaging in the FMCG sector, service management at hospitals and monitoring in the energy / power sector.22 India faces a significant threat due to shrinking labor cost arbitrage compared to countries like Vietnam, Indonesia, etc. Manufacturers have been looking at other attractive destinations which offer the cost advantage which countries like India have offered historically. With adoption of Industry 4.0, India has an opportunity to turn the tide in its favor as Industry 4.0 will help India in evolving as a hub for manufacturing quality products at low cost when compared to other countries

UNIQUE CHALLENGES FACED BY INDIA:

- 374 million Indians are between 10-24 years old and they constitute a fifth of the world's young people. Half of them drop out before Class 10.
- Nearly a million turn 18 every month and start looking for employment. However jobs are scarce because employment growth (0.8%) is half of population growth
- Unemployment is much higher amongst youth aged 15-29 (16%) than those over 30 (1.5%).
- Only half the working-age population is working or seeking employment; this number is much lower for women (27%).
- Paradoxically, a higher-educated Indian youth is six times as likely to be unemployed as an

uneducated one, which is an indication of both the quality of jobs and the quality of the educational degrees.

India talent landscape

2M Indian institutions imparting skills

300M Indians currently getting educated/skilled and will look for work

468M Indians now in jobs may (or may not)be acquiring skills on the job

	ACADEMIC	TECHNICAL	VOCATIONAL	
Age 24+	**Doctorate** 126,500 enrolled	Doctorate in Engineering 30,600 enrolled		
Age 22+	**Master's** 3,900,000 enrolled	**Master's in Engineering** **257,000 enrolled**	**Advanced training** 28 institutions 350,000 enrolled	**Master's of vocational education** Launched 2015, No data
Ages 19-21	**Bachelor's** 800 universities 27,400,000 enrolled	**Engineering colleges 3,200 colleges 4.2M enrolled** **Polytechnic 3-year Diploma 3,900 institutes 1.5M enrolled**	**Industrial training at ITIS** 13,550 institutions 1,200,000 enrolled	**Bachelor's of vocational education** 162 institutions 10,200 students **Community colleges** 157 colleges
Ages 17-18	**Higher secondary(grades11-12)** 112,600 institutions 24,700,000 students		Vocational higher secondary 7,400 schools 472,000 enrolled	

COLLABORATION WITH EDUCATIONAL INSTITUTES:

Companies have also shown interest in associating with educational institutes for Industry 4.0 technologies. AlfaTKG, a Japanese technology firm, signed a MoU with the Indian Institute of Technology Madras to undertake research for developing smart manufacturing technologies for India. General Electric (GE) launched the GE Edison Challenge 2016, an open innovation challenge for the university student community. The competition is primarily focusing on digital physical industrial internet solutions, promoting technology and product innovation, and encouraging young minds to come up with out-of-the box products related to Industry 4.0. GE has also signed a MoU with IIT Madras to set-up an Industrial Internet Centre of Excellence to develop Industry 4.0 applications that will help companies save cost. Festo Didactic, a leading provider of equipment and solutions for technical education, has joined hands with BITS Pilani, a private technical institute in India, to develop a learning factory that allows practical application of modern manufacturing technologies.

Though India has significant experience in developing IT-related infrastructure, it currently lacks a strong hardware capability network. As of now, a number of Indian IT firms are capable of handling the software part. However, not many companies exist which can understand the technicalities of developing Industry 4.0 hardware and building the same at cheap cost.

The success of any industry depends not only on the machines deployed for manufacturing the products but also on the labor force employed. It is important that the employees have the required skill sets to operate machines efficiently and to ensure that the processes are running as per standard operating procedures.

CURRENT SKILLING LEVEL:

Education plays an important role in ensuring skill-readiness of the labor force. General education as well as vocational education have a critical role to play in making labor force dustry ready. BRICS nations face a dual challenge of a lack of highly-trained employees and non-employability of a large section of educated labor force due to skills mismatch.

With skills required for the jobs changing faster, companies across the world are facing challenges in finding skilled workforce at current skill levels. Technology is evolving faster than ever before and the talent pool through which employers have to select workers is shrinking due to declining workforce. As per a survey conducted by Manpower Group, globally 38% of the employers face some kind of difficulty in filling the job vacancies.

A number of reasons exist for this shortage of talent. In a survey taken in 2020, around 35% of the employers quoted lack of available applicants as a major reason for the difficulty experienced in filling the jobs. 34% of the employers mentioned lack of candidates with required technical competencies (hard skills) as the next major reason for the talent shortage while around 20% of the employers reported lack of experience and lack of workplace competencies (soft skills) as the other main reason for the same.

In order to overcome the above mentioned difficulties, companies have been resorting to developing capabilities of their existing workforce, developing new recruitment channels and tapping into labor pools of different countries. With the increase in adoption of advanced manufacturing technologies, the problem is bound to become even more severe. Not only will there be a lack of manpower with the desired skill sets but employers will have to make high capital investment in re-skilling or up-skilling their existing workforce to suit their requirements

SKILLS FOR THE FUTURE:

It is very important to understand what changes Industry 4.0 will bring in the current setup, what the new tasks that an employee would have to do will be, how it is going to be different from what he or she has been doing and what additional skills would be required to carry out those tasks successfully

What changes will Industry 4.0 bring? The next industrial revolution will bring higher level of automation and interconnectivity in the business processes. The tools, technologies and machines to be used are expected to be different from what is present today. Smart machines will coordinate manufacturing processes by themselves, smart service robots will collaborate with workers on assembly line and smart transport systems will transfer goods from one place to another. Smart devices like tablets, wearables, etc., will be used to gather and analyze real-time information

With the change in work environment and tasks expected to be carried out by workers, the skill required will also change. These new skill sets will not replace the existing skill sets. Rather, these new skills will be required in addition to the skills that are important in current scenario.

A question looming large upon all of us is, “What are we doing to prepare future generations to thrive in this changing landscape?”In most schools and colleges, we are still teaching subjects in a traditional way with same old course content. Although some debates about the evolving future of education in changing times have already begun there isn’t much action on the ground happening as a result of it. Any discussion on the future of work should go hand-in-hand with a discussion on the future of curriculum and also about those who eventually delivery it i.e. teachers and faculty.

Skills such as problem-solving, creative thinking, digital skills, and teamwork are in great demand but no attention to developing them is given in our school education system. It is only when students enter professional courses, they are exposed to such abilities. But then it is perhaps too late because by then your attitude and belief system is by and large fixed leaving little room for new adaptations.

Currently, the need is to revamp foundational education for making it future-ready. To prepare students for meeting the changing demands of Industry 4.0 and beyond, our curriculum must combine futuristic subjects with traditional ones. Besides, the focus must also be on imparting a skill-based curriculum which is important in the digital world.

To take full advantage of the opportunity created by advanced technology we need a revolution in education. We need to ensure that our students and teachers alike get the best possible teaching-learning experience. This calls for developing Education 4.0 experience for students and teachers that addresses the needs of the fast-developing world around us.

For shaping the expectations of students to meet the challenges of the future, academic institutions would need to design collaborations. Universities, colleges, research centers government agencies and corporate need to collectively get involved in the process.

Modern learning cannot happen without modernizing delivery. Faculty 4.0 should go hand in hand with Curriculum 4.0. Teachers should focus their efforts on using technological applications that aid cognitive learning abilities. Learning outcomes should be based on personalized adaptive learning techniques. Intelligent digital assets should guide teaching concepts. Teacher-student interaction should be based on a smart approach to make the whole experience engaging and interesting.

In the coming years, it is predicted that students would have greater flexibility in choosing their mode of engagement. This incentive will be given to them by technology. As such, new forms of learning models would be increasingly important to develop a holistic view of learners' engagement and progress.

Already, employers are reporting a shortage of digital skills in their workforce. They feel that universities and colleges can play a pivotal role in retraining and up-skilling of the current

workforce to meet their demands. They also recognize that a large proportion of future students would be looking for flexible approaches to learning because of their work commitments. No doubt, technology will play a vital role in enabling all this.

The future generations will be more conscious of their environment and would want the education system to address the changing ecosystem. Can our future curriculum produce the person industry needs, is a big consideration of academic leaders today? Not only curriculum and faculty but the entire academic administration will have to be aligned with the requirements of industry 4.0. Our admission process, course material, assessment, etc. – whole will have to be in sync with technology.

Education and industry generally interact only during the placement season. But they need to meet quite often to discuss the demands for education to be industry-ready.

India needs a high quality of education to be able to tap into the potential of Industry 4.0. Employability of our students is going down, and they need to step up with the changing technology scenario which is changing things surprisingly.

OPPORTUNITIES FOR INSTITUTES AND UNIVERSITIES:

Industry 4.0 cannot exist without University 4.0. The present enterprise revolution is bringing unprecedented changes. If we do not upgrade our education system our graduates will lose shine in the job market of the future.

Industry 4.0 also has a lot of opportunities for academic institutions to upgrade themselves to the next level. Institutions can develop an advance plan to bridge the demand-supply gap of skilled labor in the digital economy. At the same time, revamp their own functioning to achieve operational efficiency using technology. Educating emerging workforces with modern tools and techniques is the only solution to Industry 4.0. Colleges and universities need to think about how we can establish an ecosystem of continuous and futuristic learning that paves the path towards the big Indian dream.

In the digital age where qualifications need to be quickly upgraded, it is no longer a one-time course/degree that can ensure life-long employment, but a continuous endeavour towards upskilling that can achieve it. The responsibility of educational institutes today is to ensure that their students should possess hard and soft-skills to be future-ready for jobs. Most importantly they must also ensure that the students inculcate the necessary attitude to become a lifelong learner.

n the age of disruptive technologies, there is a greater need for universities and schools to evolve their course curriculum and upgrade faculty skills. This can be achieved by developing a comprehensive framework for continuous up-gradation in academic administration. Existing courses should be continuously upgraded to meet industry demands. In addition, new courses or modules should also be added to fill the required skill gap.

Course content should be user-friendly and can be accessed across multiple delivery modes. Such content will enable switching between online, blended, or on-campus modes of learning thereby giving greater flexibility to the learner. There is also scope for academic institutes to launch shorter certifications for professionals looking to enhance employability.

In curriculum 4.0, modern techniques such as Machine Learning (ML) can be used for assessment of student progress. Such tools would also provide valuable insights into a student's strengths and weaknesses. Such modules can also foster a viable ground for academia-industry partnerships and provide space for edtech companies to think of developing innovative solutions in similar areas.

Multi-modal learning and teaching

Preparing learners for jobs of the future cannot happen if the faculty is not ready to co-invest in the up-gradation process. Hence the need for Faculty 4.0 is critical than ever before.

India's re-skilling challenge can only be met if our education system is constantly aligned and receptive to the changes around it. The entire value chain comprising of the three important links – industry, students/jobseekers, and the schools/universities have to work in tandem.

THE EVOLVING ROLE OF A TEACHER:

From…	To
Sage on stage ▪ Major source of knowledge which is handed down to the learner	**Participant in and facilitator of the learning journey** ▪ Set objectives and design learning process andjourney ▪ Enable learning to happen in a multi-modal way ▪ Guide on the journey and enable the best version of themselves [co-learn, challenge the status quo in thinking, stretch learners' capability and creativity, provide tools to learn, create a psychologically safeand comfortable environment for learning, build lifeskills and leadership traits, among others]

In the education system of the future, the role of teachers is going to be more of a facilitator and enabler of personalized growth. This will require a massive transformation in their approach to focus more on outcome-based teaching instead of continuing with traditional

ways. This transformation must also include key areas such as employability, student experience, research excellence, societal impact and benefit for the industry

From…	To
Uni-dimensional ▪ Teaching	**Wearing many hats** ▪ Project managers, guides and researchers, counsellors, curriculum designers, designers of learning experiences, event organizers, , consulting professionals, start-up curators
Output-oriented ▪ Examination orientation	**Outcome-oriented** ▪ Successful and happy individuals [what defines success and what defines fulfilment is individual-oriented] ▪ Interwoven and experiential learning, ethics and values, failure as an option and consequence management, among others

Today's learner does not need instructor-led educational models but wishes to engage through multiple sources of knowledge at his own pace. Their focus is not just on enhancing knowledge but equally or in some cases even more on the factor of employability and skill development. That is why the curriculum of the future has to be curated in a way that caters to their evolving needs.

DIGITAL AND BLENDED LEARNING IS INESCAPABLE

Faculty of the future needs to have a fine blend of academics and practice. They should have relevant industry exposure to make their teaching more effective and contextual. Education 4.0 and beyond should be a proactive response to the evolving needs of the Industry and society rather than a knee jerk reaction. Mere piecemeal changes won't work any longer. Education has to be overhauled for once and all.

From…	To

Using traditional tools with traditional outcomes	Technology-enabled, multi-modal learning
▪ Blackboard and books leading to a formal degree	▪ OHP, PowerPoint, Smartboards, interactive and gamified learning, Learning Management Systems, Experiential Learning Systems, etc. ▪ Personalized teaching and learning [greater student engagement] ▪ Cohort-based learning [greater collaboration] ▪ Increased parental and societal engagement ▪ Modularized and laddered learning at students'pace, resulting in nano-degrees and micro credentials

CONCLUSION

Such a transformation isn't going to be incremental. It will require gradual efforts from academic leaders with the involvement and support of the government. At the policy level, structural changes in the system might have to be worked out. Opportunities for creating a deeper industry-academia connect will have to be thought of.

The globalized world now needs a more active education system, one that is robust enough to meet every challenge. And this cannot happen without thoughtful action and proactive involvement of all the stakeholders.

OUTCOME BASED EDUCATION – BENCHMARKING FOR QUALITY IMPROVEMENT IN THE HIGHER EDUCATION TEACHING & LEARNING PROCESS

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ABSTRACT

Outcome Based Education (OBE) is an educational theory that structures each part of an educational system around goals (outcomes). By the end of the educational experience, each student should have achieved the goal. The role of the faculty adapts into instructor, trainer, facilitator, and/or mentor based on the outcomes targeted. This article defines key terms and concepts of Outcome Based Education and outlines the phases that an institution needs to go through when it starts framings its outcomes at all levels. This article also gives clear direction for framing, attaining the outcomes and also to translate them into tangible and measurable outcome statements.

Key Words: Outcome Based Education, Outcomes, Programme Outcomes, Course outcomes, Blooms Taxonomy

THE BACKGROUND

Change is the only constant today, and with it, comes the need for education systems to update and adapt their approach or risk becoming obsolete altogether. Outcome-Based Education (OBE) is a pedagogical model that entails the restructuring of curriculum, pedagogy and assessment practices to reflect the achievement of high-order learning, as opposed to a mere accumulation of course credits[1]. OBE empowers students to take more responsibility for their own learning and supports the move to greater student engagement with the curriculum and to student-centred approaches.

Going by Quality initiatives and quality bench marks, when every institution is in the process of preparing itself for Outcome Based Education, its important to follow the PDCA Cycle – PLAN, DO, CHECK and ACT, in which the framing of the outcomes is the most crucial stage.

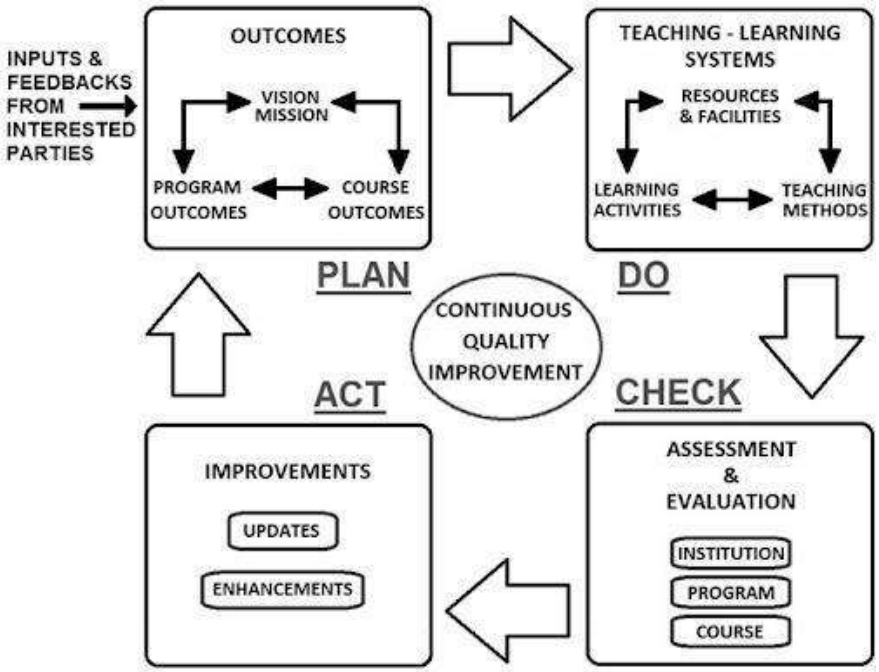

Figure 1: The PDCA Cycle of Outcome Based Education

Levels of Outcomes

When an institution needs to frame its outcomes, it first needs to understand the hierarchy and the various levels of outcomes that have to be framed and attained. There are 3 levels of Outcomes that need to be framed – first the Institution Level, second the Department Level and third at the Faculty Level

- At the institution level, every institution has to frame its Vision & Mission statements, then the Programme Educational Outcomes and the Programme Outcomes
- At the Department Level, Heads of the Departments are instrumental in framing the Program Specific Outcomes
- And finally all the teaching Faculty will have to prepare Course Outcomes for their respective subjects.

This is the super structure of the Outcomes hierarchy that every institution should work towards to.

FRAMING THE OUTCOMES

Vision & Mission Goals

The very first step for any institution to chalk out its future path is to frame a Vision statement, that is inspirational and it should briefly describe what the institution wants to achieve in the long run. On the other hand, a Mission statement should describe how the institution proposes to move towards the stated Vision and how it wants to achieve the Vision in the coming years. Why the vision & mission statements are very important is because, they form the foundational structure on which the institution stands – like the value system, dream, aspirations and it highlights the very purpose of the existence of the institution. By and large the Vison and Mission statements are prepared by the Founders and the management of the institution.

Programme Educational Outcomes (PEOs)

Once the institution has clearly defined the vision and mission statement, the next step is to clearly chalk out the Program Educational Outcomes (PEOs) that describe the expected achievements of graduates in their career, and what the graduates are expected to perform and achieve during the first few years after graduation. The institution should clearly frame the PEOs based on global needs, local needs and the Vision and Mission of the Institution.
Now for the institution to assess and attain the PEOs which can be done only after 3 or 5 years a batch of students graduate from college, the institution can conduct an employer's survey, wherein they can track the performance of their alumni through employer feedback.

Programme Outcomes (POs)

After the Program Educational Outcomes are framed, as a next step the institution needs to design the Program Outcomes for the Program clusters that it offers at the Undergraduate and Postgraduate level.
POs are statements that describe what the students are expected to know and what they would be able to do immediately upon graduation. Program Outcomes should be developed keeping in mind few parameters like skills, knowledge, competence and behaviour that students will acquire throughout a programme. These parameters are called - ***Graduate Attributes***

- According to the Washington Accord[2], there are 12 Graduate Attributes based on which institutions can design and frame their Program Outcomes. These attributes and outcomes will vary from discipline to discipline and level to level
- The Graduate Attributes, describe the qualities of a graduate, knowledge gained, communication and problem solving skills imparted, team dynamics, ethical values, lifelong learning that students will develop throughout their period of study in an institution.
- Graduate attributes are not a list of skills to be mastered but they are features of a student's degree program which goes beyond the classroom.

Programme Specific Outcomes (PSOs)

Now moving down the outcome Hierarchy, next Program Specific Outcomes will have to be framed and written by individual departments offering a programme. Every department can frame around 3 to 4 PSOs which should make students realize that the knowledge and techniques that they will learn during the programme and which will also have a direct impact on the society at large.

Course Outcomes (COs)

Course Outcomes should reflect the knowledge and skills the student acquire at the end of a particular course / subject. According to Blooms Taxonomy[3] Course Outcomes should inculcate all the levels of a students' Cognitive Skills that can be Measured from the lowest to highest cognitive skills.

Bloom's taxonomy serves as the backbone of many teaching philosophies, in particular, those that lean more towards skills rather than content. The emphasis on higher-order thinking inherent in such philosophies is based on the top levels of the taxonomy including application, analysis, synthesis, and evaluation. Bloom's taxonomy can be used as a teaching tool to help balance evaluative and assessment-based questions in assignments, texts, and in-class engagements to ensure that all orders of thinking are exercised in students' learning, including aspects of information searching.

The following are the Cognitive skills as per Blooms Taxonomy that have to be incorporated in the Course Outcomes of every course:

1. *Remember*
2. *Understand*
3. *Apply*
4. *Analyze*
5. *Evaluate*
6. *Create*

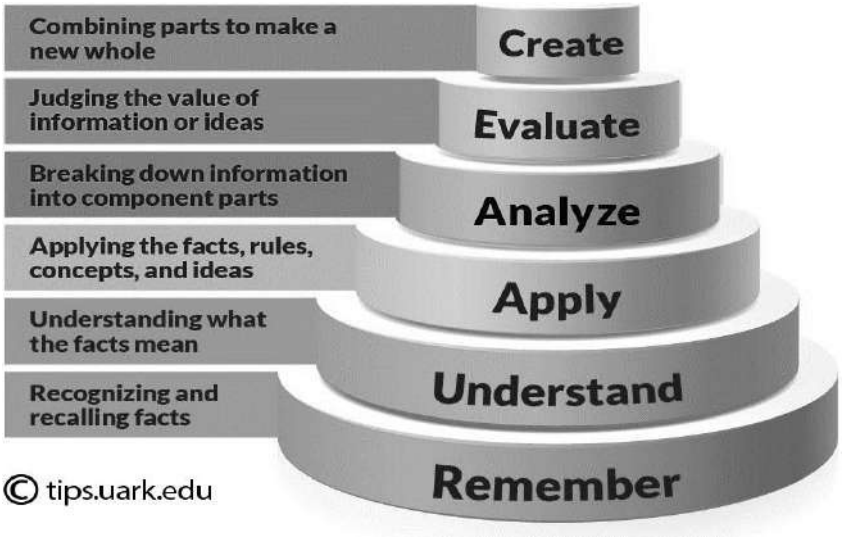

Figure 2: Bloom's Taxonomy

Course Outcome statements may be broken down into two main components:

- First – A set of action words / Verbs as per Blooms Taxonomy needs to be framed that identifies the performance which a student should demonstrate after completing the course.
- Second – It should be framed like a Learning statement that specifies what learning will be demonstrated in the performance.

Talking of Blooms Taxonomy and the Hierarchy of Cognitive skills that students should possess, given below are examples of measurable action words to include in Course Outcome statements as per Blooms.

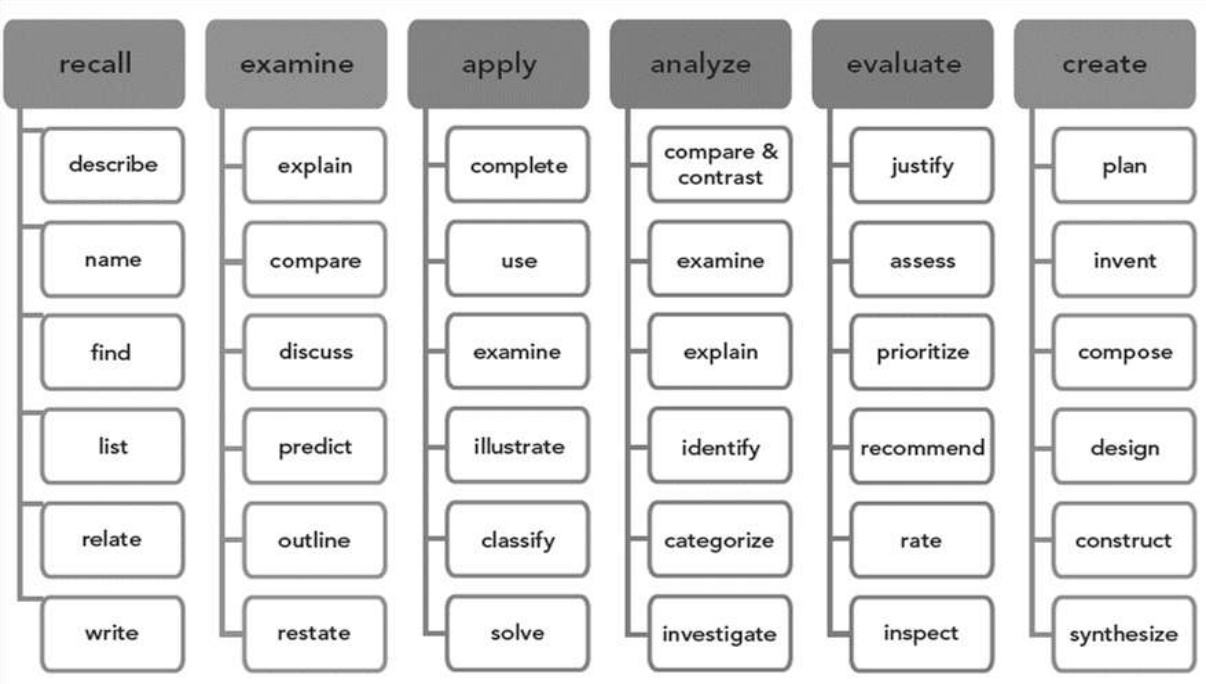

Figure 3: Action words to be used to frame the outcomes [4]

Under every cognitive skill there are a set of action words that can be used to describe the skill that the students will demonstrate on completion of the course.
Just as there are action words which we need to use to frame the outcomes, there are also a set of words that need to be avoided. These are words which cannot be measured and quantified. So its better to avoid words like - Understand, Learn, Appreciate, Observe, Read, Consider, Know, Become familiar with, Perceive, Feel, Study, Comprehend, See, Conceptualize, Listen, Self-Actualize, Memorize, Think, Experience, Realize etc.

So a common rule which we need to REMEMBER when we frame Outcomes Should Be – **SMART,** where

S – SPECIFIC
M – MEASURABLE
A – ATTAINABLE
R – REALISTIC
T – TIMELY
After the Outcomes are framed, it's important to fulfil and to make the outcomes effective, given below is a checklist to be followed to make the outcomes effective,

- The outcomes should be aligned with the mission, vision, values, and goals of the institution
- It should be relevant to the local, national, regional and global developmental needs – like social needs, economic needs…
- The outcomes should clearly describe and define the abilities, knowledge and attitude of graduates of the program.
- Outcomes should be SMART, written in simple language that is clear and unique.
- All outcomes should be framed and written using action verbs

OUTCOME ATTAINMENT

There are few Assessment techniques that institutions can adopt to be used for CO attainment. Two kinds of Assessment Methods, which institutions can adopt are - Direct Assessment and Indirect Assessment tools.

- Direct Assessment is divided as Summative & Formative Assessment with 80% and 20% weightage in the total evaluation framework.
- Under Summative assessment, evaluation is done based on examinations which are conducted based on the University norms, where as on the other hand the 20% of the formative assessment is what the individual subject faculty can creatively assess students.
- Under In – Direct assessment it is mandatory for all institutions to conduct a *Course Exit Survey* among all the students undergoing the course, to get their over all view about the subject, skills that they learnt in the course, faculty feedback etc.

Most often there are few mistakes we can make in the process of framing the Outcomes. Outcomes at times may not be attainable because faculty members may not refer or check the POs, PSOs & COs framed when they prepare their lesson plans. So it can lead to a mismatch in the course outcomes and the teaching outcome. Its also important for the faculty to educate their students about the importance of Course outcomes and why the institution has taken measures to frame these outcomes. It also advisable to share the lesson plan with the students so that they are also aware about how the course will be delivered.

As students form the crux of the institution, its mandatory for every institution to get a course wise structured feedback from every student. Unless we know what opinion the student has about the course and the institution – we will not be able to attain the outcomes. And also when we fail to keep in phase with trending technology and emerging teaching and assessment methods we may not be able to attain the desired outcomes for the institution and courses. Its very important for us as educators and teachers to constantly upgrade ourselves and try out new and interesting evaluation methods for internal components.

Given below are few pointers to be remembered while we frame the Outcomes at every level:

- The Vision, Mission, PEOs, POs and PSOs
  - Should be approved by the Management, Principal and the IQAC.
  - It should be made available in the Institution's Website and be displayed in prominent locations of the campus for staff, students and public to view it.
  - It's also important to communicate the outcomes to stakeholders like parents, employers and Alumni. It should also be communicated through e-mails or during the PTA sessions.
- When Course Outcomes are framed,
  - By individual departments it should be done in consultation with subject area experts and also be Passed in the Board of Studies along with syllabi and scheme of evaluation

- Since COs are subject specific, it should be Communicated to the students by the faculty incharge during the introduction class itself along with subject lesson plan
- In addition, faculty to also note that the Course outcomes have to be periodically reviewed during the commencement and completion of each unit of the course.

CONCLUSION

POs, PSOs & COs cannot be framed and attained in the first attempt itself as it is not an overnight process. It takes a lot of effort on the part of every faculty of the institution to put in their efforts in framing the outcomes. Faculty will have to devise a workable lesson plan not only on paper but also in action. Using a lot of blended teaching methods will be helpful to make students enjoy the learning process. Because ultimately a successful Course Outcome can be achieved only when students pass that course with desirable results. Moreover, once when the POs, PSOs & COs are framed, the institution should see to it that it reframes the outcomes every 3 years or as and when the need arises due to so many changes in technology, learning methods and industry requirements.

As a conclusion, the authors would conclude saying that framing the outcomes at all levels requires very high intention, sincere effort from faculty, and intelligent direction from the principal and skillful execution of the IQAC. In addition, we should not sit back and relax once we frame our first set of outcomes because remember that - Quality is not a benchmark but a process.

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SENTIMENT ANALYSIS OF COVID-19 VACCINE IN A SOCIAL MEDIA PLATFORM USING MACHINE LEARNING TECHNIQUES

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Abstract

Social media platforms like Twitter, Facebook are gaining popularity as they produce huge amounts of data. These platforms allow people to post messages across the world, express their views, share their opinions and feelings about a particular topic apart from just being a platform that gives information to the public. The enormous amount of data produced by social media can be used to gauge the people's sentiment towards the covid-19 vaccines. The Covid-19 pandemic is posing itself as one of the severest global threats and it is still an ongoing concern ever since its outbreak in the year 2020. Rapid advancement is taking place in the development and deployment of a vaccine for Covid-19. Oxford-AstraZeneca's Covishield and Bharat Biotech's Covaxin are the two vaccines used even though phase III clinical trials are still ongoing in India. While the vaccines are recommended by the government for the fight against Covid-19, it has also stimulated anti-vaccine campaigns/movements. So, there is a need to gauge the public's perception/sentiments towards the vaccines.

This research work focusses on sentiment analysis of the tweets posted in India regarding the covid-19 vaccination. It is important that the government, regulatory bodies and the public health agencies recognize people sentiments towards vaccination, that can help to create awareness among people towards vaccination. Machine learning algorithms facilitate analysis of tweet data to understand the opinions/sentiments of the people. The research work is carried out in two phases. During Phase 1, the tweets are classified as positive or negative by applying machine learning techniques like logistic regression and naïve bayes algorithm. The classification accuracy of 84.8% using logistic regression and 83.7% using naïve bayes algorithm is observed. Phase 2 of this research work analyzes tweets using Natural Language Tool Kit (NLTK) VADER, a python programming package, to understand the positive, negative and neutral tweets from tweet data. Implementation results shows that majority tweets are neutral.

Keywords: Corona virus, Vaccine, Sentiment analysis, Machine Learning, covid-19, Vaccination, Covaxin, Covishield.

I. INTRODUCTION

Covid-19 is an infectious disease caused by the SARS-CoV-2 virus. People infected with the covid-19 virus will experience mild or no symptoms to more serious respiratory illness. It causes serious illness to the people who already have medical problems like cardiovascular disease, diabetes, chronic respiratory disease and those with cancer. The covid-19 pandemic is considered to be one of the biggest global threats and is still continuing since its outbreak in the year 2020. Figure 2 shows the fear curve based on the tweets collected between the period 20th Feb and 29th Feb 2020 [7].

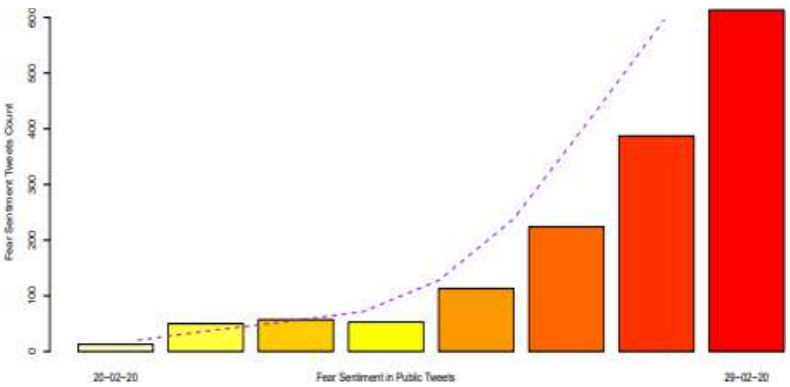


Figure 1: Fear Sentiment in public tweets

As the entire world is in the midst of Coivd-19 pandemic, WHO and other health regulatory agencies have developed and deployed covid-19 vaccines worldwide rapidly. Vaccines help the body's immune system to recognize and fight off the viruses and bacteria they target. Once the vaccination is done, the body is prepared to fight against the disease-causing viruses and destroy them, thus preventing illness and saving a million lives every day. Indian people are in the midst of administering Covid-19 vaccines. The chart below shows the total number of vaccines available, vaccinated people state wise.[18]

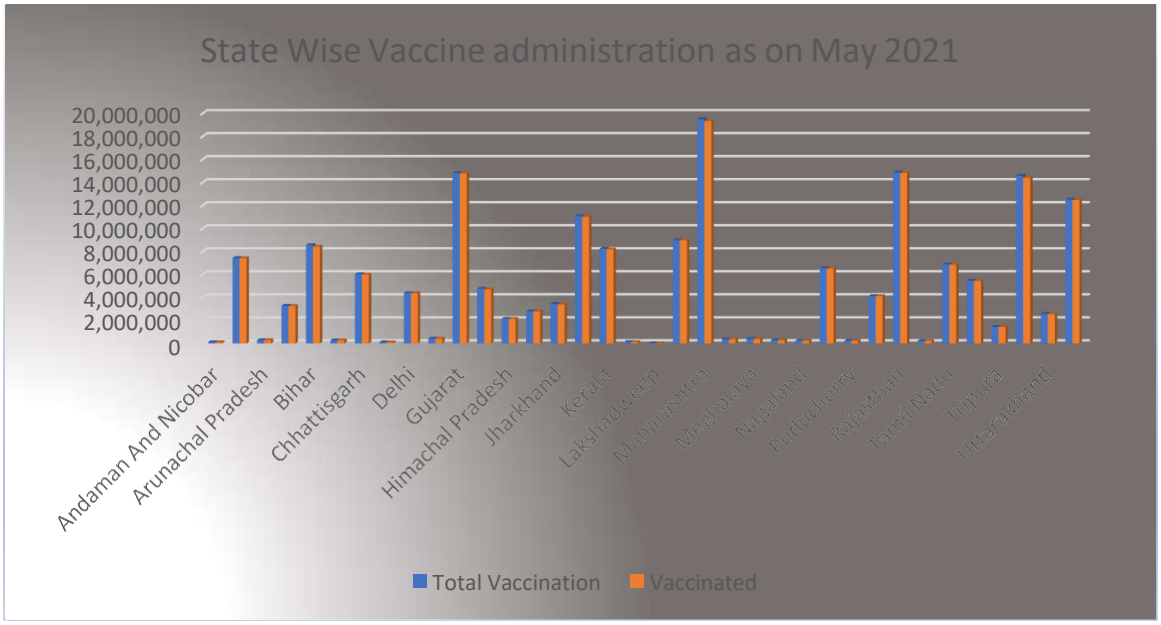


Figure 2: State Wise Vaccine administration as on May 2021

Two vaccines are approved by India; namely Covishield and Covaxin. Covishield is a version from the Oxford University AstraZeneca that was found to have an average efficacy of 70.4% in a peer reviewed study. The Serum Institute of India, one of the world's largest manufacturer of medicine, manufactured Covishield as an Indian version. Covaxin, India's home-produced vaccine, was developed by Bharat Biotech in collaboration with the Indian council of medical research and the National Institute of Virology. On 21st January 2021, The Lancet gave a green signal to Covaxin mentioning that it gives adequate immune response and that further efficacy trial is warranted. The Indian council of Medical research said that the safety of Covaxin is not

compromised even though emergency approval is given for the vaccine. It is advised that both the vaccines require two doses to strengthen the immune system against the SARS-CoV-2 virus [3].

In order to achieve better immunity against the virus, people should cooperate and volunteer themselves to administer the vaccine. Even though the Indian government has approved two vaccines, the people in India cannot choose the vaccine they want to administer and will have to take the vaccines as per the rules laid down by the government. It is announced by the health ministry that this is specially done due to the high demands for the vaccines and the logistic challenges. It is very important for the government and the public health agencies to understand the public perspective towards the vaccines, which can help them to create awareness campaigns among people, and help people to know the importance of vaccination through educational campaigns. Although several measures are taken by the government towards the vaccines, several anti-vaccine campaigns have also been noticed both in print media and social media. People are also sharing their thoughts about the vaccines on social media platforms like twitter. This research work aims to analyze sentiments of the people of India regarding both the vaccines and evaluates the public's view about the covid-19 vaccine with sentiment analysis.

Mining of opinions, views, attitudes and emotions from texts, speech or from database sources using Natural language processing is called sentiment analysis. It aims to analyze people's sentiment towards a product, services, movie, individuals, organization etc. Based on the people views or sentiment, decision making can be done. It is an AI based task which involves classifying opinions in text into categories like "Positive", "Negative" or "Neutral". In this research work, sentiment analysis is carried out on twitter data using machine learning techniques and by Natural Language Tool Lit (NLTK) package provided by python programming. Tweets are extracted from the Twitter through a python programming language library called tweepy. By using machine learning techniques like Naïve Bayes and Logistic regression and by using NLTK VADER, sentiment analysis is carried out to analyze the perception of people toward covid-19 vaccine.

II. LITERATURE REVIEW

In a nation with second largest number of infections in the world, the drugs controller general of India, approved covid-19 vaccine as a precaution against the spread of the highly transmissible variant found in the United Kingdom. Lack of transparency about the vaccine threatens people and weaken their trust. However, India seems to benefit both as importer and exporter as it owns one of the largest pharma manufacturing companies in the world [3].

As some people in India sceptical to covid-19 vaccination, Dr. Akash D Dubey conducted a research to gauge people sentiment about the vaccine and his research results shows that tweets regarding covishield had more positive sentiments than covaxin. It was also found emotions like trust and anticipation in covishield than covaxin[4].

Amir Hussain et al used Artificial Intelligence (AI) enabled approach to understand public sentiments on vaccine in the United Kingdom and United states. In order to understand sentiment trends and to predict average sentiments, the authors used Natural language processing and deep learning techniques. Their results showed 58%, 22% and 17% positive,

negative and neutral sentiments in United Kingdom compared to 56%, 24% and 18% in the United states[1].

Anjir ahmed chowdry et al used Naïve Bayes and Bidirectional Encoder Representations from Transformers (BERT) model to analyze the sentiment of Bangladesh people about the covid-19 vaccine. Their study results shows that BERT model is performing better when the data size grows when compared to Naïve bayes and they were able to achieve 84% accuracy when BERT algorithm was applied [2].

Liviu-Adrean Cotfas, Camelia Delcea et al analyzed the dynamics of the opinion regarding covid-19 vaccination using the twitter data. It was found that most of the tweets had neutral stance and the number of people who favoured vaccination surpasses the negative stance. Machine learning and deep learning techniques were employed in their work to select the best performing classifier [5].

Quyen G et al applied machine learning techniques to identify anti vaccination tweets in twitter data. They employed BERT method and Bi-LSTM method with machine learning techniques like Support vector machine (SVM) and Naïve Bayes. Their study revealed that the performance of BERT method is better than the other methods they employed [6].

Jim Samuel et al analyzed the efficacy of machine learning classification methods when tweets are of varying length. It was observed that the ML algorithms perform better when tweets are of shorter length as compared to tweets with longer length [7].

Twitter sentiment analysis on coronavirus was performed using the logistic regression method by Cristian R Machuca et al and got classification accuracy of 78.5% [8]. In the research work carried out by Pristiyono et al in Indonesia about covid-19 vaccine, number of negative tweets was high when comparted to positive tweets [9]. Yen Der Li et al discusses recent progress and potential challenges of vaccine development [10]. Vishal A karde and S S Sonawane discussed challenges in handling twitter data for opinion mining [11]. Sudheer kumar singh et al used text blob which makes use of Naïve bayes algorithm to analyse opinion about coronavirus [12]. Fast and accurate sentiment classifier model using enhanced Naïve Bayes classifier was built by vivek narayanan et al and they deployed the same for the movie review with accuracy of the classifier more than 80% [13]. In the research work carried out by Adarsh M J et al, they studied the various approaches involved in analysing twitter data using opinion mining [14]. Bo Pang and Lillian lee employed maximum entropy method for sentiment classification and achieved better accuracy. They also brought out the factors that makes the sentiment classification more challenging [15].

In this research work, to analyze the people sentiment about the two covid-19 vaccine administered in India, logistic regression and Naïve Bayes model is used on twitter data.

III. MACHINE LEARNING TECHNIQUES

Machine Learning is an Artificial Intelligence task that allows computers to build applications based on training data and improve their accuracy over time without the need to program. An algorithm in data science involves set of sequential processing steps. Machine learning algorithms are used to find patterns in data and helps in decision making. For this purpose, machine learning algorithms are “trained” to find patterns and predictions in new data. The better the algorithm, more accurate will be the result. The decisions and predictions will

become more accurate as it processes more data. As more and more powerful and complex algorithms are being built by the data scientist on the ever-growing big data, machine learning will help us to bring greater efficiency in every walk of our life.

Steps involved in building machine learning applications:

- Identify training data set
- Select an algorithm to run on training data set
- Create Model based on the trained algorithm
- Deploy the model and check its accuracy

IV. THE PROPOSED METHODOLOGY

In this research work, the research is carried out in two phases. In Phases 1, the tweets from twitter data are analysed using machine learning techniques like Logistic regression and Naïve Bayes theorem. Phase 2 of this research work aims to analyze how sentiment changes over a period of time. For this purpose, tweets collected over several months are analysed using a python package called VADER.

PHASE 1: Machine Learning Techniques for Sentiment Analysis on Text Data.

Sentiment analysis is also known as opinion mining or emotion AI, that helps to do text classification by analyzing the input text data and determines the text polarity. Polarity is the emotion expressed in the sentence. It lies in the range of [-1,1] where -1 means negative and 1 means positive sentiment. Many algorithms exist that can train machines to perform sentiment analysis. Figure 3 shows the process of classifying tweets from two machine learning algorithms Naïve Bayes and Logistic regression respectively.

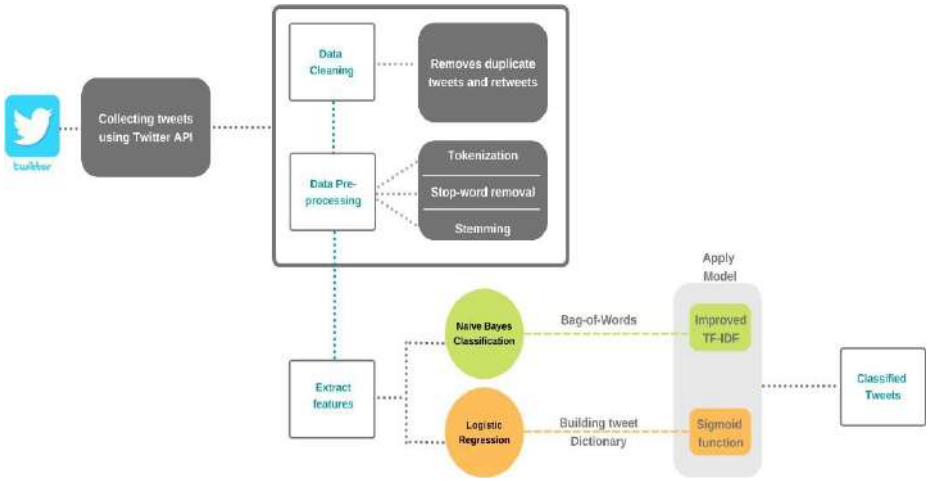


Figure 3: Tweet classification using machine learning algorithms

In this research work, 700 tweets are extracted from twitter data to analyze public's sentiment about covid-vaccine. Machine learning algorithms described below helps to classify tweets into positive and negative tweets. Certain processing steps to be followed for both the algorithms before applying the model and they are listed below:

(i) Collecting tweets from twitter API

Twitter API account is created and API Key & access key are generated. Authentication to access twitter data is obtained using tweepy package. Twitter data extracted with user name, location, id, tweet text, date and hashtag.

(ii) Data Cleaning

Irrelevant and duplicate information for analysis is removed from tweet data. During this process hashtag, URLs, retweets are removed. Table 1 shows the necessary library files to be imported from python for pre-processing task.

(iii) Pre-processing

- **Tokenization:** Convert the strings into words using tokenization.
- **Stop word removal:** Stop words are those words that does not convey any meaning to the model and also accuracy of the model is not affected by removing them. Remove stop words like is, and, the, in, on etc in the tweet
- **Stemming:** Stem the word to its root, words are stemmed to its root in order to reduce the vocabulary size. Stemming is done using Porter Stemmer.

Table 1: Code to pre-process tweets

```
import re
import string
from nltk.corpus import stopword
from nltk.stem import
PorterStemmer
from nltk.tokenize import
TweetTokenizer
import numpy as np
```

(iv) Apply Model

1. Sentiment Analysis Using Naïve Bayes

Naïve Bayes is a supervised learning algorithm based on Bayes theorem, that follows the naïve assumption which says variables are independent of each other. It is a predictive algorithm that makes prediction based on the probability of the object. The Bayes theorem is based on the conditional probability; it means the likelihood that event(A) will happen, when it is given that event(B) has already happened. The equation for Bayes theorem is given as:

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)} \text{ ---------- } (1)$$

Naïve bayes can be used for sentiment analysis classification, to check the probability that a given word or phrase can be considered positive or negative. Machine learning models that are trained for word polarity, the likelihood that a given word, phrase or text is positive or negative can be calculated with Naïve bayes algorithm. The predictive accuracy of Naïve bayes can be

improved with techniques like lemmatization and Term Frequency and Inverse Document Frequency (TF-IDF). In this research work, Improved TF-IDF is used in order to improve the accuracy of the classification of tweets into positive and negative.

Polarity of the tweet is calculated through a word weight using TF-IDF. The positivity and negativity of the word is calculated based on number of times the word occurs in given tweet dataset. The TF-IDF is executed on all words in the dataset to find the rank of each word. A high rank in TF-IDF shows the word is relevant in given tweet and can contribute much to the polarity of the tweet.

The overall approach works as follows: Given a Data Set D, a word w, and an individual tweet (dt), dt∈D,

we calculate:

Improved TF-IDF = ft, dt* log (|D| /ft+s, D) -------- (2)

Where ft, ds equal the no. of times word w appears in ds1.

|D| is the size of the Data set, and f t+s, D equals the number of tweets in which the word w and its corresponding synonym word appears in D. For each word in the term data, the corresponding synonyms are fetched from word dictionary. Synonym are considered to be the words equivalent to the original word and hence taken for the calculation of f t, D. Set of words that are extracted using Improved TF-IDF are used to judge the polarity of the tweet.

2. Sentiment Analysis Using Logistic Regression

In Logistic regression, a given text, can be represented as an array of dimension V, where V represents vocabulary size[19]. In this research work, we extract tweet from twitter API and proceed to apply logistic regression model to determine the polarity of the tweets. Data cleaning and pre-processing steps explained above will be done before applying logistic regression.

Building Frequency Dictionary:

Training set is divided into positive and negative tweets. Frequency of every word in the text are extracted and python frequency dictionary is created with positive and negative tweet. For every tweet, sum of all positive and negative frequencies is created. Algorithm in Table 2 shows the step-by-step process in predicting the tweets using logistic regression. Sigmoid function (h) in equation 3 is used in logistic regression, to find the value between 0 and 1 for the classifier.

$$z = \theta_0 + \theta_1 * x_1 + \theta * x_2$$

$$g(x) = \frac{1}{1 + e^{-x}}$$

$$h = g(z) = \frac{1}{1+e^{-z}} \quad \text{----------(3)}$$

Table 2: Algorithm to perform logistic regression from tweet data

Algorithm

1. Create account and initialize Twitter API
2. tw-data ← tweet API( ) // Extracts tweets from twitter data (tw_data)
3. Prepare the data into training and test data
   tr_data ← (tw_data) // training data
   tst_data ← (tw_data) // test data
4. ***w1← process_tweet(tweet)*** // pre-process tweets, Tokenise the tweet into individual words, remove stop words and apply stemming
5. *extract_feature(tweet, freq)* // Extract features
   P_tweet ← Number of positive words in a tweet
   N_tweet ← Number of negative words in a tweet
6. Apply sigmoid function to get the value between 0 and 1
7. Apply cost function and gradient for logistic regression to show the average log loss across all the training samples.
8. Test the classifier on a validation set taking single tweet at a time
9. **For each word in w1, do the following:**
If key(word,1.0) then count positive // Check the frequency dictionary for the count
If key(word,0.0) then count negative
10. **x ← extract_feature(tweet,freq)** // captures all features for all training examples in matrix x.
11. **predict_tweet(tweet,freq,theta)** // To make predictions on each test set

Table 3: Partial Code for tweet Prediction

```
def predict_tweet(tweet, tweet_freqs, theta):
   '''
   Input:
      tweet: a string
      tweet_freqs: build dictionary to record the frequency of each tuple with (word,
label) pair
      theta: (3,1) vector of weights
   Output:
      t_pred: the probability of a tweet being positive or negative
   '''
   # tweet features are extracted and stored it into matrix m
   m = extract_features(tweet, tweet_freqs)
   # predictions are made using m and theta
   p_pred = sigmoid(np.dot(m,theta))
  return p_pred
```

A. PHASE 2: Sentiment Analysis using VADER

Valence Aware Dictionary and sEntiment Reasoner (VADER) model is a python package that supports natural language processing (NLP) with pre-trained models. This tool is aimed at providing sentiment analysis of text taken from social media network. It is a lexicon and rule-based sentiment analysis tool. While analyzing text data, it uses a bag of words approach with simple heuristics. Scores given by VADER ranges from [-1,1] most negative to most positive and score for neutral sentiment is set between [-0.05 – 0.05] [20]. Figure 4 shows the step-by-step process involved in determining the polarity of tweets using VADER.

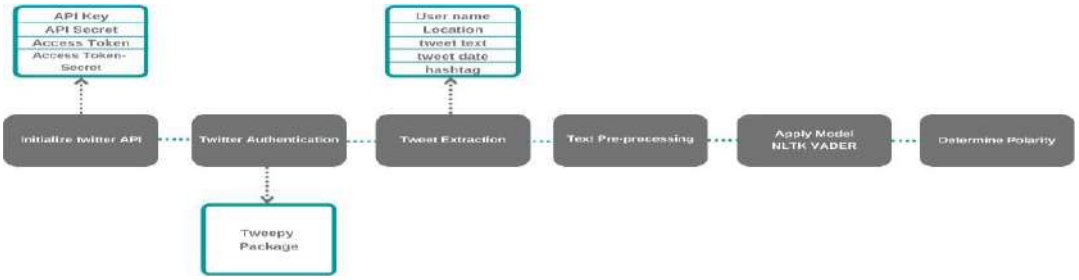


Figure 4: Flow diagram for Sentiment Analysis using VADER

Table 4: Sample tweets taken from Twitter

	Unnamed: 0	tweet_id	tweet	favorite_count	retweet_count	created_at
0	0	1.395310e+18	rt ashrestha my friend recently lost his fathe...	0	2	Thu May 20 09:16:00 +0000 2021
1	1	1.395310e+18	rt jaykotakone in april india was vaccinating ...	0	286	Thu May 20 09:15:57 +0000 2021
2	2	1.395310e+18	rt vaccinologist sinovacs coronavac amp oxford...	0	163	Thu May 20 09:15:57 +0000 2021
3	3	1.395310e+18	and slots on at apollo hospital covishi...	0	0	Thu May 20 09:15:54 +0000 2021
4	4	1.395310e+18	rt biorevaccine on covishield available for ...	0	1	Thu May 20 09:15:52 +0000 2021
...	...	...	...	...	...	...
495	495	1.395290e+18	iunevmh aaahshar should i wait for vsnutnikndi	0	0	Thu May 20 07:53:23 +0000 2021

Table 5: Coding snippet to check polarity of tweets

```
pos = 0
neg = 0
neu = 0
for tweet in searched_tweets:
    analysis = TextBlob(tweet.text)
    if analysis.sentiment[0]>0:
        pos = pos +1
    elif analysis.sentiment[0]<0:
        neg = neg + 1
    else:
        neu = neu + 1
print("Total Positive = ", pos)
print("Total Negative = ", neg)
print("Total Neutral = ", neu)
```

```
Total Positive =  208
Total Negative =  44
Total Neutral =  248
```

V. PHASE 1: EXPERIMENTAL RESULTS

During phase 1 of this research work, 700 tweets were extracted from twitter and they are given as input to the model after data cleaning and pre-processing. Machine learning techniques employed in this study are binary classifiers. They classify the given tweet into positive and negative tweet. 700 tweets are given as input to the machine learning classifier algorithm. From the implementation results of both the classifiers, it is observed that Naïve bayes classifies 69% of the tweets as positive and 31% of the tweets as negative. Whereas Logistic regression classifies 72% of the tweets as positive and 28% of the tweets as negative.

The performance of both the algorithms are evaluated in terms of precision, recall and accuracy. Accuracy is based on precision and recall values. It is observed that accuracy of Logistic regression is high compared to Naïve Bayes. So, the binary classification made by Logistic regression can be taken as final result. Both the classifiers proves that public has more positive sentiment than negative sentiment towards vaccine.

Table 6: Performance Measure

Measure	Formula	Meaning
Precision	words found and correct / Total word found TP/(TP+FP)	Precision can be defined as the fraction of retrieved categories that are relevant
Recall	words found and correct / Total words Correct TP/(TP+FN)	Recall is the fraction of relevant categories that are retrieved
Accuracy	(TP+TN) / (TP + TN + FP + FN)	The percentage of predictions that are correct

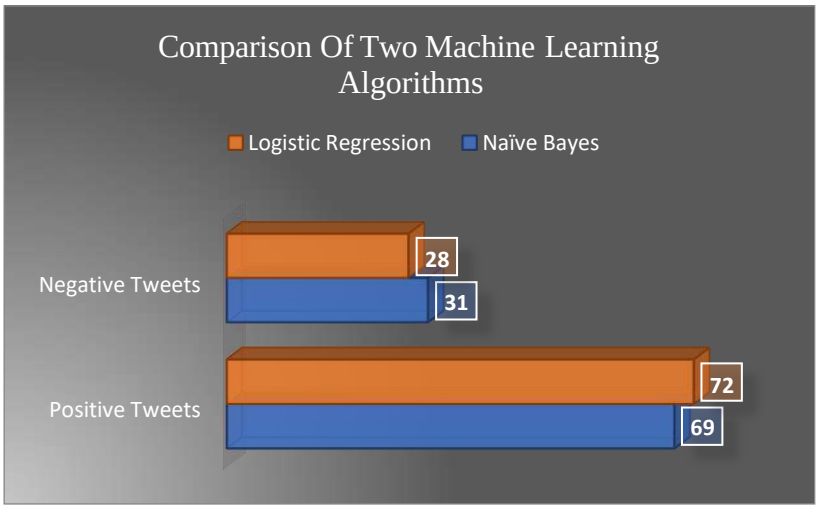


Figure 5: Comparison of Tweet Classification between two algorithms

Table 7: Performance Evaluation of Machine Learning Algorithms

ML Model	TP	FP	FN	TN	Precision	Recall	Accuracy
Logistic Regression	17	44	31	403	0.279	0.354	0.848

Naïve Bayes	48	27	52	357	0.640	0.480	0.837

VI. PHASE 2: EXPERIMENTAL RESULTS

As both the machine learning algorithms used in this work can only provide binary classification, in order to classify the tweets into positive, negative and neutral, NLTK VADER is applied to classify tweets. During this phase, 500 tweets were given as input for tweets related to Covaxin and another 500 tweets for the keyword Covishield. Figure 6 shows the polarity determination of tweets. Sentiment determination of Covaxin and Covishield is shown in figure 7. To understand how the people sentiment changes over a period of time, sentiment of people for a period of 5 months is observed and their results are shown in Figure 8. From figure 8, it is noted that negative tweets outnumbered positive tweets for a very short period between 15th march to 15th April, and then positive tweets again was in increasing trend. Generally, neutral tweets are higher in all the five months.

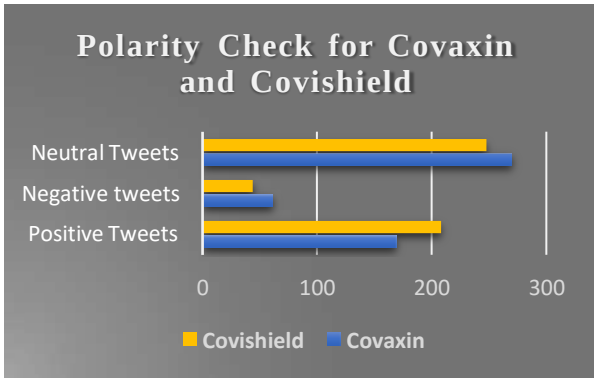
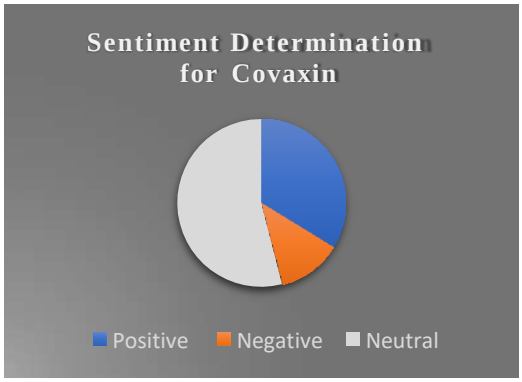


Figure 6 : Polarity check for Covaxin and Covishield using VADER



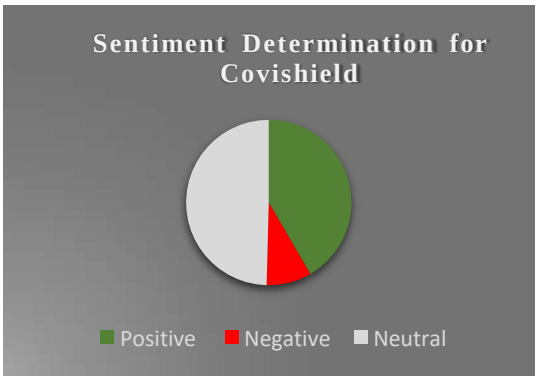


Figure 7: Sentiment Determination for Covaxin and Covishield

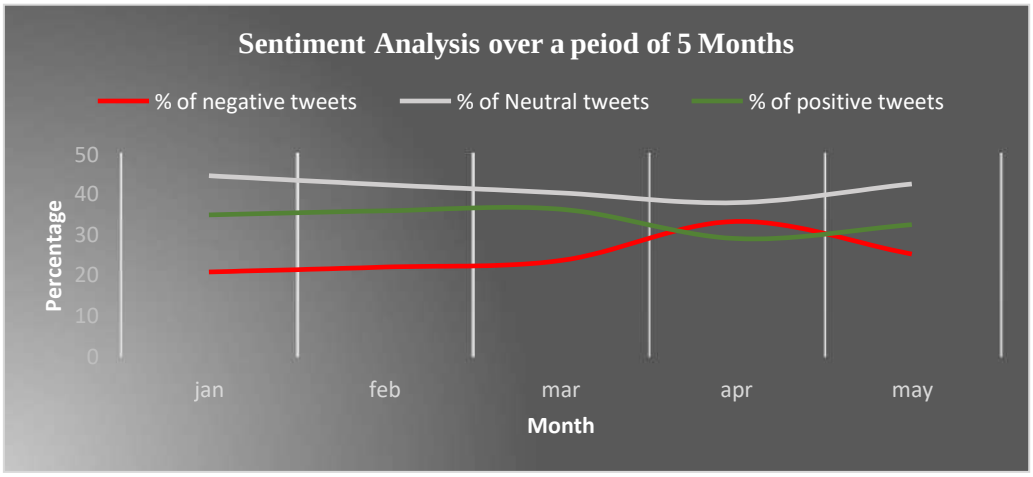


Figure 8: Sentiment Analysis for Covid-19 Vaccine over a period of 5 Months

VII. CONCLUSION

Understanding public sentiments towards the covid-19 vaccine is essential because necessary steps can be taken by the government and public health organization to ensure that everyone knows the importance of vaccines and take the covid-19 vaccine at appropriate time. Covid-19 vaccine develop an immune response to the SARS-Cov-2 virus, and provide protection against the disease. By administering the vaccine, immunity can be developed which reduces the risk of developing the disease and its adverse effects. During phase 1 of this research work, Machine learning algorithms like Naïve Bayes and Logistic regression, a binary classifier which classify tweets from twitter data into positive and negative tweets is used. The results help to predict the public sentiment towards the vaccine and it is understood from the experimental results that most of the people have positive perception about the vaccine.

Phase 2 of this research work was carried out using NLTK VADER, the data used in this phase is a random sample of live Twitter tweets containing particular keywords like Covaxin and Covishield. Furthermore, we present an analysis on the sentiments of the people in terms of positive, negative and neutral tweets. From the experimental results, it is observed that neutral tweets outnumbered positive and negative tweets and positive tweets is always higher than negative tweets in terms of both the vaccine Covaxin and Covishield. Also, the sentiment of people towards vaccine over a period of 5 months is observed and the result shows very few percentage of people have negative perception about the vaccine though negative tweets outnumbered positive tweets during a certain period of time. These results help to reduce reluctancy towards administration of vaccine by people and foster the public trust in immunization thereby helping the nation to come out of the pandemic.

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A STUDY ON THE EMPLOYEE ENGAGEMENT PRACTICES ON THE EMPLOYEE'S MENTAL AND EMOTIONAL WELL BEING

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ABSTRACT

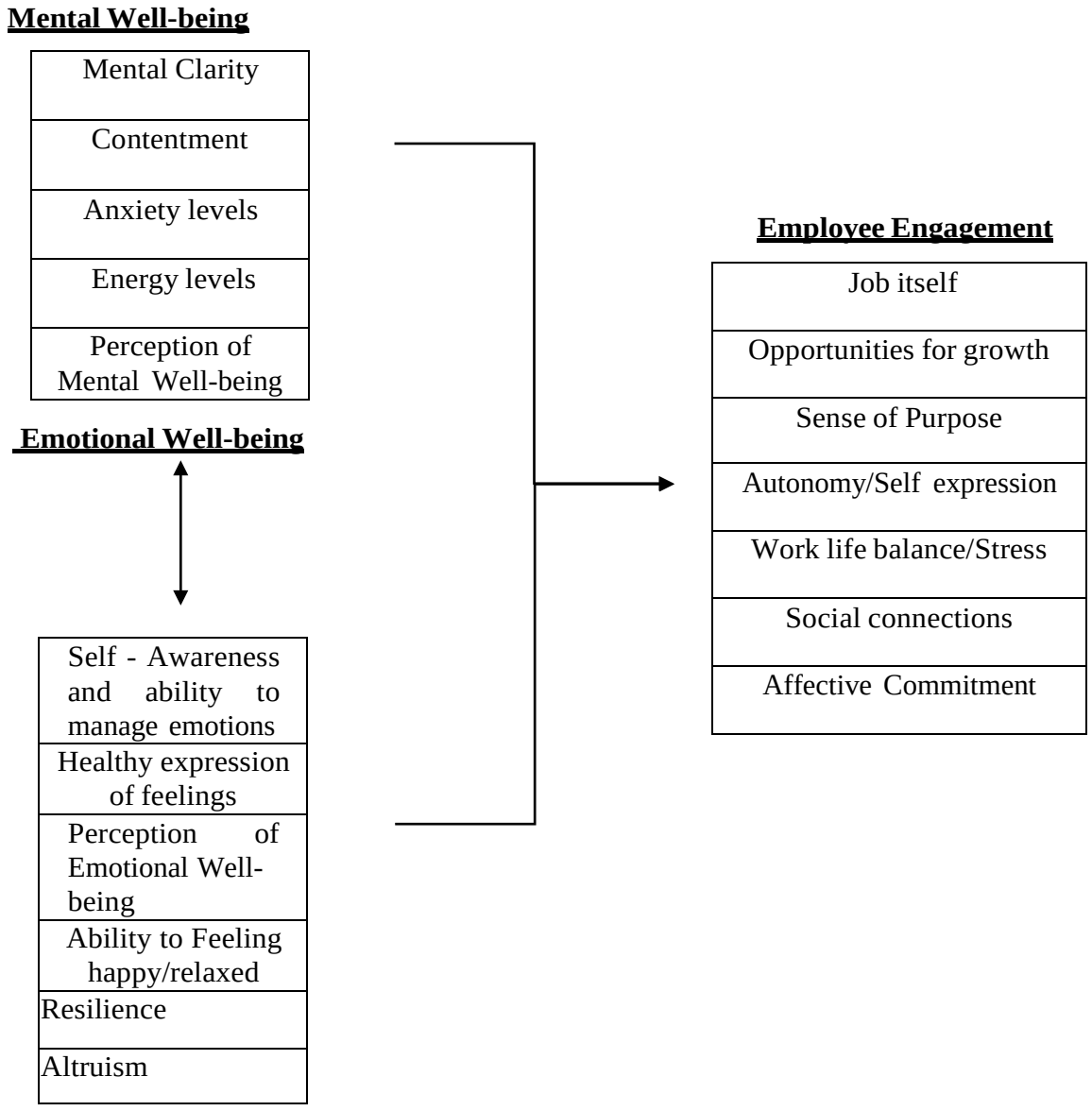
The utmost precedence of any organization has to inevitably focus on the well-being of its employees. Various research studies opined the adversative effect of deprived employee engagement practices on the productivity and efficiency of the employees. The main objective behind this research paper is to understand the relationship between employee engagement practices and its significant impact on mental and emotional wellbeing of its employees. A sample size of 71 respondents from Chennai based IT sector employees were administered to test and analyse the variables of the study. The results of the study indicated the existence of strong relationship between employee engagement to mental and emotional well-being of its employees. ANOVA results revealed that there is a significant influence between Age and anxiety, Gender and Ability to manage stress and type of person and Employee Engagement. The factor analysis model supported to 42.8% for the components of Emotional well being and 60.66% for the components of Employee Engagement. The study further suggested flexible working hours, workplace counseling, planned vacation and mindfulness programmes to improvise on the employee engagement practices.

Keywords: Mental Well-being, Emotional Well-being, Employee Engagement, Productivity.

I. INTRODUCTION

A happy employee is more productive and they are the valuable asset for the company in the long run. Emotional well-being refers to an individual's ability to manage their emotions and deal with life's situations. Higher the emotional well-being means the individual is better able to understand and manage their emotions. The World Health Organization in its Geneva report (2004) defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to makeacontribution to his or her community". Employees who feel their employer cares about their mental and emotional wellbeing are more likely to be motivated, engaged and are less likely to leave the organization. The employers focus on the health and well being of their employees will improve to retain the talented employees, attract good talent, increase in productivity, enhances creativity and memory of the employees, and reduces the more sick leaves and helps to engage the employees effectively and efficiently. Today the employers started realized that helping employees to maintain their health and well being is the crucial factor for increasing productivity and to keep the employees engaged intact. An unhappy and emotionally ill employee can cause conflicts among them and group cohesiveness gets hampered. According to the Gallup Organization: "The term employee engagement refers to an individual's involvement and satisfaction with as well as enthusiasm for work" (Harter, Schmidt and Hayes. 2002). Employee engagement depends on the individual and the organization's practices. An individual's psychological well-being, physical health, perceptions, attitudes, etc. affect their engagement levels at work. So does an organization's culture, their employee engagement activities, pay structure, and so on. Hence the researcher made an attempt to study on the relationship between emotional and mental well being and its impact on engagement level of the employees.

Conceptual Framework:



The model depicts that Mental Well-being and Emotional Well-being go hand in hand and in great way influence one another. If the employees are emotionally and mentally stable, the employees in the organization are effectively engaged in their job.

II. NEED FOR THE STUDY

Mental and emotional health of an individual affects all aspects of their lives as well their work life in terms of their productivity, absenteeism, commitment to the organization, engagement levels, and retention. Emotional wellbeing and mental well being of employees should be the top priority of a company's wellness programs. Employees must feel comfortable to open up their concerns and the company must take suitable actions helping them to deal with it. A lot of previous research papers focused on overall psychological health and little research on emotional and mental well being. . An organization's most valuable assets are its people. Moreover, highly engaged employees are crucial for an organization to perform its best. Hence the researcher made an attempt to explore the relationship between emotional and

mental well being and its impact on employee engagement.

III. OBJECTIVES OF THE STUDY

- To study the personal profile and occupational profile of the sample respondents
- Tounderstandtherelationshipbetweenemployees'MentalandEmotionalWell-being
- To study Mental and Emotional Well being on the level of Employees Engagement
- To suggest measures for improving Employee Engagement levels through improving Mental and Emotional Well-being of employees.

IV. REVIEW OF LITERATURE

Shane Crabb (2011) "the use of coaching principles to foster employee engagement", stated that performance depends on many variables including employee engagement and well-being. He talks about the importance of 'managing emotions' and being self-aware of one's thoughts, feeling andemotions. He further emphasized that employees need to develop the right mindset for engagement by managing emotions and focusing on the task without being distracted.

Pooja Yadav (2020) in the article "the relationship between Employee Engagement and Psychological well-being", stated that if the employee is psychologically well and satisfied then the employee is fully engaged in their work.

RESEARCH DESIGN:

The researcher had adopted the descriptive research design.

Sampling Technique:

Convenient sampling method was adopted to select 71 respondents from the IT sector.

Tools used for Data Collection:

The questionnaire was used for data collection. It consists of two parts. Part one consists of personal questions, and the second part consists of question to measure the Emotional, Mental well being and Employee Engagement. It was arbitrary scales developed by the researcher, with responses such as strongly disagree, and disagree, Neutral, agree, and strongly agree. The responses were assigned values as 1, 2,3,4,5 respectively for positive statement and for negative statement the values are reversed.

Reliability test

No of items	Cornbach's Alpa
12	0.851
12	0.861
27	0.941

In the above table, it is observed that the Cronbach's Alpha scale value is 0.851, 0.861 and 0.941 for the items in the questionnaire for mental well being, emotional well being and employee engagement

respectively and is found to be reliable.

Demographics:

Demographics of respondents are given in terms of Gender, age, Marital Status, Department, Type of family and Personality. As for the Gender of respondents, 57.7 percent were women and the remaining were men. As for the ages of the respondent 76.1 percent were less than 30, followed by the second highest group with 10 percent(31- 40). 66.2 percent of respondents were single and the remaining was married. As for the Department of the respondents, 39.4 per cent belongs to IT department followed by HR department. 49.3 percent of the respondents are Ambiverts, followed by the respondents who were Introverts (31 percent)

Association between age and feeling overwhelmed by the events in life

Test	Value	df	Asymp. Sig. (2-sided)
PearsonChi-Square	23.228[a]	12	0.026

In the above table, it can be observed that the Chi-Square value (23.228) for the association between age and feeling easily overwhelmed is significant (P ≥ 0.026). Hence, the Null Hypothesis (H0) is rejected.Further, it can be understood that respondents from the age group of 20-30 years (42.5%) felt easily overwhelmed when compared to those from the age group of 50 -60 years (33%), and 40-50 years (25%)

Association between type of personand mental health and stability

Test	Value	df	Asymp. Sig. (2-sided)
PearsonChi-Square	20.550	8	0.008

In the above table, the Chi-Square value (20.550) for the association between type of person and mental health and stability is significant (P ≥ 0.008). Hence, the Null Hypothesis (H0) is rejected. Further it was observed that Extroverts (100%) were found to be more mentally healthy and stablewhen compared to Ambiverts (68%) and Introverts (54%).

Association between genderand ability to relax and Feel at peace

Test	Value	df	Asymp. Sig. (2-sided)
PearsonChi-Square	13.662	6	0.034

In the above table, the Chi Square value (13.662) for the association between gender and ability to relaxand feel at peace is significant (P ≥ 0.034). Hence, the Null Hypothesis (H0) is rejected. Further, it

is found that females (78%) were found to be more able to relax and feel at peace whencompared to males (55%).

Analysis of Variance between Gender and ability to handle stress

Status	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.15	2	2.575	4.041	0.022

In the above table, the F value (2.575) for the mean difference in gender and the ability to manage stress issignificant (P ≥ 0.022). This proves that Gender influences the ability to handle stress. Further, it is found that Females were more able to handle stress when compared to Males.

Analysis of variance between type of Person and Employee Engagement

Status	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.041	2	1.521	4.851	0.011

From the above table, the F value (1.521) for the mean difference in the Type of Person and Employee Engagement is significant (P ≥ 0.011). Further, Extroverts were found to have higher Employee Engagement levels.

Correlation between Mental well-beingand Emotional well-being

Correlation	Mental Well - being	Emotional well-being
Mental Well being	1	0.745**
Emotional Well being	0.745**	1

From the above table, it is observed that the correlation coefficient is 0.745, indicating the existence of a strong positive correlation between Mental Well-being and Emotional Well-being.

Correlation between Mental well-beingand Employee Engagement

Correlation	Mental Well - being	Employee Engageemnt
Mental Well being	1	1.000**
Employee Engagement	1.000**	1

From the table it is inferred that there is a strong positive correlation between Mental Well-being and Employee Engagement.

Correlation between Emotional well-being and Employee Engagement

Correlation	Mental Well - being	Emotional well-being
Employee Engagement	1	0.745**
Emotional Well being	0.745**	1

The table predicts that there is a strong positivecorrelation between Emotional Well-being and Employee Engagement.

Factor Analysis for the Components in Emotional Well-Being

Total Variance Explained		
	Initial Eigenvalues	Extraction Sums of Squared Loadings

Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.134	42.786	42.786	5.134	42.786	42.786
2	1.422	11.853	54.64	1.422	11.853	54.64
3	1.053	8.775	63.415	1.053	8.775	63.415
4	0.904	7.534	70.949			
5	0.777	6.473	77.422			
6	0.605	5.045	82.467			
7	0.548	4.565	87.032			
8	0.448	3.737	90.769			
9	0.383	3.188	93.958			
10	0.357	2.977	96.935			
11	0.197	1.642	98.576			
12	0.171	1.424	100			

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Component Matrix

Factors	Component		
	1	2	3
Priority given to emotional health	0.632	0.289	-0.327
Self-awareness	0.56	0.441	-0.246
Ability to express feelings with ease	0.537	0.593	-0.149
Ability to manage and control emotions	0.717	-0.435	0.214
Feeling joyous and happy	0.829	-0.052	-0.018
Unable to control anger and regretting it later	0.354	-0.438	-0.451
Experiencing the entire range of emotions	0.29	0.543	0.564
Altruism	0.676	-0.002	-0.12
Feeling good about oneself	0.781	-0.162	-0.06
Ability to relax and feel at peace	0.729	-0.274	0.294
Resilience	0.669	-0.115	0.425
Perception on emotional health	0.823	0.012	-0.107

To explore the factors of Emotional Well-being, the questionnaire was administered and 12 dimensions have been identified. The Factor Analysis has supported the model up to 42.786% for the present study. The dimensions which influence a person's Emotional Well-being to a large extent are 'feeling joyous andhappy', 'perception on emotional health', 'and feeling good about oneself ',' ability to relax and feel at peace ',' ability to manage and control emotions' and 'altruism.'

Factor Analysis for the Components of Employee Engagement

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.853	60.658	60.658	4.853	60.658	60.658
2	0.901	11.264	71.922			

3	0.65	8.125	80.047			
4	0.507	6.332	86.378			
5	0.331	4.133	90.511			
6	0.32	3.996	94.507			
7	0.247	3.088	97.594			
8	0.192	2.406	100			

Component Matrix	
Factors	Component 1
Job Itself	0.849
Opportunities for growth	0.82
Feeling a sense of purpose	0.826
Autonomy at work/self-expression	0.825
Work life balance/Stress	0.549
Social connections at work	0.69
Communication	0.784
Affective commitment	0.84

To explore the factors of Employee Engagement, the questionnaire was administered and 8 dimensions have been identified. The Factor Analysis has supported the model up to 60.658% for the present study. The dimensions which influence Employee Engagement to a large extent are the 'Job itself', 'Affective Commitment', and 'Feeling a sense of purpose ','Autonomy at work 'and' Opportunities for growth.

V. RESULTS AND DISCUSSIONS

Majority of the respondents (76.1%) are from the age group of 20-30 years. 57.7% of the respondents are Female. 66.2% of the respondents are Single. Majority of the respondents (57.7%) are Post graduates. 39.4% of the respondents belong to the IT department. Regarding their income, majority of the respondents (50.6%) earn between 15k -25K per month. On rating of the type of person the respondent considers themselves to be a m b i v e r t s . There is a significant relationship between Age and Feeling of easily overwhelmed, Type of person and mentally health and stability and Gender and the ability to relax and feel at peace. There is a significant influence between Age and Feeling anxious on a daily basis, Gender and Ability to manage stress and type of person and Employee Engagement. There is a strong positive correlation between mental, emotional well being and employee engagement. The factors which influence Emotional Well-being to a large extent are being a joyous and happyperson, perception on emotional health, feeling good about oneself, ability to relax and feel at peace, ability to manage and control emotions and contributing to others happiness and well- being and the factors which influence Employee Engagement to a large extent are the Job itself, affective commitment feeling a sense of purpose, autonomy at work and opportunities for growth.

VI. SUGGESTIONS

Availability of workplace counseling facilities for all employees. Culture of trust and openness. Employee bonding programs and group activities must be encouraged as it leads to enhanced group cohesiveness. Flexible working hours, Encouraging the employees to take planned vacations, employee assistance programs, showing empathy and recognitions, practice of mindfulness , rewards and recognition programs for the dedicated efforts and contribution has an impact on an employee's

stress levels and can lead to better work-life Balance , which in turn makes the employee feel happy and get actively engaged in the organization.

VII. CONCLUSION

Organization must realize that spending on Employees well being is not a cost but only a great investment as the well being is necessary to for the purpose of individual as well as organizational benefits. It is crucial that organizations to takemeasures to enhance and develop strong mental and emotional health on their employees as they are considered to be most valuable assets. Only employees who are mentally and emotionally healthy and stable, can contribute and give their best at their workplace.

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A STUDY ON STUDENTS-SUPPORT & PROGRESSION OF QUALITY MANAGEMENT OF COLLEGES OF EDUCATION IN KARNATAKA*

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ABSTRACT

Quality is an elusive concept. The quality of education is a result of collective effort of all stakeholders in teacher education, which includes the state, the society, the employer, parents, the management, teachers and students. Among the stakeholders the students are the primary stakeholders and all quality measures, which are to be benchmarked against the student interests. This is the student-centric approach to quality. The focus is on student satisfaction like consumer satisfaction and competition as a drive of excellence. The democratic approach Education is viewed as a social process and student is considered as a participant in the process of knowledge creation and use. The focus is more on student-teacher partnership in the learning process. We consider democratic approach is more appropriate to the present content. The enthusiasm of students is not equally shared by all participants. There are many voices of caution expressed, particularly by educational administrators. One of the presentations on the findings of the study of opinions of teachers on student participation is very revealing. A majority of teachers, who participated in the survey, are skeptical of any positive contributions of student participation in quality enhancement. The present research falls under the purview of quantitative research and hence quantitative methods, such as data collection, analysis, comparison, tabulation and illustration, are used. Among 48 randomly selected colleges of education, I received replies from 19 colleges of education only, and the same data are taken for granted for analysis.

Key Words:*Student-centric approach, Teacher education, Democratic approach*

I. INTRODUCTION

Students-support and involvement in the quality enhancement processes of their academic life yields substantial personal returns on their investment of time and effort during their learning phase, besides creating an enduring bond with their institutions in later life. It is of immense value in the maturation process of young minds, leading to leadership traits and responsible behaviour. The prestige of the institution is continuously advanced, by the quality of its graduates. The prospects and constraints in involving students in quality enhancement need deeper examination in the Indian context. When we speak of the stakeholders of the education system, the students hold the highest stake in enhancing the quality of teaching and learning processes. Their entire future will be at stake if the education system does not prepare them adequately for the emerging situation in life. Starting as learners, they continue to sustain an emotional bond with their institutions, provided their experiences during the learning phase were fulfilling. They would cherish the fond memories of their teachers, facilities and support systems. On the other hand, they would like to forget their experiences in a poor quality institution as a bad dream.

Enhancing quality is a holistic process. The synergistic relationship among the students, teachers, management, parents, public, government and the production system essential to achieve an enduring multiplier effect on quality enhancement. Isolated efforts in improving the

quality of a few selected components of the education system such as the infrastructure, teacher training, research funding or industry participation would be of limited value. Quite often the wholesome participation of student is neglected in favour of other components. Bringing students to the core of the quality enhancement process would stimulate the synergy with all other components.

II. OBJECTIVES OF STUDY

- To assess the differences between four regions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to component of total quality management i.e. institutional information about Student support & progression, functioning about Student support & progression scores of colleges of education in Karnataka

III. HYPOTHESIS OF THE STUDY

- There is no significant difference between four divisions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to institutional information scores about Student support & progression of colleges of education in Karnataka.
- There is no significant difference between four divisions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to functioning scores about Student support & progression of colleges of education in Karnataka.

IV. METHODOLOGY OF THE STUDY

- For the present study, survey and comparative method was used as research method for collecting information.
- **SAMPLE:** In the present study, the sample was selected from all the 49 assessed and accredited colleges of teacher education in Karnataka state. For this purpose the 19 colleges of education were selected randomly from four divisions of Karnataka. All the selected colleges were recognized by NAAC and NCTE.
- **TOOLS USED TO COLLECT DATA:** Students-support & progression scale was developed by the investigator on various dimensions of quality education of colleges of education. Validity and reliability were established for the scale. The Rating scale was developed to measure the quality management in colleges of education. The Rating scale was framed on the basis of objectives of the study.
- **STATISTICAL TECHNIQUES USED:** The appropriate statistical tools have been used such as simple mean, standard deviation, median, Inter quartile range (IQR), Non-parametric Kruskal Wallis analysis of variance and the Karl Pearson's correlation coefficient and other relevant statistical tests.

V. ANALYSIS AND INTERPRETATION

- **Hypothesis:01:**There is no significant difference between four divisions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to functioning scores about Student support & progression of colleges of education in Karnataka

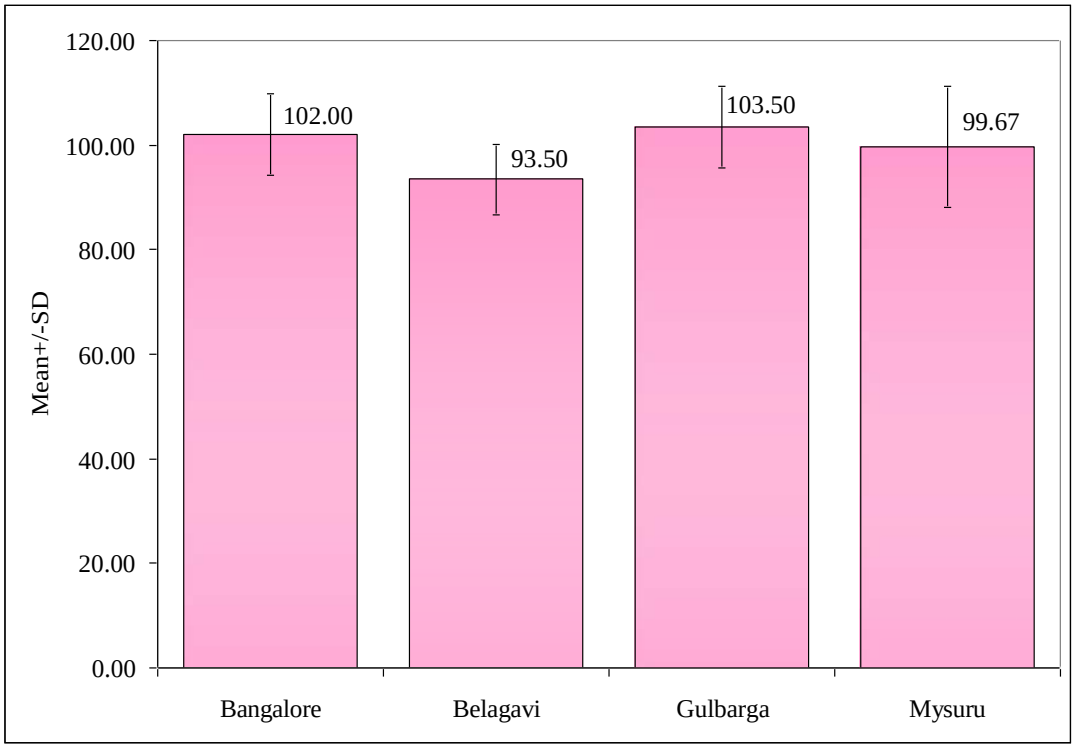
  To test the above null hypothesis, the non-parametric Kruskal Wallis ANOVA test was performed and the results are presented in table given below.

- **Table:01:**Results of Kruskal Wallis ANOVA between four divisions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to Student support & progression i.e. functioning scores of colleges of education in Karnataka

Divisions	**Mean**	**SD**	**Median**	**IQR**
Bangalore	102.00	7.78	106.00	4.50
Belagavi	93.50	6.75	90.50	6.00
Gulbarga	103.50	7.78	103.50	5.50
Mysuru	99.67	11.55	104.50	9.50
Total	98.74	9.02	101.00	7.75
H-value	4.2410			
P-value	0.2370			

The results of the above table reveal that, the mean±SD and median ± IQR of functioning scores about Student support & progression of colleges of education in Karnataka are 98.74±9.02 and 101.00±7.75 respectively. In which, the mean of functioning scores about Student support & progression is higher in Gulbarga division (103.50±7.78) and Bangalore division (102.00±7.78) as compared to lowest in Belagavi division (93.50±6.75) followed by and Mysuru division (99.67±11.55). The difference between four divisions is not found to be statistically significant (H=4.2410, p>0.05) at 5% level of significance. Therefore, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the mean of functioning scores about Student support & progression is similar in four divisions. The mean and SD scores are also presented in the following figure.

Figure: 01: Comparison of four divisions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to functioning scores about Student support & progression of colleges of education in Karnataka.

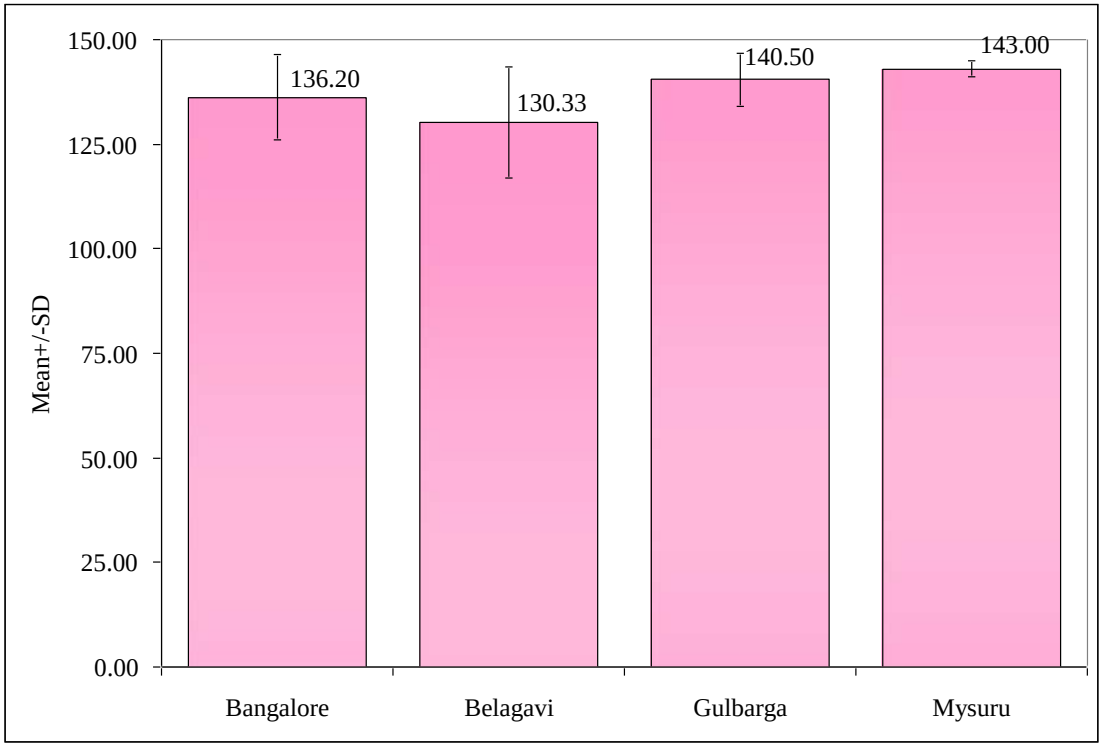


- **Hypothesis:02:**There is no significant difference between four divisions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to institutional information scores of Governance, leadership & management of colleges of education in Karnataka
  To test the above null hypothesis, the non-parametric Kruskal Wallis ANOVA test was performed and the results are presented in table given below
- **Table:02:** Results of Kruskal Wallis ANOVA between four regions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to institutional information scores of Governance, leadership & management of colleges of education in Karnataka.

Divisions	**Mean**	**SD**	**Median**	**IQR**
Bangalore	136.20	10.13	138.00	2.50
Belagavi	130.33	13.32	132.00	10.50
Gulbarga	140.50	6.36	140.50	4.50
Mysuru	143.00	2.00	143.00	1.50
Total	136.95	10.19	142.00	3.75
H-value	4.5480			
P-value	0.2080			

The results of the above table reveal that, the mean±SD and median ± IQR of institutional information scores of Governance, leadership & management of colleges of education in Karnataka are 136.95±10.19 and 142.00±3.75 respectively. In which, the mean of institutional information scores of Governance, leadership & management is higher in Mysuru division (143.00±2.00) as compared to lowest in Belagavi division (130.33±13.32) followed by Bangalore division (136.20±10.13) and Gulbarga division (140.50±6.36). The difference between four divisions is not found to be statistically significant ($H=4.5480$, $p>0.05$) at 5% level of significance. Therefore, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the mean of institutional information scores of Governance, leadership & management is similar in four divisions. The mean and SD scores are also presented in the following figure.

Figure: 02: Comparison of four regions (Bangalore, Belagavi, Gulbarga and Mysuru) with respect to institutional information scores of Governance, leadership & management of colleges of education in Karnataka.



VI. FINDINGS OF THE STUDY

- The mean of institutional information scores about Student support & progression is higher in Gulbarga division (105.50±4.95) and Mysuru division (105.17±6.27) as compared to lowest in Belagavi division (94.17±8.28) followed by Bangalore division (102.00±7.18). The difference between four divisions is not found to be statistically significant.
- The mean of functioning scores about Student support & progression is higher in Gulbarga division (103.50±7.78) and Bangalore division (102.00±7.78) as compared to lowest in Belagavi division (93.50±6.75) followed by and Mysuru division(99.67±11.55).The difference between four divisions is not found to be statistically significant.

CONCLUSION

- The mean of institutional information scores about student support & progression is similar in four divisions (Bangalore, Belagavi, Gulbarga and Mysuru)
- The mean of functioning scores about student support & progression is similar in four divisions (Bangalore, Belagavi, Gulbarga and Mysuru)

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ONLINE BRAND EXPERIENCE AND ITS IMPACT ON CUSTOMER ENGAGEMENT WITH SPECIAL REFERENCE TO BABY PRODUCTS

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Abstract

Businesses today are posed with many difficult challenges that make engagement with the customer more crucial than ever. The typical working of a business makes it difficult to achieve vigorous levels of consumer engagement. Perhaps the fundamental problem with the several different ideas that could promote consumer brand engagement for eg: branding to consumers, internal marketing i.e. within the company and service delivery is how to put these ideas together. The aim of this study is to investigate the online brand experience and its impact on customer engagement with special reference to baby products. For examine the engagement of the customer, the researcher has to examine its impact towards using baby care products. A model developed for this research purpose is applied to baby care products market. To test the research model Structural equation model approach is used. The study reveals that the effect of the engagement on online brand experience is giving greater results for capture the market in the study area.

Key words: *customer engagement; perceived value; brand experience; loyalty; service quality*

I. INTRODUCTION

When it comes to baby products they are expensive and companies are constantly developing newer and cutting edge products. Parents are constantly concerned worried about using the best product for their kids and are trying to do their best to keep their child safe and sound. But how do parents make the decision as to which product is really the best fit for the child and which one is just claiming to bet the best? Is it just guess work or does it take careful calculation of facts? Parents go through product websites, product reviews, consumer reports, blogs and even referrals to try and decide on the best product for their child. This is done because most first time parents generally are not aware of the differences in products and because they are concerned about the safety of their child, therefore first time parents are easily influenced by whichever medium they get their information from. This information could be highly logical and indisputable and unvaried such as durability of the product, safety rating etc or this information could be highly emotional with emphasis on aspects that are varied depending on the customer for eg: how soft/ hard a product feels or how the style matches modern home décor. The question then arises, are customers more influenced by products based on logic and facts or relating to emotional aspects.

Furthermore in the case of baby products brands are an important aspect to be considered while making purchasing decisions. Caudhuri and Holbrook modelled brand trust according to the functional quality of the product, highlighting the role of emotional expectations in the brand. From this perspective, trust is an outcome of the dimension of functionality. Delgado-Ballester and Munuera-Aleman (2005) suggested two dimensions of brand trust. The first being the technical or competing structure and determines its ability to fulfil the promises made and meet consumer needs while the second dimension relates to the brands intention or expectation to act sensitively for the welfare or comfort of the consumer. In the case of the first dimension Delgado-Ballester and Munuera-Aleman (2005) explains that trust is based on the assurance that the functional quality of a product is as expected. At this point it is the more emotional behaviour of parents relating to functional quality that highlights the importance of studies to understand the effect of brand trust in purchasing decisions.

1.1 More opportunities for consumer engagement as brands move online

Indian women have usually sought the guidance of their families, paediatricians as well as their friends on bringing up their children. But, with the advent of nuclear families, joint family has largely reduced. This can be inferred from the census data collected between 2001 and 2011, which show that households having five or more members grew only by 12%, while households having three or four members grew by 53%. In addition, Mintel research indicates that three out of four Indian women are duty-bound to only take care of their children full-time. However, the parents are still finding ways to strike a balance between work, taking care of their children, and household chores.

With revolutionizing technology and social media at one's fingertips, the absence of family and friends has not proven a large impact on growth. Parents can now resort to information on various topics such as pregnancy, birth, early childhood, etc. through online portals provided by start-ups such as Babychakra, Tinystep and Parentune. These portals also provide a platform for the parents to explore different services like playschools, doctors, day cares, event management, and breast milk donors.

There is an undiscovered potential for corporates and such online services merging, which, if tapped, can provide greater engagement to customers. Online forums and baby care brands can come together to find out the requirement of parents, and tailor their goods and services accordingly, which will in turn boost customization and help build word-of-mouth. In turn, these online forums can reach a larger target audience if they team up with a brand the consumers recognise. The Mintel Trend 'Bydeology' deliberates the different ways through which consumers identify themselves with companies on the basis of cultural and ideological values shared, as well as those which offer what is best for their babies.

On the contrary, the benefit of the aforementioned online portals is only utilized by those consumers who have access to the internet. Mintel Research suggests that 37% of Indian parents who have children below the age of five have accessed the internet inside the three months to June 2016. Baby care companies can assist these online portals expand

their services offline by working together, thereby benefitting the companies and the online portals. These offline services could be in the form of toll-free numbers to solve queries, creating a physical forum for discussion and deliberation, and distributing content on pamphlets. It wouldn't take much time to see the companies joining hands with online platforms to provide these offline services.

1.2 Factors influencing online customer engagement with satisfaction and loyalty

Online shopping conditions are majorly affected by cultural, social, personal, and psychological factors however; relevant factors show different characteristics in online shopping environment as compared to the past. This is because firstly the network through which consumers and retailers conduct online transactions bears significant risks. These risks have discouraging influence on consumers to attend online shopping. The present state of immature medium of payment and credit plus the means of online shopping have made safety or protection a major risk factor that influence online shopping. Secondly the protection of privacy of the consumers is also a significant concern.

The transmission of personal information of the users can easily be intercepted and could be used illegally. Due to personal privacy considerations a significant number of potential consumers are showing a wait and watch 'attitude towards online shopping. Thirdly, consumers' reviews also played an important role to affect consumers 'cognitive tendencies. In deep-rooted traditional shopping conditions such as clothes shopping, customers made shopping decisions after judging the products personally by using sensory abilities such as hearing, touching, tasting etc. but in case of online shopping only visuals are facilitated which affect the decision of purchase by a consumer.

Lastly, the computer of the consumer and the internet connection also affect online shopping. Studies have explained numerous factors that influence online purchasing activities. In this research, the conductor has summarized on those factors that have empirical evidences for their association with online shopping behaviours. Perceived usefulness reinforces the intention of an online shopper to continue suing a website. This is because if a person employs new information system it means that the person is willing to change previous practices and spend time plus efforts to use the technology. Customers may also continue to use a particular website just because it is useful though the customers are not satisfied with the product or service that was sold to the client.

II. REVIEW OF LITERATURE

Review of a variety of Literature from various sources was undertaken.

(Daniels, April 29, 2009) "Marketing strategies within the baby care product industry"
Upon research into the baby care market, it is inferred that the market is congested with product differentiation, and poses a difficulty for the consumer to identify the various brands. Therefore, marketers must help customers distinguish between the various brands and lead them to their required brand. P.K. Khicha, Benard Oyagi and Andrew S. Nysngau (2012) studied that the selection of baby care products is dependent upon their respective brand perception and brand equity in the market. This study suggested the use of different marketing communication tools to facilitate creation of brand perception and brand equity.

(Febrina Fitriyanti Tambunan, aug 2013) This paper aimed at identifying consumer perceptions and attitude towards baby care formula and their alacrity to pay for a product at its quoted price. The preliminary qualitative research was done through a focus group deliberation and sentence completion approach. The qualitative study was expected to corroborate the findings of the discussion. A total of 105 mothers with children between the age of 0 and 5 were given questionnaires, and the hypothesis was tested with multivariate analysis. The results of the same demonstrated that the growth benefit in a baby care formula is directly related to the willingness to buy that particular baby care formula. The mothers affirmed that albeit baby care formula is a substitute for breast milk for providing nutrition, and refuted claims made by advertisement that it leads to enhanced intelligence in babies. The indication made by this research is considered to be benefit a marketer in fathoming consumer preferences and their decision to purchase baby care formula.

2.1 Customer Engagement in Online Retailing

(S. Magesh, February 2018)**,** Customers are steadily moving towards shopping on the website though with a few difficulties yet to be tended to by online retailers. Shopping online gives access to a plenty of data about items and administrations, customer audits, assortment of items, and this at the expense of investing less energy contrasted with visiting physical retail locations. The inquiry is with respect to how fruitful is the commitment methodology of

online retailers and how this affects future buying goals and ensuing faithfulness aims. An investigation was embraced to look at and examine these viewpoints. 416 online customers who were very much familiar with the online retailer were studied at Chennai to inspire their recognition levels and conduct goals. Relapse examination was performed on the essential information and the experiences thereof are exhibited.

2.2 Influencing Consumer Engagement In Online Customer Communities: The Role Of Interactivity

(Mpinganjira, March 2016)**,** her research article explored shopper commitment in online customer networks and the impact of intuitiveness on it. A theoretical model connecting diverse components of intuitiveness and buyer commitment was proposed and tried. The capacity of administrators to guarantee elevated amounts of purchaser commitment relies upon them picking up a decent comprehension of the idea, its indications in their unique circumstance, just as components that impact it. This article goes for adding to this comprehension with regards to online customer networks. The article pursued a quantitative research approach. Information was gathered from 303 individuals from online customer networks situated in Gauteng, South Africa. Auxiliary condition demonstrating was utilized to test the speculations proposed in the article. The outcomes demonstrated that framework related components of intuitiveness and human intelligence are emphatically connected with customer mental commitment. Mental commitment was thusly observed to be decidedly connected with conduct commitment. The discoveries point to the requirement for supervisors to focus on framework and human related intuitiveness on the off chance that they are to impact customer commitment levels on their destinations. Little research exists on purchaser commitment, bringing about constrained comprehension of the idea just as its precursors. Concentrating on online customer networks, this article adds to tending to this hole in writing. Chiefs of online customer networks can utilize the discoveries to screen dimensions of purchaser commitment on their destinations and discover methods for improving it.

2.3 Impact of online flow on brand experience and loyalty

(Soo In Shim, february 2015) their study examined the relationships between consumers' skill, perceived challenge, online flow, brand experience, and brand loyalty in the context of online shopping on an apparel brand's website. Data were collected using an online survey with a national sample of 400 female adults (age 20-34). Respondents were asked to perform an online browsing task on an existing brand's website randomly assigned to them and answer questions about the task. The results from structural equation modeling analysis show that more skillful consumers are more likely to reach a state of online flow on a brand's website, and the relationship between skill and online flow was moderated by the level of challenge felt by consumers about the given task. Further, online flow positively influenced sensory and affective brand experiences, which in turn led to brand loyalty. Theoretical and managerial implications of the findings are discussed along with limitations and recommendations

III. RESEARCH METHODOLOGY

3.1 Research Objective

Primary objective:

- To study the customer brand engagement with satisfaction and loyalty through online brand experience with special reference to baby products**.**

Secondary objective:

- To study the level of satisfaction of customers towards the variety and availability of products and also to know the factor influencing customer loyalty towards a particular retailer who deals with baby products.
- To understand the customer experience towards the delivery and packaging of products being delivered through online purchase with special reference to baby products.
- To identify the satisfaction level of buyers towards the pricing and discounts for products in comparison with other online baby product retailers .

3.2 Sample Size

Convenience sampling was used to select for collecting the responses from the respondents. A total of 100 customers were sampled to represent the population.

3.3 Data Collection

This research used primary data by way of questionnaires to collect data from customers. The questionnaire used was structured to ensure uniformity of responses and contained both open-ended and closed-ended questions. Five-point Likert scales with ends starting from strongly disagree to strongly agree was used to collect responses from customers.

3.4 Validity and Reliability of Measurement

In order to ensure the reliability of the measurement instrument, the data was compiled and analyzed to test the scale for internal consistency using the techniques Cronbach's alpha. The value of Cronbach's alpha obtained (0.826) indicated a high level of internal consistency for the study scale.

Reliability Statistics

Cronbach's Alpha	N of Items
.826	9

3.5 Conceptual framework on Consumer Brand Engagement – Adoption Model

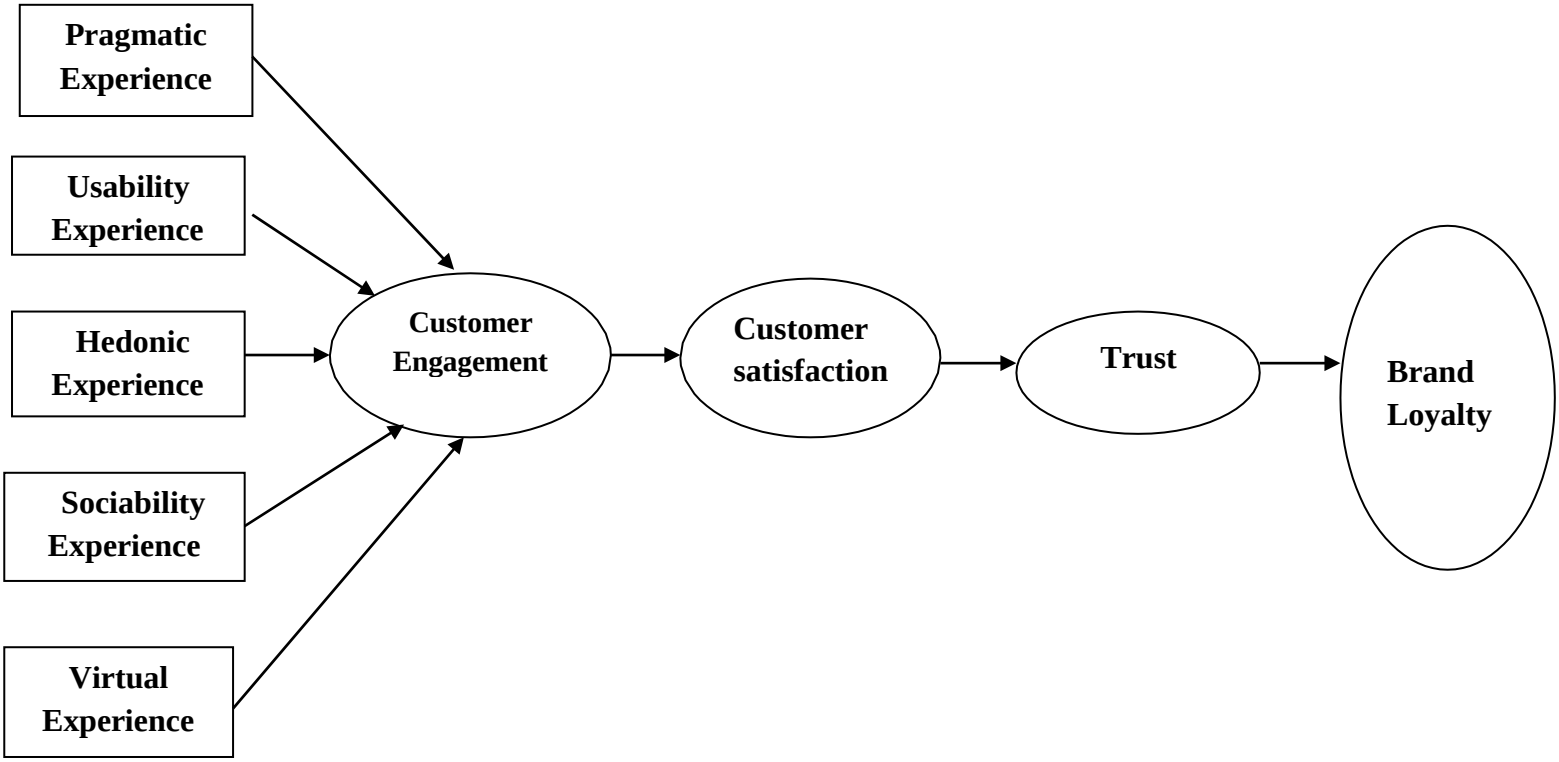

Fig 1: Proposed Customer Brand Engagement –Adoption Model

3.6 Concepts in the Brand Loyalty Adoption Model

1. **Pragmatic Experience:** Pragmatic elements are believed to be based on the aim-oriented behaviour of customers and stimulation if users find the online experience useful, worthy and valuable
2. **Usability Experience:** The usability experience is defined as the customers experience in surfing and using the online community environment. Thus, this dimension clearly reflects an aspect of technology
3. **Hedonic Experience:** The hedonic dimension of OCE is regarded as the intrinsic value that customers gain from the online goods interactions. This element stimulates user's feelings of enjoyment when they pursue their desired goals of brands and goods. Strong associations relevant to the customers desired aims will provide them the context to project good feelings, happiness and derive fun; and this ultimately converts into the positive hedonic experience
4. **Sociability Experience:** The sociability dimension of OCE is considered as the social experience which a member (customer) extracts from his/her association with the online goods community. These elements size up the knowledge of users based on their total friendliness, openness and politeness.
5. **Virtual Experience:** Virtual Experience Dimension is considered as a virtual experience where the customers extract from the online shopping by way of placing order ,payment method or so on,the mentioned factors can make customer feel satisfied and trust which leads to loyalty

Table1: Showing List of hypothesis

S.no	Factor	Hypothesis
1.	**Pragmatic Experience**	H0: Pragmatic experience has no significant relationship with customer brand engagement.
		H1: Pragmatic experience has a significant relationship with customer brand engagement.
2.	**Usability Experience**	H0: Usability experience has no significant relationship with customer brand engagement.
		H1: Usability experience has a significant relationship with customer brand engagement.
3.	**Hedonic Experience**	H0: Hedonic experience has no significant relationship with customer brand engagement.
		H1: Hedonic experience has a significant relationship with customer brand engagement.
4.	**Sociability Experience**	H0: Sociability experience has no significant relationship with customer brand engagement.
		H1: Sociability experience has a significant relationship with customer brand engagement.
5.	**Virtual Experience**	H0: Virtual experience has no significant relationship with customer brand engagement.
		H1: Virtual Experience has a significant relationship with customer brand engagement.

IV. DATA ANALYSIS AND INTERPRETATION

Table 2: Demographic profile of respondents

Factors	**Frequency**	**Percent**
Gender		
Male	28	28%
Female	72	72%
Total	**100**	**100**
Age		
Less than 25	28	28
26-30	55	55
31-35	7	7
36-45	5	5
More than 45	5	5
Total	**100**	**100**

Employment Status		
Employed	61	61%
Self Employed	16	16%
Homemaker	23	23%
Total	**100**	**100**
Monthly Income		
Less than Rs.20,000	16	16%
Rs.20,000 to Rs. 40,000	28	28%
Rs.40,000 to Rs. 60,000	33	33%
Rs.60,000 to Rs.80,0000	11	11%
Rs. 80,000 to Rs.1,00,000	6	6%
Above Rs.1,00,000	6	6%
Total	**100**	**100**

Weighted average of the constructs and moderators

The following table provides the details of the weighted average scores for each of the statements used in the questionnaire and also the combined weighted average for each of the factors of the model. The weights allotted as below 5-Strongly agree, 4- agree, 3-neutral, 2-disagree and 1- strongly disagree.

Table 3: Table of weighted average scores.

Statement		Score
1. PRAGMATIC EXPERIENCE		**4.09**
I feel using online services is productive	4.27	
It is worthwhile using online services	4.16	
I feel the use of online services as valuable	4.05	
Online shopping services are informative	4	
Using online services is very much useful for me	4.16	
I am pleased to use online shopping services	3.88	
2. USABILITY EXPERIENCE		**4.002**
It is easy to use online shopping sites	4.16	
It is not confusing to use online sites	4.11	
It is not tiring to use online platforms	3.77	
It is simple to use online shopping sites	4.11	
It is not stressful to use online platforms	3.83	
3. HEDONIC EXPERIENCE		**4**
I am happy while using e-sites	4.22	
I am pleased while using online platforms	4.16	
I am excited by the services provided by the online environment	3.94	
The entertainment provided by the online platforms can adjust my mood	3.77	
I am captivated by the online platforms I am using	3.88	
4. SOCIABILITY EXPERIENCE		**3.98**
Online interaction in the sites through the chatbots is very user friendly	3.91	
The interface of online services is not intruding	3.94	
The interface of online services is personalised	4.11	
5. VIRTUAL EXPERIENCE		**4.08**
Online shopping site provides comfortable shopping medium	3.94	

The online retailer provides comfortable site atmospherics	4.05	
I feel comfortable in placing an order	4.11	
I am happy with the comfortable Payment methods	4.22	

From the above table we can understand that highest weightage is for pragmatic experience (4.09). Hence we can say that pragmatic experience plays an important role in the minds of the parent when purchasing baby products online. The least weightage is for sociability experience factor (3.98). Therefore the factor sociability experience has no severe influence in the decisions of the parent purchasing baby products online.

Fig 2: Customer Brand Engagement - Adoption Model (CBE-AM) in AMOS

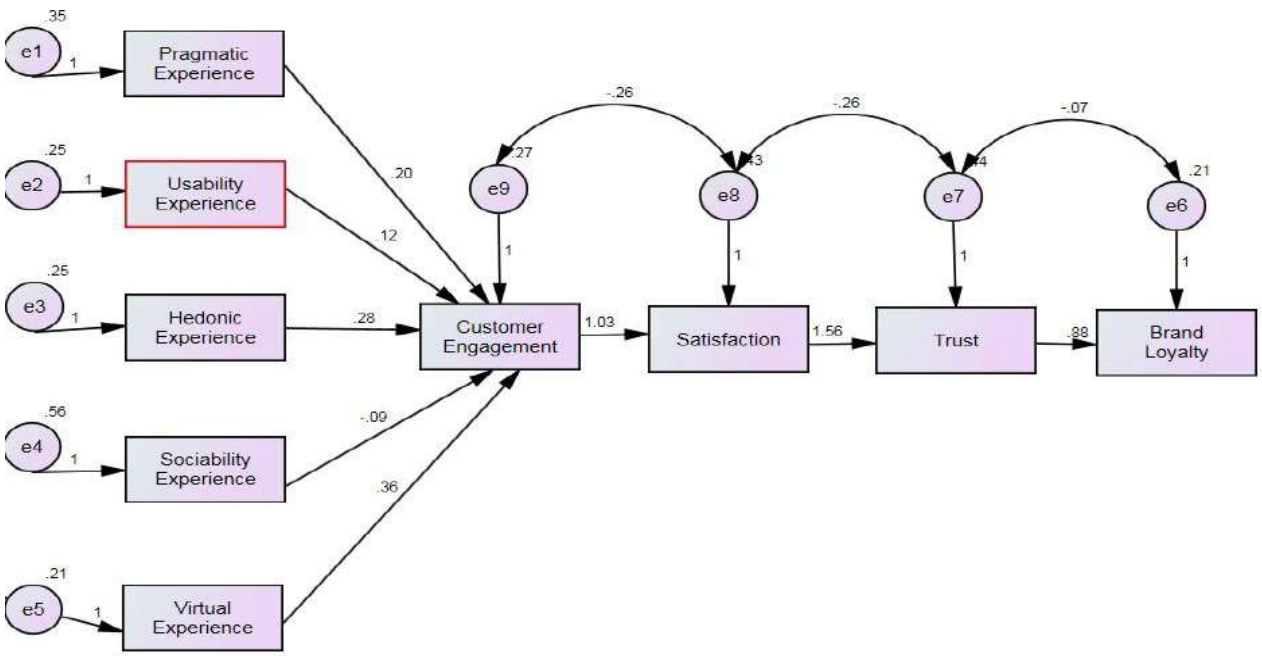

Fig 2: Customer Brand Engagement - Adoption Model (CBE-AM) in AMOS

The previous diagram is the Customer Brand Engagement - Adoption Model (CBE-AM) in AMOS created in AMOS software in ordered to find the relationship between all the factors. In this model the relationship is tested between each factor.

Table 4:CMIN

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	26	81.066	19	.000	4.267
Saturated model	45	.000	0		
Independence model	9	394.526	36	.000	10.959

The chi-square for the model is also called the discrepancy function, likelihood ratio chi-square, or chi-square goodness of fit. In AMOS, the chi-square value is called CMIN. If the

chi-square is not significant, the model is regarded as acceptable. In SEM a relatively small chi-square value supports the proposed theoretical model being tested. In this model, the value is 4.267. In this model, it can be seen as a good fit model.

Table 5: RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.044	.854	.655	.361
Saturated model	.000	1.000		
Independence model	.139	.367	.209	.294

The RMS, also called the RMR or RMSE, represents the square root of the average or mean of the covariance residuals--the differences between corresponding elements of the observed and predicted covariance matrix. Zero represents a perfect fit, but the maximum is unlimited. Hence it is not a bad fit but a moderately good fit.
The goodness of fit index (GFI) was the very first standardized fit index. It is analogous to squared multiple correlations except that the GFI is a kind of matrix proportion of explained variance. Thus, GFI = 1.0 indicates perfect model fit, GFI > .90 may indicate good fit, and values close to zero indicate very poor fit. In this model, it can be seen as a moderately good fit.

Table 6 : RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.214	.168	.264	.000
Independence model	.375	.342	.408	.000

Root Mean Square Error of Approximation (RMSEA)
This absolute measure of fit is based on the non-centrality parameter. Its computational formula is:

$$\frac{\sqrt{(\chi^2 - df)}}{\sqrt{[df(N - 1)]}}$$

where N the sample size and *df* the degrees of freedom of the model. The measure is positively biased (i.e., tends to be too large) and the amount of the bias depends on the smallness of sample size and df, primarily the latter. The RMSEA is currently the most popular measure of model fit and is now reported in virtually all papers that use CFA or SEM and some refer to the measure as the "Ramsey." In the above table, the RMSEA for default model is 0.214 which is a moderately fit model.

Table 7:Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Cust_eng	<---	Avg_MatExp	.196	.054	3.660	***	

			Estimate	S.E.	C.R.	P	Label
Cust_eng	<---	Avg_UseExp	.118	.050	2.372	.018	
Cust_eng	<---	Avg_HedExp	.283	.072	3.952	***	
Cust_eng	<---	Avg_SocExp	-.086	.031	-2.761	.006	
Cust_eng	<---	Avg_VirExp	.362	.084	4.323	***	
Avg_sat	<---	Cust_eng	1.027	.250	4.105	***	
Avg_trust	<---	Avg_sat	1.558	.246	6.337	***	
Avg_brandLyt	<---	Avg_trust	.875	.108	8.110	***	

From this table we can conclude by saying for every 1 unit increase in Customer engagement there will be 0.196, 0.118, 0.283, 0.362 unit increase in Pragmatic experience, Usability experience, Hedonic experience, Virtual experience and 0.86 decrease in Sociability experience.

- H1a: Pragmatic experience has a positive impact on customer brand engagement. The 'p' value is lesser than 0.05 which suggests that there is a statistically significant impact online brand experience with reference to baby products. Therefore we reject the null hypothesis.

- H1b: Usability experience has a positive impact on customer brand engagement. The 'p' value is lesser than 0.05 which suggests that there is a statistically significant impact on online brand experience with reference to baby products. Therefore we reject the null hypothesis.

- H1c: Hedonic experience has a positive impact on customer brand engagement. The 'p' value is lesser than 0.05 which suggests that there is a statistically significant impact on online brand experience with reference to baby products. Therefore we reject the null hypothesis.

- H1d: Sociability Experience has a negative impact on customer brand engagement. The 'p' value is lesser than 0.05 which suggests that there is a statistically significant impact on online brand experience with reference to baby products. Therefore we reject the null hypothesis.

- H1e: Virtual experience has a positive impact on customer brand engagement. The 'p' value is lesser than 0.05 which suggests that there is a statistically significant impact online brand experience with reference to baby products. Therefore we reject the null hypothesis.

V. FINDINGS & SUGGESTION

FINDINGS

- Among the 100 respondents to the survey, there are 72% of female users, forming the majority of the respondents.
- Amazon.com is the retailer which is mostly used among the respondents followed by firstcry.com in the second place.

- Almost 68% of customers prefer purchasing products from amazon because they feel that experience that they deliver is given equal importance as its products and services which further leads to brand loyalty.
- Parents falling between age group less than 25 & 25-30 prefer shopping baby products online.
- 72% of the customers are willing to pay more for a great experience. One extraordinary experience of e-retailer raises the customers expectation of other companies.
- Majority of the respondents told that they will continue online shopping in future , this shows that they are loyal to their particular brand because of the quality, price, discounts, offers, on time delivery, cash on delivery etc.
- If the reliability is above .7 which means that they have a good relation with the factors .As per the analysis the reliability is positive and its above .826 which states that they have a good relation with each and every factor.
- Pragmatic Experience, Usability Experience, Hedonic Experience and Virtual Experience has a positive impact on Satisfaction, Trust and Brand Loyalty.
- When the Conception framework on brand loyalty model is considered as a whole, with the help of AMOS the relationship is found to be statistically significant towards customer engagement, satisfaction, trust and brand loyalty
- To find the relationship between the dependent variable and the independent variable, Multiple Linear regression was done. Even though all the factors had a positive impact on the Customer engagement and brand loyalty, they were not significant enough except for Social experience in purchasing which had a negative impact on customer engagement and brand loyalty. But pragmatic experience and virtual experience had a statistically significant impact on the customer engagement and brand loyalty.

SUGGESTIONS AND RECOMMENDATIONS

Through this research, the factors that impact the consumer experience and brand loyalty were analyzed through Customer Brand Engagement - Adoption Model (CBE-AM) in AMOS. This can be used as a basis for several further types of research. This leads us to the further understanding of customer engagement and brand loyalty and how it is driven by customer experience. The retailer should ensure that they keep their website and apps simple and easy to use and understandable by the customers. If complicated, the people may reduce the usage of the app/Website or they may switch over to other retailer which are comparatively easier. The retailer can make sure that they are delivering the product at right time at the right place because if on time delivery is not done it makes customers unsatisfied then such factor will affect the loyalty. The retailers have to work on the quality of the product as per the respondents they are not feeling loyal because of the worst quality of the product. They can work on the return and warranty policy which makes customers more satisfied and it leads to be loyal. Retailer can also concentrate more on the packaging of the product ,customer are feeling like they can improve the packaging Online retailer can also

work on to clarify all the queries which customer post, the response which the customer receive from the retailer will make customers to feel loyal .

VI. CONCLUSION

Online shopping is changing from purchasing the products online from offline stores. The online store are making the customer works simple, by sitting at their home, work place they are placing the order. It saves time and also helps to cut down travelling expenses. This research paper has widely tested the different factors of customer engagement which helped to analyze the satisfaction and trust with the loyalty. Customers will be satisfied only when we have favourable customer engagement, satisfaction futher leads to trust, and makes customers loyal for their particular retailer. This research examined the relationship between Pragmatic Experience, Usability Experience, Hedonic Experience, Sociability Experience, Virtual Experience , customer engagement , satisfaction and trust. It studies the brand loyalty through the conceptual framework on brand loyalty adoption model. The research model has been found to have a good fit as per the index or scores derived from SEM . Therefore we can understand that the suitable model has been adopted to undertake the research. In the research paper, we can see that all the factors have a significant relationship with the brand loyalty and thus, we can say that any changes in these factors among the customers will affect the online purchasing. Thus, we can conclude that the research paper will enable the readers to understand clearly about the customer brand engagement with satisfaction and loyalty through online brand experience.

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