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Kristu Jayanti College

AUTONOMOUS Bengaluru

Reaccredited 'A' Grade by NAAC | Affiliated to Bangalore University

KRISTU JAYANTI INTERNATIONAL SYMPOSIUM

12th INTERNATIONAL CONFERENCE

on

THE FUTURE OF BUSINESS - INDUSTRIAL REVOLUTION 4.0

February 15 & 16, 2019

ORGANIZED BY

SCHOOL OF MANAGEMENT (MBA & PGDM)

KRISTU JAYANTI COLLEGE, BENGALURU

KRISYM

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Indian Academicians and Researchers Association (IARA) is an educational and scientific research organization of Academicians, Research Scholars and practitioners responsible for sharing information about research activities, projects, conferences to its members. IARA offers an excellent opportunity for networking with other members and exchange knowledge. It also takes immense pride in its services offerings to undergraduate and graduate students. Students are provided opportunities to develop and clarify their research interests and skills as part of their preparation to become faculty members and researcher. Visit our website www.iaraedu.com for more details.

ABOUT KRISYM 2018

The world has entered into the fourth industrial revolution. Corporate think tanks have been discussing the effect of "Industry 4.0" on business. The world has seen three major revolutions – mechanization, electrification and information. The fourth revolution is termed as 'Industry 4.0.' This new industrial revolution is expected to take international business by storm. Germany adopted 'Industry 4.0' as a German national strategy in April 2013. The future industry innovation trends indicate utilisation of data analytics, increased level of business intelligence in manufacturing, service, integration of cyber-physical systems and smart work platforms. Rightly said, these define 'industry 4.0.' The line differentiating physical, digital and biological interface is now just a blur. The way we interact with emerging and digital technology such as artificial intelligence (AI), analytics and the Internet of things (IoT) is witnessing a rapid transformation. Artificial intelligence has revamped the business ecosystem.

Industry 4.0 is in motion, transforming industry, societies, and all economies of the world. The possibilities that businesses face are limitless. Innovative strategies and competitiveness are the way forward. Whether it is customer service, or talent management, or alternative business strategies, Industry 4.0 has challenged the existing status quo. It has not just redefined how work is executed but also questioned existing types of work. Industry 4.0 is a clarion call for business leaders to deal with this disruptive shift comprehensively and seize the new opportunities it has brought. It is time for all to forge ahead with courage and confidence to build a new world utitilising this new generation of technological change. At this juncture, School of Management, Kristu Jayanti College, Autonomous, Bengaluru organises the 12th International Conference on "The Future of Business - Industrial Revolution 4.0", in the KRISYM series (Kristu Jayanti International Symposium).

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A STUDY ON PERFORMANCE OF INDIAN IPO'S DURING THE FINANCIAL YEAR 2018-2019

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ABSTRACT

The capital market promotes economic growth through promoting savings and increases productivity. One of the significant reforms is the primary market including IPOs started emerging as one of the major source of funds for Indian companies as well as an important avenue for retail investors to allocate their funds for higher return. In the recent years many companies have raised funds through IPOs. Prior to 2012, allotment of shares to retail investors was done on a pro-rata basis. Investors who could afford to put Rs. 2 lakhs, known as retail investors, in an IPO got most shares while others get allotted very less or no shares. To address this issue SEBI has changed the basis of allotment of IPO to retail investors from pro-rata basis to lottery method since 2012. Two methods are widely used for an IPO, book building and fixed price issue. Out of 132 companies raised funds through IPO 14 companies are taken for study based on its issue size. It is found that the companies which had listing gain also had current market price gain. The companies which had massive over-subscription had both listing and current market price gain.

Keywords: Book building, IPO, listing gain, current market price gain, over-subscription, overpriced, underpriced.

INTRODUCTION

The capital market nurtures economic growth by stimulating savings for capital formation and enhances productivity of investment by enhancing allocation of investible funds. The efficiency and effectiveness of the flow of funds is assessed through the quality of the market. A portfolio of reforms have been introduced and implemented since 1990 to improve the quality of the market in terms of its efficiency, transparency and price discovery process and transforming the Indian capital market to the international standards.

One of the significant reforms is the primary market including IPOs started emerging as one of the major source of funds for Indian companies as well as an important avenue for retail investors to allocate their funds for higher return. In the recent years many companies have raised funds through IPOs. Like any other investment, investing in IPO is also considered as one of the risky investments. The riskiness of the investment relates to unpredictability of market behaviour in volatile market. The nature of the market, bullish and bearish, determines the performance of the IPO. Moreover the performance of the IPO is also influenced by Interests of the investors and market trend. It is very difficult to forecast the performance of the stock on its initial day and in the near future as there is very little historical data for the technical analysis of the stock. The paper has four parts, namely, review of literature, methodology, results and discussion and findings and suggestions.

REVIEW OF LITERATURE

The performance and the determinants of IPO returns on the listing day as well as in long term period has been extensively researched in almost all the major stock exchanges of the world. The literature reviews of the previous researches done on the returns behaviour of IPOs all over the world including Indian stock market are mentioned below:

Narsinhan and Raman (1995) analysed the performance of 103 IPOs and found that the initial returns from the IPOs are higher.

Shah (1995) carried out a study on IPOs for the period January 1991 to April 1995 of 2056 IPOs and reported that under pricing on an average was 105.6 percent above the offer price on equally weighted basis and 113.75 percent if weighted by size of the issue. The commonest delay between issue date and listing date is 11 weeks, and it is highly variable. This delay is strongly associated with issue size, where bigger issues tend to have shorter delays. The listing delay had diminished over the years. Hence the focus is on the weekly returns on IPOs in excess of weekly returns on the market index. It is found that the average IPO underpricing comes to 3.8 percent per week by this metric. Very small as well as very large issues had higher initial returns than the issues of medium size.

Lawrence M Benveniste and Walid Y Busava (1997) compared two mechanism for selling IPOs, the fixed price method and American Book Building. They found that the book building generated higher expected proceeds but exposed the issuer to greater uncertainty, and that it provided the option to sell additional shares that were not underpriced on the margin.

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Barnal and Obadullah (1998) analysed the 433 IPOs and also found the initial returns to be higher.

Pandey and Arun Kumar (2001) explored the impact of signal on underpricing. Based on cross sectional data of 1243 IPOs in Indian Market during 1993-1995, they found that realized excess initial returns on IPOs were high on approximately 68 percent. They also reported that smaller sized issues tend to have higher initial returns as compared to large issues.

Ansari V. Ahmed (2006) studied the IPO underpricing in India during the period of 2005 and found that the average first-day return (underpricing) was 40.9 percent which is quite substantial. He also found that during the period 84 percent of the IPOs were underpriced and 16 percent were overpriced.

Satyendra K. Singh (2008) studied the under-pricing phenomenon for the common stock for initial public offerings (IPOs). Book-building company was made compulsory for the companies during the year 2000-2001. In this case 60% of the offer should be allotted to Qualified Institutional Buyers. The main study is to understand the relationship between performance of index and the average returns on the IPO.

S S S Kumar (2010) examineed the performance of IPOs issued through the book building process in India over the period 1999 2006. The sample comprises 156 firms that offered their shares through the book building route on the NSE. Upon listing the IPOs on an average offered positive returns (after adjusting for market movements)to investors and a large part of the closing day returns on the listing day were accounted for by the opening returns. In the long run the IPOs offered positive returns up till twenty four months but subsequently they underperform the market.

GadeSurendar and Dr. S. KamaleshwarRao (2011) studied companies raised capital in the primary market by way of an initial public offer, rights issue or private placement. An Initial Public Offering (IPO) is one through which an unlisted company makes either a fresh issue of securities or an offer for sale of its existing securities or both for the first time to the public. This paves way for listing and trading of the issuer's securities. IPOs deepen the market, diversify investor's portfolios, reduce volatility in stock prices, bring domestic investors money into the market and attract Foreign Institutional Investor funds.

METHODOLOGY

The main objectives of the study include

- To study the methodology of Book-building Issue and Fixed price Issue.
- To analyse the performance of the IPO's in the market during the financial year 2018-2019
- To ascertain the factors contributing to the under pricing or over pricing of IPO in India.

RESEARCH PROBLEM

One major source of business financing is through Initial Public Offerings (IPOs). Historically, IPOs received high initial first day gains compared to the market performance. These gains reflect external factors and not the company's true value, thereby suggesting the under-priced IPO. The recent researches on IPOs in different markets for different industries in various countries have focused on under-pricing and show that the under-pricing is evident in case of book-building route as well as fixed price-band offers. This study attempts to identify causal variables behind high initial gains for Indian IPOs using earlier researches and testing them over a sample of Indian IPOs to examine the influence of non-fundamental factors and signaling effects on under-pricing.

COLLECTION OF DATA

The secondary data was collected from the various sources available like websites mainly SEBI, BSE and NSE. It contains stock prices, stock returns, and the accounting variables of the listed companies. There were 132 companies raised funds through IPO during 2018-2019. Based on the issue size of the IPO, 14 companies that got listed on the Bombay Stock Exchange (BSE) / National Stock Exchange (NSE) between April 01 2018 and 31st March 2019 were selected for analysis. All the issues were book building issues.

Scope of the proposed study

The scope of the study is limited to only the IPOs issued between April 01 2018 and 31st March 2019.

Results and Discussion

This part of the paper provides performance of the IPOs under study.

Two major methods of IPOs are a) Book Building (BB) process and b) Fixed Pricing process

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Book Building (BB) process : Book Building (BB) is a price discovery mechanism used in Initial Public Offer (IPO) and Follow-on Public Offer (FPO). In this process the bids are collected from the prospective investors which has two price bands, one is floor price or lower price band and other is upper price band. The upper price band should not be more that 20% of the floor price. The issue price is determined after the closure of the bid based on the prices quoted. It is very

Fixed pricing process

Under fixed pricing process there is only one price and issue will be offered at that price. Such type of issue is known as Fixed Price Issue.

Table 1: Performance of IPOs under study

The following table provides the IPOs taken under study during the financial year 1st April 2018 to31st March 2019 and their performance.

Company	Issue Size (Rs. in crore)	Issue Open	Issue Close	Issue Price (Rs.)	Listing Day	Listing Close price	Method	Listing Gain	Performance
Mishra Dhatu Nigam Ltd	438.38	21/03/2018	23/03/2018	90	04/04/2018	90	BB	Nil	-
ICICI Securities	4016	22/03/2018	26/03/2018	520	05/04/2018	444.9	BB	(14.44)	Overpriced
Indostar Capital Finance	1844	09/05/2018	11/05/2018	572	21/05/2018	585.5	BB	(2.36)	Overpriced
Fine Organics Industries	597.87	20/06/2018	22/06/2018	783	02/07/2018	822.8	BB	5.08	Underpriced
RITES Ltd	453.6	20/06/2018	22/06/2018	185	02/07/2018	212.7	BB	14.97	Underpriced
TCNS Clothing Company Ltd.	1121.98	18/07/2018	20/07/2018	716	30/07/2018	657.8	BB	(8.13)	Overpriced
Credit Access Grameen Ltd.	1126.44	08/08/2018	10/08/2018	422	23/08/2018	420.8	BB	(0.28)	Overpriced
Aavas Financiers	1729.2	25/09/2018	27/09/2018	821	08/10/2018	773.15	BB	(5.83)	Overpriced
Xelpmoc Design and Tech	23	23/01/2019	25/01/2019	66	04/02/2019	58.8	BB	(10.91)	Overpriced
Chalet Hotels Ltd.	1628.84	29/01/2019	31/01/2019	280	07/02/2019	290.4	BB	3.71	Underpriced
Metal Scrap Trade Corporation Ltd.	213.81	13/03/2019	20/03/2019	128	29/03/2019	114.2	BB	(10.78)	Overpriced
Embassy Office Parks	4740	18/03/2019	20/03/2019	300	01/04/2019	314.1	BB	4.7	Underpriced
Rail Vikas Nigam Ltd.	430.88	29/03/2019	03/04/2019	19	11/04/2019	19.05	BB	0.26	Underpriced
Metropolis Health Care	1200.18	03/04/2019	05/04/2019	880	15/04/2019	959.55	BB	9.04	Underpriced

Out of 14 companies under study 7 companies were overpriced and only 6 companies were underpriced and one was neither overpriced nor underpriced. RITES Ltd. provided the highest listing gain for the investors whereas ICICI securities gave the most listing loss to the investors which has the highest issue size among all the companies under study.

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Table-2: Current gain/(loss) of IPOs under study

Company	Current Market Price as on April 01 2019	Issue price	Current gain/(loss) (%)
Mishra Dhatu Nigam Ltd	136.25	90	51.39
ICICI Securities	225.5	520	(56.63)
Indostar Capital Finance	415.8	572	(27.31)
Fine Organics Industries	1,332.00	783	70.11
RITES Ltd	253.25	185	36.89
TCNS Clothing Company Ltd.	820.4	716	14.58
Credit Access Grameen Ltd.	513.55	422	21.69
Aavas Financiers	1,150.00	821	40.07
Xelpmoc Design and Tech	73.25	66	10.98
Chalet Hotels Ltd.	334	280	19.29
Metal Scrap Trade Corporation Ltd.	108.5	128	(15.23)
Embassy Office Parks	337.7	300	12.57
Rail Vikas Nigam Ltd.	25.6	19	34.74
Metropolis Health Care	983.85	880	11.8

All the three companies which had current market price loss had listing loss also. Fine Organics Industries had the highest current gain (70.11%) had also listing gain. All the six companies which had listing gain had also current market gain.

Table-3: Comparison of Over-subscription and Current gain and Listing Gain

Company	Over- subscription (in times)	Listing Gain(loss) (%)	Current gain/(loss) (%)
Mishra Dhatu Nigam Ltd	1.21	Nil	51.39
ICICI Securities	0.36	(14.44)	(56.63)
Indostar Capital Finance	6.8	(2.36)	(27.31)
Fine Organics Industries	8.99	5.08	70.11
RITES Ltd	67.24	14.97	36.89
TCNS Clothing Company Ltd.	5.27	(8.13)	14.58
Credit Access Grameen Ltd.	2.22	(0.28)	21.69
Aavas Financiers	0.97	(5.83)	40.07
Xelpmoc Design and Tech	3.25	(10.91)	10.98
Chalet Hotels Ltd.	1.57	3.71	19.29
Metal Scrap Trade Corporation Ltd.	1.46	(10.78)	(15.23)
Embassy Office Parks	2.57	4.7	12.57
Rail Vikas Nigam Ltd.	1.82	0.26	34.74
Metropolis Health Care	5.84	9.04	11.8

The least over-subscribed share, ICICI Securities (0.36 times), has the highest listing loss (14.44%) and current market price loss (56.63%) whereas massive over-subscribed stock, RITES Ltd. (67.24 times), has both listing gain (14.97%) and current market price gain (36.89%) .

Reasons for overpricing and underpricing of IPO

Underpricing

Invariably underpricing is very common phenomenon for IPOs in the capital market not only in India but also throughout the world. The main reasons for underpricing of IPOs are : a) Disproportionate information b) Avoidance of litigation c) Investors' motivation d) Irrational expectation

Disproportionate Information: There are two types of investors in the market, namely, informed and uninformed investors. Usually informed investors put in a large number of applications for underpriced issues, while uninformed investors apply indiscriminately. As a result, uninformed investors have lesser chance of getting an allotment in profitable IPOs because their demand is partly crowded out by informed investors. Thus, uninformed investors are cursed by getting optimum allocation in an unsuccessful IPO and hence will be losing

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their interest in the market. To attract the uninformed investors to the IPO market, the issues must be underpriced to some extent so that an assured return can be made. The more the magnitude of information friction, the more likely the issue will be underpriced because of uncertainty surrounding the IPO.

Avoidance of litigation: Companies deliberately underprice the IPOs to avoid possible lawsuit threats from disappointed investors. Underpricing is used to safeguard the possible lawsuit threat. Other studies supporting institutional approach for IPO underprice include, price stabilization theory and tax arguments

Investors' motivation: Issuing equity through IPO route eventually leads to separation of ownership and control. Underpricing induced ownership dispersion as a large and diverse group of investors bid for the IPOs. Managers then strategically allocate the IPOs to protect their private benefits. Other studies found evidence in support of the ownership and control consideration as motivation for underprice.

Irrational expectation: Behavioral theories find that investors bid IPOs irrationally. Overenthusiastic investors bet the price of IPO shares beyond their true fundamental value. Investors subscribe to the IPOs by sequentially learning from the response of the earlier investors. Alternatively, latter investors base their investment decision on the initial investors' information and discount their private information.

Overpricing

The overpricing is starts with the erring bankers with regard to overpricing, unnecessary hype and violations of a standard code of conduct and business ethics.

FINDINGS AND SUGGESTIONS

- All the massive over-subscribed stocks have listing and current gain.
- The stocks which have listing gain may have current market price gain
- The massive over-subscription in most of the IPOs often leads to retail investors getting allotted only few shares.
- The listing loss is directly correlated with current market price loss. All the three companies which had listing loss also had current market price loss.
- The companies which had listing gain also had current market price gain.
- It was found that IPOs are underpriced an average of 15 percent. The gap between the initial and close-of-the-first-day prices is that companies going public are risky ventures and investment banks are prudent to set initial prices low.
- There is a big hype created by the investment banker in the case of the mega IPO of ICICI Securities which raised Rs 4016 crore, the highest issue size among the companies selected under study, had listing loss and the highest current market loss.
- The Credit Access Grameen Ltd. had interesting IPO which is the very rare Industry that has come for IPO from NGO side. It had issue size of 1126.44 crore. Though it had skimpy listing loss and current market price was relatively higher.
- Among the IPOs under study the only PSU which had come out with IPO was Rail Vikas Nigam Ltd. Though it had very low listing gain, it had comparatively higher current market price gain.
- Book building process is suitable only for massive issues.
- The company which comes out for IPO must be fundamentally strong and well known to all the classes of investors.
- The book building system functions very well in matured market conditions. So, the investors are well aware of the various parameters affecting the market price of the stoch. But, such conditions are generally not seen in practice.

CONCLUSION

The study is made to present the performance of IPOs between 1st April 2018 and 31st March 2019. Underpricing and overpricing are common phenomena in IPO. There is an extent of over subscription of an IPO, which will determine the First Day Gains. The over subscription leads to larger first day gains for the IPOs. The analysis helps to find out whether the stocks are underpriced or overpriced. Book building process is very common strategy to discover the price of IPO. The massive over-subscription of IPO leads to listing day gain as well as current market price gain.

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DIGITAL INDIA AND SOCIAL SECTOR-STRATEGIES AND MODEL WITH A SPECIAL REFERENCE TO E'HEALTH CARE MODEL

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ABSTRACT
"E"technology is one of the innovative ideas which can fulfill with the effective step to make digital India with innovation of new technologies and its effective application in almost all the sectors of Indian context. India is one of the developing countries which hold highest human resources in the technology specialized areas and who can provide their fullest potential for the development of the country. This paper provides new strategies for implementing e'technologies with the guidelines for effective implementation technology in various levels with target oriented approach. Along with a model of implementing e'technologies especially in the e'health care implementation developed as a system for better ideas and thoughts for future innovation and implementation.

Keyword: E' technology, implementation of e'technology, e'health care technology

INTRODUCTION
A dream of digital India with the initiation of e-technologies in the social sector is applicable in Indian context with an effective step from the government side along with the cooperation of all Indian citizen. "E"technology is one of the innovative ideas which can fulfill with the effective step to make India with innovation of new technologies and its effective application in almost all the sectors in Indian context. India is one of the countries which hold highest human resources in the technology specialized areas and who can provide their fullest potential for the development of the country.

The strategies for making the digital India is quite easy but required adequate amount of human resources with expertise in implementation of e'technology in the social sector. It is the combined efforts of health care professionals, social workers, government officials and software and hard ware professional and engineers. Implementations of 'e' technologies are costly compared with other types of project implementation. Even though it is costly in nature its use is inevitable once we are used with it.

TARGET ORIENTED PROGRAMMES
1. Old Age
2. Physically and Visually impaired persons
3. Students
4. Women
5. Children

1. Old Age
Old age is one of the down trodden people in the society. They are physically weak and unable to do things independently. They need support from other people in the society. In this circumstances a very effective technology with supportive care system need to be enabled with the help of e' technology. E' technology can be use ful for the old age with appropriate use of sensor system, which will give right information in the right direction when they required to move within the home or outside home. The e technology devices can be connected within their mobile phone and like GPS(location map) and censoring system will be able to help them to move in a right direction by avoiding the obstacles on their way. Apart from that their mobile phone also need to link with health care system to monitor their health status like daily report of heart beat, BP, Sugar and other required information based on individual specific programmes need to be installed in the mobile like an app. This will give information to the patient as well as the health care professionals who are treating the individuals and adequate medical care notification can sent to the patient and incase any emergency alarm system can be installed and mobile unit with medical facility need to approach the patients door step. If not patent can book the ambulance like an Ola taxi system, which will help the patient to the approach the nearest hospital for emergency care.

In the home technology implementation with the help of interiors and censoring system and talk back system need to be implementated to better services. Every equipment in the home should be attached with remote control and that can be easily accessible to the old age without any difficulties. More over food services,

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medical facility, shopping, and other almost all other facilitates should be connected with the etechnology which will be able to receive timely help and support for the old age, even though they are living alone.

2. Physically and Visually Handicapped
Physically and visually handicapped are also finding difficulty to move around. So they should be able to move around with adequate moving equipment which should be connected with supportive technologies. Supportive technologies like rote based moving wheel chairs; direction censoring moving stick connected with talk back system to the visually challenged will help them to ease their day to day life. Home equipments are also connected with e'technologies with sensor facilities will help them to do their task very easily

3. Students
Students can access the facilities with e' technologies which will help them to access globalised educational facilities .The technology which should able them to connect with virtual class rooms and they will be able to see the classes of foreign university lectures which sitting in their home. So that their efficiency will go higher and able to compete with international students. Thus the amount which is used for foreign education can be reduced. Foreign universities can collaborate with Indian universities and the teaching and learning is possible in anywhere in the world. Universalized education makes the youth to be more encouraged and to be more enthusiastic towards attaining a new type of educational strategies.

4. Children
Children require support system with the help of technology that will help them to monitor in day time within their home. Also a device is connected with their dress /watch it will be able to monitor by the parents to their children in their absence. If they met with any danger/or attacked by somebody emergency alarm will be on and it should be given direct message or alert to the police and the direction of the place where the child is there.

AGENCIES OR INSTITUTIONS WHICH USEFUL FOR THE EFFECTIVE IMPLEMENTATION OF E' TECHNOLOGY

1. Housing Sectors
2. Business organizations
3. Educational Institutions
4. Hospitals
5. Municipality
6. Police Stations
7. Welfare organizations
8. Bus Stand
9. Railway Stations
10. Public Places.
11. Traffic Areas.

1. Housing Sectors
Government should insist that every home should be constructed with the implementation of e' technology where each individual family specific programme should be connected with it. This will help the family members life will be more easier and to prevent dangers in the future situations.

2. Business organizations
Business organization should come up with new technology implemented product with automatic facilities which will help the citizen life easier. Every product should have the facility to operate and monitor with the product owners mobile and direct facility to utilize its service very effectively.

Example.: Car company should be connected with e' technology in which the passengers health system should be monitored and to give alert like a pedometer in the smart watch.

Mobile phone should be connected with person specific programmes which should monitored, give alert, and help them to support their day to day life with the implementation of appropriate technology.

3. Educational Institutions
Educational Institutions should be designed in such a manner that wifi connected network and it should provide updated information about the topic which is discussed in the class room with the talk back and response system. Student's attendance should be noted automatically with the help of system when the student is entered

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into the class. It also give a facility and an opportunity for the parents to monitor their attendance and class room situation and their attention and performance in the class room.

4. Hospitals

Hospital health care system should be connected with e' health care facilities in which every system should be connected with specific technologies. Patient records can be saved in the e' file and modified by the staff. This should be available and accessible by the patient through e'portals. Even online follow up also facilitated with the help of effective e'health care technologies. All the reports and records along with test findings and reports should be uploaded time to time and connected with patient record. Online record of the patient will be give an alert to the patient for the next consultation and the health care professionals should be ready to take care of the patient in time and to provide appropriate guide lines through online.

5. Municipality/Corporation

Municipality need to implement e technology in all most all the functional areas. All types of registration process should be online like birth certificate, death certificate, adhar card, application for construction permission for house, electricity facility and water connection, registration for various activities related to the general public requirements which are initiated and implemented by the municipality/corporation. At present pass prt can be applied through online same procedure with increased efficiency and access all the activities of the municipality need to implement with the help of e'technology. Apart from this all the areas of the corporation or municipality need to be connected with wifi-enabled network work system and to be connected with adequate devices to monitor the system and its function.

6. Police Stations

Police station and nearby areas under its limit need to be well monitored with the effective e technology with efficient devices. Camera surveillance areas need to be connected with all police stations and to give alert to the police station and concerned officials if any kind of crime is happen in the public places. Ambulance facility should be available incase any emergency alarm ring based on accident alert.

7. Welfare organizations

Social Welfare organizations should be studied general public requirement by conducting surveys and research. This should be regarded as an implementation project in collaboration with government and private agencies with adequate professionals support in the concerned areas. There should be an appropriate monitoring system should be implemented to correct the drawback of the system which are implemented.

8. Bus Stand

General public places and the bus facility availed through GPS initiated system which can be monitored by the general public in their mobile and it will be more effective. Card based money transaction even in local buses which provides cashless transactions even in all mode of travel.

9. Railway Stations

Railway online ticket reservation is possible in the present situations but the facilities availed in the system as per the pressing a button while travelling. Facilities in the train should be availed to the citizen with appropriate technologies are more encouraged in the current scenario

10. Public Places

Public places should be connected with e technology for all facilities

11. Traffic Areas

Traffic areas need to be connected with e technologies because in future driver less car will be on road. Such a kind of advanced system should be initiated and monitored in the primary level and later more advanced system should be incorporated. Traffic signals connected with the movement of vehicles and pedestrian travel facilities should be arranged

IMPLEMENTATION WITH THE HELP OF FOLLOWING HUMAN RESOURCES

1. **Computer Software and Hard Ware /Net working Specialist:**

Computer software and hard ware specialist will be able to identify the right programming and the required software and hardware to implement the e technology effectively in almost the all the field.

2. Engineers

Engineers from all sectors can be modified construction related requirements with appropriate interior and exterior facilities which are matching with e technology implementation.

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3. Government Officials
Government officials who should be capable enough to implement the e'technology based on the system in all levels of their work which fulfill the requirements or the demand of the society.

4. Officials in the Health Care Sectors
Health care officials including Doctors, Nurses, and paramedical staff should be trained according to the need and specifications of e technology to implement effective health care system

5. Officials in the social sectors.
Official in the social sectors like District collectors, welfare Officers, Political party who are in the ruling positions and other officers who are playing a prominent role need to be expertise in the e'technology and its implementations in the country.

6. Women
Women who are included as the half of the population in India. It is identified that majority of the educated women are not going for job. It is not recommended and the country should take an effective step to utilize the women human resources for the effective implementation of e'technology in all sectors of the country. Women should be properly trained and use their efficiency in implementing e'technology in the country and thus the country will progress in all areas and economical development will possible along with more facilities can be availed to all citizen of the country.

7. School and College Students
Students are considered as the future citizen of the country. Most of the students in this generations are well versed in new technologies. Country can utilize this talent from all younger generations and motivate them to be more expertise in the field of technology. They need to give awareness to the older generations about the technological advancement and its effectiveness.

Case Model: E'Health care Technologies in the Health Care Sector This e'health care model will helpful to get an idea about need and importance of e'health care technology with specific implementation plan in the country

1. Need and demand of health care system with appropriate use of e' technologies
2. Health care finance and operations and health care programmes and appropriate resources and its utilizations with the effective use of e' technologies.
3. Current issues in health care with the implementation of e' technologies.

1) Need and Demand of Health Care
It implies the requirements of populations in the health aspects and health care requirements of the population with the appropriate use of e' technology as a part of their heath care . The demand specific e'health care programmes need to be implemented in the health care sector and to analyze what extent it meets the requirements of the stakeholders of the e'health care programmes which are implemented.

Quantification and qualification of health is the prerequisite of e'health care demand of the people in need of health care services and translated it into the form of e'health care provision through various health care implementation programmes and strategies. Implemented e'health care programmes can be analyzed on various indicators of health care like life expectancy, morbidity and mortality rate. The determinants of health care falls beyond the health indicators and its impact on health care sector with the effective utilization of e'health care system. The advanced health care technologies in heath care sector meeting the demands and increasing the capacity for prevention, diagnosis, treatment and cure of disease, and rehabilitation of the needy people in the society based on the health care aspects. As a total improvement in health care and to attain its high standard with appropriate use of technologies.

2. Health care finance and operations and health care programmes and resources and its utilizations.
These health care finances and operations directly connected with the political and socio-economic traditions of the society. It emphasis on the health care objectives and as per the requirements financial aid will be provided to implement the health care programmes. Adequate e'health care delivery of programmes according to the objectives, especially equity, efficiency and availability and affordability of health care.

To finance e'health care system, the allocated money has to be transferred to each health care department from population / individual patient. Country need to insist third party to pay or to pay insurance for their future health care requirements. This is possible through the health care provision by the shared responsibilities of sick and the healthy individuals who are insured for health care provisions. This system will help the poor sick and

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healthy at the same time and able to adjust the payment of health care facilities in different levels. This system reflects the solidarity of health care system in the country.

3. Health care Resources and Utilization:

Allocation of resources for the health care system and its effective utilization especially in the health care aspects. Each health care state will be complex in allocation of health care facilities. Resources and facilities are varied from hospitals to clinics and surgeries. Major resources and facilities are identified as hospitals, primary health care and ambulatory care.

Prerequisites for the Implementation of E' Health care Technologies

1. Analysis of Health care technology implementation on Different Levels:
2. Health Care Suppliers /Providers point of view:
3. The positive aspects of Health care system:
4. Provision of health care and its technological implementation based on the need and demand of the people
5. Health care technological implementation requirements based on need of health care system and it is identified based on health care indices.
6. Identification of health care inequalities and provision and adequate steps to maintain equality in all the levels with the effective implementation of health care technologies.
7. Appropriate organization of finances through general taxation for health care provisions and the free flow of finances on various levels through online transfers.
8. Appropriate and adequate Health care expenditure on various levels and its data need to be recorded with effective technology.
9. Universal rights of health care, access for all through appropriate implementation of technology to monitor and analyze the implemented programmes.

1. Care and technology Providers:

Awareness generation requirements on different technology implemented in health care sectors

Identification and appropriate utilization of technology in the health care sector.

Research and development is more required to implement appropriate strategies and programmes for the innovative technologies in the area of health care. This provides adequate implementation of customer specific health care technologies which will minimize the human resource requirements.

Various models of implementation studies in the same sector, especially the welfare technology need to be studied and adequate changes and modifications need to be implemented as per country specific requirement.

1. Disease specific limitations in the implementation process of technology in health care sector.
2. Customer's point of View
3. Appropriate Utilization of health care resources.
4. Availability of health care services
5. Affordability of health care provisions
6. Accessibility of health care facilities.
7. Customer specific limitations
8. Lack of awareness on new technological implementation in health care sector.

1. At present the implemented health care technology is modifying based on the requirement but there is a new and innovative method to be adopted for the changing scenario for the better implementation of health care technology, an entirely new technology need to be developed for better performance for the appropriate implementation of technology and overall promotion of the health of the individual.
2. There is a requirement to access the existing health care technology with the effective tools to identify the impact and requirement of modifications or implementation of new technology. It can be effectively managed through a website with adequate connectivity. We need to select the appropriate and efficient tool for evaluation

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3. The person centered approach which denoted in the first principle focused on creating a separate person's specific programme for health care technology which will be more effective and applicable in various situations which are affecting the person's health due to various factors which are influencing health of the individual. This should be monitored either through the case study method, observation or survey method as a tool for the evaluation. The assessment will help us to fix the positive and negative aspects of implemented health care technology. Based on that we can modify or implement the new system.
4. Person centered approach will be most applicable in individual situations due to its specific concern in each and every health care aspects of the individuals with effective monitoring of his health condition and its appropriate health care management in time.
5. For better assessment lot of research need to be conducted with the effective and innovative technology focusing on person centred approach. The person centred approach can be developed with the help of adequate tools such as questionnaire, observation, test, standardized scales or case study methods with technologically adopted software.
6. There are various methods of with technology adopted patient centered system.
2. Computer history taking systems
1. Most Computer History Taking Systems (CHTSs) are designed for better system in which healthcare professionals can elicit information directly from the patient, as a part of pre-consultation interviews of the patient.
2. Computer history taking systems can be used in a variety of clinical settings , while eliciting data directly from patients, proven particularly useful in identifying potentially sensitive information such as alcohol consumption, sexual health and psychiatric illnesses, eg suicidal thoughts etc. can be identified with proven record of family members interviews and feed back system.
3. Computer-based questionnaires are particularly useful in gathering important history taking about background information prior to the consultation, which allow more time for focusing on important aspects of the health problems in the actual consultation. These systems can also save money by reducing various costs like Administrative costs.
4. Speech software and speech completed response; computer history taking systems helps more adaptability for those with particular needs such as non-English speaking patients, patients with hearing impediments and illiterates.
5. It is more evident that that data collected electronically are more accurate and contain less errors than data captured manually such data are also more legible.
6. Health Space could facilitate a number of other modalities like touch-screen or voice-recognition equipped computers available in waiting rooms. This will, help to be introduced within a clear evaluative context.
7. Supporting professional decision Making
8. Computerized decision support systems
9. There are strong theoretical reasons for believing that improved access to relevant clinical information for healthcare professionals, at the point of care, it can translate into improvements in healthcare quality, patient safety and organizational efficiency.
10. Computerized decision support systems which provides the potential to improve clinical decision making by the practitioners with real time patient specific and evidence-based support and by providing individually tailored programmes.
11. Feedback collection helps in this aspects and evidence exists on their ability to improve practitioner performance and patient outcomes; evidence is limited to particular conditions or a clinical care aspects.
12. The use of computerized reminders helps preventative care which has demonstrated to be of improved benefit.

3 •e-Prescribing

In the recent era e' prescription is getting a great demand due to time and unavailability of doctors and inaccessibility of health care system in various places. e''Prescribing is defined as the use of computing devices to enter, modify, review and output or communicate prescriptions. e''Prescribing systems are highly required as

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it is functionality, configurability and the extent to which they integrate with other systems in the health care sector..

e''Prescribing has currently improve the quality and safety of prescribing, through facilitating cost-conscious evidence-based prescribing and in particular reducing errors associated with knowledge gaps and routine tasks such as repeat prescribing. There are evidences that practitioner performance is improved through better access to these guidelines. Patient outcomes is less studied and when assessed, most studies have not been able to demonstrate a clinical benefit.

Poorly designed ePrescribing systems are in failure and to point out existing socio-techno-cultural issues associated with the introduction which can lead unexpected new risks to patient safety.

4. Self reference :

As a Health care provider: Since the writer of this paper was worked as a health care provider and have a direct connection between the stake holders of health care provisions on various levels. Analysis of health care facilities with technological impact is implemented was detected in terms benefits and limitations which is also emphasized in the paper.

CONCLUSION

Implementation of technology is inevitable and to be implemented in various levels with appropriate implementation programme. Accountability of each programme in each sector needs to be analyzed and adequate modification and technological up gradation need to be enhanced based on the requirements of the needy.

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AUTOMATION IN RECRUITMENT PROCESS: AN EXAMINATION

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ABSTRACT
Technology has influenced our lives in many ways and the examples are many. The tech terminologies like algorithms, artificial intelligence, machine learning etc is bringing lot of changes in the recruitment process. There is lot of pressure for the recruiters to find the right candidate from the mass. Automation help to reduce time and cost involved in the recruitment process. But there are negative aspects if the process is conducted without human involvement. This paper tries to find out from the literature and few respondents the influence of automation on recruitment process. The affect of overshadowing of technology on recruitment process is studied to understand the area where technology has to be restricted. Human participation is required at some stages of recruitment for the process to be effective is the conclusion of the study.

Keywords: automation, technology, recruitment, recruiters, candidates

INTRODUCTION
Technology has revolutionized the recruitment process. This process has become a very important activity and is not the sole responsibility of the human resource department but of the heads of the different teams and departments. Identification of the right talent and skill has become very complex. The demand of various capabilities is also changing because of the volatility in the technology and job market. Mundane tasks related to recruitment have been reduced through technology. Many innovative solutions using algorithms, machine learning, artificial intelligence etc has been playing a major role in this facelift. Application tracking system, job boards and Chatbots has brought changes in the process of recruiting. Digitalization has replaced paper-based methods of recruitment. The talent acquisition has become technology oriented and has become less time and money consuming.

When compared to the traditional method there are many different ways by which recruiters nowadays acquire talents. Social media, job boards, emails and SMS are some of them. Social media platforms have helped recruiters to post brief and attractive job posting that can reach a large audience. The technology advancement can post job vacancies, track and collect information of the candidates with less time. The job description can be written based on the job, business requirement and culture. Automation helps to combine candidate's skill and experience and can present in a structured manner. Algorithm driven platforms are good in identifying the top performers and removing the candidates that does not match with the job the company is looking for. So the talents can be prioritized and decisions can be taken with much wastage of time. It is skilful in identifying the previously applied and rejected candidates' applications. Technology can remove biasness and can even carry out interviews. Through technology candidates can receive the status of their application automatically. (**Stephen & Brown 2017)**Thus recruiter's job is reduced considerably and applicants find the process less cumbersome. There are occasions where candidates are asked to record and submit a video answering some standardized questions. This video is analysed using technology and selected candidates are invited for personal interview. Through technological intervention the body and facial gestures and voice modulations are analyzed in-depth before short-listing the candidates for the face-to-face interview. Chatbots are used to interact and communicate with the candidate. These interactions also help to evaluate and grade the candidate for the particular job. These communications are also useful for the recruiters to understand the expectations of the job seekers. Recruiters can follow the job seekers who attend a job fair with the help of location data. The recruiters can forward the job vacancy advertisement details to these candidates. This is like creating a boundary around the likely candidates.

OBJECTIVES
To understand the revolution happening in recruitment process

To find out the pros and cons of automation in recruitment

To detect the opinions of the youngsters about five 'A's related to automation in recruitment

There is no doubt that technology has revolutionized talent acquisition process. It is helping recruiters to process and screen the applications of candidates faster and select the candidate with less time. The automation has definitely made recruiters smarter by saving money and time. But excess of intrusion of technology into this process may reduce human involvement and lessen job opportunities in recruitment process. This has created a sense of fear and worry for the aspiring human resource professionals.

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There is lot of changes in the recruitment process, nowadays. The automation has made the process easy and less expensive. The changes are depicted in the Table No.1.

Table No-1: The changes in the Recruitment Process

Traditional	Modern
Advertisements in Newspaper	Job portals, social media platforms
Consultant	Automated Hiring System
Demonstration	Games & Simulations
Manual application screening	Applicant tracking System
Human resource planning	Human Resource Analytics

The Recruitment process has been simplified through many ways as explained:

APPLICANT TRACKING SYSTEM

Applicant tracking system assists to eliminate, follow and recruit employees. This method helps to process the resumes received by the company either directly or through social media to employee potential candidates. (Abourahma, 2017) This process is highly time and money saving mechanism. The application that is entered in the company by the applicant, online is uploaded to the database and is later transferred to another system based on the acceptance of the candidate at different levels. Applicant tracking system can focus towards those resumes that company is looking for using the keywords. This, help company to find the candidates applying through job posting, job referral or on a job board. Through this system recruiters can reduce the time to choose the best candidate for a particular position. Another feature of it is that it breaks the data entered in the application form to a style that can be reviewed easily by the recruiter. This system helps to add notes to keep a contact with the candidates. Also it helps to send the rejection letters or can schedule for next level of interview in a manageable manner. This tracking system can be said to be highly comprehensible, trouble-free and methodical. Some of the applicant tracking systems include JazzHR, Greenhouse, Recruiterbox, ClearCompany, Hire, Create Talent, Workable, etc to name a few. The advantage of this system is that the resumes overlooked by the human eyes can be captured and reviewed. To get it noticed by the recruiter through this system, candidates can prepare resumes through application tracking system so that resume is scanned and ranked to be selected. Such resumes will be crammed with keywords for the software to select. So if the resume is written based on individual skills, knowledge and ability using the keywords will help to match with the expectation of the company. It is essential to mirror the keywords in a resume according to the requirements in the company for the resume to be selected through applicant tracking system.

SOCIAL MEDIA NETWORK AND JOB BOARDS

This has transformed recruiter's efficiency to attract prospective candidates. Some of the social networks like Facebook and LinkedIn have become a great advantage for recruiters. Employers exhibit their company's requirements and their brand image and candidates can create their profile and include personal information. Job boards are also used to improve candidate's experience. Candidates can use it as an application on the phone. Some other social networks include Monster, The Ladder, CareerBuilder and Drinnle.

SIMULATION AND GAMES

These exercises were used to gauge the technical know-how. But nowadays it is utilized to assess the behavioural capability. These characteristics are difficult to measure. Using this, exercises are created to solve hypothetical situations. This exercise would help to understand an individual's normal reaction to the created situation. These exercises are found to be helpful to understand the hidden capability of the candidate who has applied for the job.

HR ANALYTICS

Data focused recruitment help the organization to hire and retain the right candidate. When enormous data related to employees are available with the recruiter, it can be converted into action oriented information. Analytics has helped in planning, prioritizing, examining and evaluating the recruitment process. (Adams, 2017). The pre-hire and superiority of hire can be evaluated using analytics. It has become a component of talent acquisition. Data related recruitment will help to measure some of the important variables of hiring like hiring cost, hiring time and hiring quality. Artificial intelligence has helped to acquire the right candidate and

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has provided satisfaction to both recruiters and candidates. Through this intelligence some of the biased variables like language, gender, religion, region etc can be removed while short-listing and selecting the candidate. It can examine hundreds of resumes with a short time compared to screening with human involvement. Moreover, it can classify the resumes based on experience, qualification etc towards a particular job. Nowadays, chatbots are introduced that communicate with the candidates to clear the doubts that arise in the mind of the candidates and receive responses that are tailor made.

AN EXAMPLE OF FULLY AUTOMATED RECRUITMENT PROCESS:-

Unilever who is a giant in fast moving consumer goods started an all-digital recruitment process which involves four steps. Initially candidates have to fill an online form and have to participate in different games to assess the various capabilities like decision making, problem solving, interpersonal skill and many other skills. Feedback regarding the achievement after participating in these games will be provided to the candidates. Following this will be video interview. The candidates who are selected from the previous step only be allowed to go through this stage. Video interviews are ranked digitally and the candidates match to the job is examined. Those who cleared this round will be allowed to enter the simulation test. The introduction of totally digitalizing the recruitment process is in its initial stage. The time required to hire the candidate has reduced considerably but the selection of right fit has yet to be analysed.

There are portals related to job where applicants can improve their skill in writing their own resumes, enhance their skill related to job-searching and interviews. They can even learn how to optimally use their personal networks.

LinkedIn Talent insight is a self service product that accumulates the analytics regarding the talents, their skills and other information like manpower composition of other companies. These will help the recruiters to take wise decisions on manpower sourcing, planning and development.

PROS AND CONS OF AUTOMATION IN RECRUITMENT PROCESS

There are many positive aspects of automation that recruiters can consider while undergoing recruitment process. This process involves more human involvement traditionally. Automation of recruitment process reduces this to greater extent and makes the task less tedious. There are some negatives that have to be addressed.

Table No.1 Pros and Cons of Automated Recruitment

Variables	Pros	Cons
Time saving	Instant reply to candidate after applying to the job.	All doubts cannot be cleared
Automation tools	Lowering time to complete the entire process	Far from reality. Consistency and accuracy has to be checked
Access	Any time access and less risk of ignoring	Limited conversation as it is fully automated
Data Driven	Top talent is decided by data	Human judgement capabilities are ignored
Performance assessment	Digitally assessed performance is biased-free	Cultural fit is disregarded
Cost effective	Best fit can be identified using analytics with less amount of time.	Un-standardized, atypically described resumes will be ignored as it is key word specific

METHODOLOGY

A sample size of 49 samples was collected from the youth of the age between twenty and twenty five years. All were students and were doing either their graduation or post graduation. The respondents were asked five ‘A’s. There were 2 to 3 items under each ‘A’ to understand the mindset of the students who participated in the study.

Items	Agree	Disagree
Awareness of technology in recruitment	√	
Attention towards the technology invasion in recruitment	√	
Alertness to upgrade personal skill & knowledge	√	
Amazed on relevance of technology in recruitment	√	
Apprehension on new technological developments in recruitment	√	

DISCUSSION

All the respondents agreed to the fact that the impact of technology related to recruitment has both pros and cons. All were aware of the technological invasion in recruitment process. It was quite stunning that all the

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responses were unanimous. They are aware and are putting their effort to upgrade their skill and paying attention to changes happening in the recruitment world. There was an open ended question to express their opinions to automation in recruitment process. There were concerns among the respondents. The major uneasiness was related to the complete automation. Complete automation may not be able to access the human anxiety and curiousness. Human intrusion is required is the opinion of majority of the respondents. Monotonous jobs in recruitment have to be automated but human touch makes the process interesting and help to select the right candidate to the right job. The focus only to reduce the manpower and cost may result from deviating in finding the right candidate. This may result in selecting a wrong candidate. Too much intervention of technology may result in wrong decision making. Deshpande (2018) in her paper mentioned that the digitalized interview can measure the ability of the candidates to perform the job through simulation, empathy and other attention. The way technology assess the behavioural and emotional aspects is yet to be confirmed. The minor details of human behaviour examining using technology have to be redefined.

The administrative time can be reduced considerably using technological intervention. This has to be utilized considerably for the efficient time utilization of recruiters. In the same way mundane jobs can be carried out using technology. But the minute details have to be performed using human participation.

The fear of redundancy is an undesirable thought. The recruiters who are not ready for upgrading the skills may not survive. With improvement in technology new jobs are created. New training modules have to be generated and experts have to be invited to train the employees to update the new skill. The new entrants with this new skill will get an advantage for employment. Technology has to be utilized for the useful purpose. It should not overpower human capabilities. There are some factors like culture, behaviour, emotions etc that require personal touch (Erickson, 2017) Human interference at the final stage of the interview to access the right candidate for the particular job cannot be replaced by technology. The technological involvement with recruiter's presence makes the recruitment process effective to select the apt candidate for a suitable job.

CONCLUSION

Automation has been introduced to simplify the recruitment process and to make it more efficient for both employers and applicants. In the process of automation many of the miniature factors related to recruitment and selection process are ignored. The overlook on these factors may have a great impact while selecting the right candidate. Recruiters must be careful in selecting the right software and the shortcomings of it have to be rectified using human intervention. The focus should always be to find the right candidate than on the cost effectiveness of recruitment.

Now the role of the recruiters has changed and new skills are required when technology is introduced. The new role is to represent as a relationship builder. The emotional and psychological relationship with the prospective candidates will add value to the job. Usage of technology to irrelevant areas will do more damages than goodness to it.

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INDUSTRY 4.0 - INDIA'S READINESS AND IMPLEMENTATION

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ABSTRACT
Industry 4.0 is the rapid pace of digitization in manufacturing today. This paper introduces relevant features of Industry 4.0 in relation to innovations in digital technologies, strategic planning, key technologies such as robotics and artificial intelligence, sophisticated sensors, cloud computing, IoT and other applications. This is the paper to examines the opportunities and challenges that are relevant to Industry 4.0, in the context of sustainability for the implementation that takes a different perceptive on industry sectors, different company sizes, and the organizations plays a role as provider or user of Industry 4.0. Finally, this paper based on the adaption and the readiness of India for this fourth industrial revolution.

Keywords: Industry 4.0, Readiness, Big Data, IOT

INTRODUCTION
Industrialization started with first machines that mechanization, steam power and water and steam power that our ancestors practiced. In the second era, we had electricity a boon which transformed to a birth of rapid production. Then advent the computers that brought in transformation became an advent for automation in replacing workforce in the third revolution of development. Now we are to enter a new world of Industry 4.0, in which bridge with computers and automation in an altogether a new way, the robotics connected remotely the computer systems with integrated machine learning algorithms that relate to robot and with minimum human support. This Industry 4.0 has highly intelligent connected systems that create a fully digital value chain. This is setup on cyber physical production systems which can integrate communications, technology, IT, data and physical elements, wherein these systems replace the traditional units into smart factories. Here the aim is that to transform the way the machines convey to other machines and distribute in real time resulting in rapid transformation in the ecosystem, not only for few but for the entire industrial sectors.

The growth of technology and its rapidness is the implications of integrating Internet of Things and Services (Iots) technologies into industrial value creation. This is a new paradigm shift for digitization and a connection in manufacturing are referred to as "Industry 4.0" or "Industrial Internet of Things" (Idiom), this is the transformation to established factories into smart and autonomous production (Arnold, Kiel, & Voigt, 2106)This enables real-time capable horizontal and vertical Internet-based machines, connectedness of people, and objects and communication technologies for the dynamic management of complex business processes (Bauer, Hämmerle, Schlund, & Vocke, 2015). Associated with this flexibility, Industry 4.0 aims at overcoming contemporary challenges and opportunities, like rapid volatile markets, intensifying global competition, and demands, needed customization, as well a change in the way we innovate and the product life cycles. The fourth revolution are used to target the challenging requirement and an approach to deal with these challenging requirements (Arnold, Kiel, & Voigt, 2106) (Byrne). It is the combination of innovations in digital technologies and many other applications. Companies are scare of its opportunities and challenges. However, it is essential to understand the underlying dynamics manufacturing technologies in implementation. It is high practical and theoretical relevance of digital and connected technologies Thus; this study is to focus on opportunities and challenges that are related for Industry 4.0 sustainability and in context of implementation on various company sizes according to Indian market and infrastructure. The study explains there is still uncertainty and confusion among researchers, consultancies, politicians and practitioners about the challenges. It is very attractive because it promises to provide manufacturers with profitable business models and a well improved workplace condition.

The study states that it would increase the competition and challenging change management (GARBEE, 2016) and slow realization of this novel manufacturing paradigm, which is ascribable to unclear opportunities and challenges perceived by industrial manufacturers (Julian Marius Müller * OrcID). The economic research on Industry 4.0, little attention must examine the opportunities and challenges that considered relevant for the implementation of this revolution.

The antecedents of Industry 4.0 are not clear which opportunities and challenges are as implementation in manufacturing companies (Kagermann, Wahlster, & Helbig). Industry 4.0 future as per studies is that it would transforms not only industrial production, even society (Kane, Palmer, Phillips, Kiron, & Buckley, 2017), economic, ecological, and aims at social achievements (Byrne) (Kiel, Müller, Arnold, & Voigt, 2017) at these three proceeding Industrial Revolutions.

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The objectives referring to the Triple Bottom Line of sustainability (Marr, 2018) are based on the outcome of a research World Commission on Environment and Development's "Brundtland report" (Mathew, Elizabeth). This Triple Bottom Line of sustainability developed into UN's current "Sustainable Development Goal 12—to ensure sustainable production methods and consumption.".

This result in decrease environmental impacts of industrial manufacturing which will rapidly increase and expecting companies to not solely focus on profit maximization (Mike Bonner, 2017) (Mullanyc). The Industry 4.0 users or providers lack differentiated analysis varying in company sizes and industry sector. There are studies on environmental impacts which referred in scientific literature and in many industrial programs. (Proschool Online). As Bernard (Marr, 2018) refers that why we should adopt the Industry 4.0, this will help to connect billions more people to the world of technology using web, this will improve drastically the efficiency of business and organizations, potentially help to regenerate the natural ecosystem through better managing asset and even rectifying the damages done in previous industrial revolutions.

Components of Industry 4.0

In comparison to Industry 3.0, the industrial change is to see the advancement of digital technologies. The fusion between physical and virtual into a cyber-security system may have a huge impact on manufacturing and automotive sector. (Grant Thornton, 2018)The latest integration between information, communication and manufacturing are:

- Industrial IoT that knit together with smart sensors that allows real-time data collection;
- Ubiquitous broadband, allowing large amounts of data transmitting between people, machines and production sites;
- Cloud computing, allows instant storage and the date of availability at any location,
- Big data analytics, allowing huge volumes of data processed collaboratively (Grant Thornton, 2018)

The study state that Industry 4.0 is a disruptive convergence of digital technologies that going to reform the manufacturing beyond imagination, in the availability of data volumes, connectivity in system integrations, advent of analytics and advanced intelligence capacity in machine learning will bring a change in transfer of digital instructions to the physical world.

Companies may not be interested to start the efforts to digitize factories as seen at Siemens, Bosch, Daimler and Deutsche Telekom Among others, the introduction of Industry 4.0 can lead to sensor packed products; connected to the internet to supply better products and services to their customers. Here are the 5 topics that helps us to rate the implementation of this revolution. (Kagermann, Wahlster, & Helbig) for 1. Industrial policy dimension: based on traditional values a new business models which innovated into development II. Employment political dimension: high skilled jobs of development III. Dimension data security: protecting confidential data form unauthorized access IV. Middle class company's policy: dimension of innovative policies of the middle-class companies V. The regulatory dimension: architectures and application to achieve competitive advantages. There is huge impact on automotive industry, it has a potential disruption in both processes and products. It could be a 360-degree changes in the way we work in each sector.

Industry 4.0 using business intelligence entails to handle volumes of data software to interpret, and address and transfer to different part of business using the data and back to the supply chain partners and enterprise resource planning system. There will be large variation in manufacturing sectors, the automakers need to be feasibly built processes and adapt to changes in the system.

Big data: Too much data makes it difficult to find the relevant information and trends that can lead to some intelligent analysis, where "Big data" and analytics used. They make it possible for the performance of an individual part and its operating restrictions to prevent future production issues and take preventative action. Cloud computing: Used for applications and technologies like remote services, color management and will continues to grow. The industry is going through large shift in using cloud solutions, which is a benchmark in performance and the role in areas of other business sector will increase rapidly. With continuous RD and advancements in cloud solutions there is a continue shift in technologies, machine data and functionality. The cloud solutions supply a better performance models, faster updates, and delivery options than standalone systems.

Internet of things (IoT): Key functional in Industry 4.0, IoT is a system that is interrelated computing devices, and digital machines and mechanical, objects and that people with unique feature or an ability to transfer or connect to data over any network without any requirement of human interaction or human-to-computer. Smart

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watches have become the wrist watch in the by enabling text messaging, phone calls, and more. It has revolutionized the fitness world by the devices as Fitbit and Jawbone. With the proper connections and data, the IoT can reduce noise and pollution and solve traffic congestion issues, Autonomous robots: Automate production methods helps to complete tasks intelligently with minimal human interface or input.

This has empowered across the various sectors and powered by the concept of Internet of Things (IoT) integrating with central server or database, robotic actions that coordinated to a greater level that is to a level than ever before. This connects devices to communicate with computer machines and other applications. Materials and goods that transported to different floor in factory or across floors using AMR that is Autonomous mobile robots This will avoid any obstacles and will in real-time

Augmented reality (AR): Augmented reality grows in use by providing real-time information in an effective manner to allow humans to better integrate and interact with electronic systems. Examples are like the transmission of information that can view in 3D view, different devices or equipment.

Cyber security: This is based on the Security and enable reliability to the successful implementation of modern and a truly digitized, workforce and a different production work that can use different benefits in a connected environment. This will move away from the usual closed system, it will be that security of information is the paramount towards increased the connectivity from the cloud and IoT.

Additive manufacturing: This is small-batch application which is important to individual and other personalized products. This will directly or indirectly improve designs, increased performance, in customer or by suppliers to flexibility, and cost effectiveness. System Integration: Highly automated within their own operations and struggle to communicate with other systems. Standards and open architecture support the easy transfer of information both to the business and to the customer/end user.

This can involve as JDF for job profile, CxF for color information etc. by defining common languages for data exchange. The study states that it should be an inspiration to act - to design, configure, use the manufacturing system, and disintegrate it after performing the task. The infrastructure and technology overlays make it possible to better and faster use information, this results in a shift of the foundations of information transfer in production activities.

It is that the product or service will be an integration axis around which an ad hoc system is ready to develop, produce and offer, and to supply service and finally dispose. The study states that it should focus on the problems or needs of society along with innovative initiative in search for applications and technology.

Readiness: Industry 4.0[1]

Many countries are transforming the systems, infrastructure and technology for Industry 4.0. Singapore stays number 1 ranking in the world followed by Finland and Sweden while ranks the 91 position as per the study of (WEF) that is the World Economic Forum. The holistic research by WEF states that is depends digital technologies on each country to have and drivers' necessary things to meet their required and potential technologies needed. The nature of innovation has changed the digital revolution, this will allow new business models which will increase based on different on digital technologies. The many issues that are urge and tremendous pressure to innovate technology and trailing out of rapidly growing digital population by businesses and companies. This develops new types of behavior like leadership and governance mechanisms etc. As per the Network Readiness Index in 2013 India was 61. In 2016, India was ahead of Pakistan (110) and Bangladesh (112), but behind Sri Lanka (63), Malaysia (31), and China (59). Singapore stays number 1 for the second year. The US ranked at 5th position. The WEF's report says clear that there is huge gap between developed nations and developing ones because of many factors.

It is clear stays that India must work towards the digital economy has divided the developed countries and developing nations into two segments. The ranking of developed nation, such as the U.S, and Singapore ranking is almost unchanged. But many developing nations, like India saw a drop-in ranking. This Industry 4.0 has become a major study and innovate story in Germany's engineering sector. Germans have highlighted the opportunities but not yet the challenging milestones.

The study says it very important to assess the readiness of industrial enterprises as manufacturing sector is currently facing substantial challenges in industry 4.0. These challenges are about disruptive concepts like IoT, cloud-based manufacturing or cyber physical systems. The will be increased scenarios in all firm with complexity in all levels which will create different respective in organizational uncertainty and must develop adequate strategies and technology efficiency.

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A Foundation for mechanical plant engineering, and information technology of (VDMA) known as German Engineering Federation has coined a six-dimensional model to assess the readiness of the enterprises, wherein VDMA experts and some industry representatives are part of the advisory capacity in the development of the study. This is very potential and indeed great for both providers and users to implement the mechanical and plant engineering through the Germany's spectrum of Industry 4. 0.. But there are many unresolved questions, uncertainties, and challenges. The readiness study addresses this need and offer insight.

It also highlights that many companies have a challenging milestone to face to cross the path of Industry 4.0 readiness. As per the current understanding of Industry 4.0 the readiness of the enterprises can assessed on the below mentioned six dimensions: Six-Dimensional Model Strategy and organization—It offers a new opportunity to develop a new business models apart from improving the current processes using digital technologies.

The current openness and the cultural interaction can examine using the existing knowledge strategy implementation of Industry 4.0 and reviewing strategies through a system of indicators for better operation. It also measures the enterprise and understand the use of technology and innovation management and the current state of RD in Digital modeling Smart factory- It is in a production environment that without human inventions it can organize themselves, where the logistics systems and production systems primarily organize themselves depending on cyber physical systems (CPS) links the virtual and physical worlds by communicating these through an IT infrastructure/IoT.

Smart operations- In production the technical requirements and its planning which are to realize the work piece in self-controlling are known as smart operations. Smart products – 'Smart factory' and 'smart operations' and are critical components of a unified 'smart factory' easing automated, flexible and efficient production. Physical components equipped with other applications such as sensors, RFID, communication interface etc. to collect data on their environment and as per once requirement. Readiness in the smart products shall be determined by the ICT add-ons functionalities using the extent of data from the usage.

Data-driven services - Companies evolving from selling products to supplying solutions substantiates data driven services which used for future business models and to enhance the benefit and align with the customers. The after sales business and services business is based on analysis of the data collected and the evaluation on enterprise wide integration.

The physical products which equipped with physical systems, IT will be able to send, and receive, or it can also process the information as per the need of operational processes. Employees- Skill acquisition - Employees help companies realize their digital transformation. And readiness in this dimension can be determined by analyzing employee's current skills and pursuing ability to develop new skills as employees are most affected by the changes in technology in an organization; directly affecting their work environment. This needs them to develop new skills to equip with the digital workplace.

Thus, the above model will help to assess the company's readiness on various critical parameters and analyses the potential gaps which needs to adopt Industry 4.0 Indian companies are focusing on these six-dimensional models and are ready for big transformation. The government, public undertaking and multinational companies are working toward these areas to develop and make India ready for Industry 4.0.

As per IBEF report, the Indian Government have set up an ambitious target for increasing in contribution to have a high manufacturing output -25 percent (GDP) Gross Domestic Product by 2025, from the present position of 16 percent. The IoT, is one of the most curial aspects in India for this fourth revolution and are around 20 percent of global share in IoT market within next 5 years.

The IBEF forecast, clearly says the IoT market in India, and is to grow more than 28 percent at a CAGR of more than during 2015-2020. Government of India's initiatives like Green Corridors, 'Make in India' and many IT companies are supplying cohorts' corridors for innovation and young talents. Germany have the success story and the implementation of this technology, it is the boundary between IT sector and automotive sector is getting blurred.

Automotive industry is the major sector for innovative sectors to implement Industry 4.0. Car manufacturers are increasingly looking to supply upgraded services in the vehicle and are expecting an automated and a connected car market worth US$160 bn by 2020 – which is four times, market size of 2015-16.

With the Government rolling out Digital Strategy 2025 as per the study on Germany's efforts with digitization go beyond Industry 4.0. This is a step guide to a successful digitization, and it focus on modernizing

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manufacturing through Industry 4.0 research and innovation. It also concentrates on supplying an international playing field and strengthening data security while adhering to existing and incoming regulatory compliances such as the EU's General Data Protection regulation.

The interconnected technologies in manufactures is the unique capabilities to process the customer order and respond to customer request quickly, this will reduce the labor and time like the traditional manufacturing. Manufacturing processes are changing rapidly, leading to leaner production and improved processes. These strategies and technology can ensure the manufacturers processes are delivering information which can upgrade and guide the best performance where you can be ahead of the competition.

Industry 4.0 for Indian automotive sectors:

Industry 4.0 Is a holistic business model, automation, that integrated into an execution architecture that will bring in more efficiency in all aspects across company boundaries of improve production and commerce. The Indian automotive industry has made notable steps towards industry 4.0. the first automotive industry is Bajaj Auto to start automation in the industry.

The process of automation began in 2010, and today there around 100-120 "Cobots" (Collaborative Robots). (Grant Thornton, 2018) These cobots are the robots that are implemented in the production facilities for digitalization and latest technologies. One of the other automotive sectors, like Maruti Suzuki have managed to set up around 1700 robots, by setting up 5 assembly lines and 7 process shops. Likewise, other automotive giant player, Ford has also set up 437 robots in Sanad plant to use and manage the body shop and assembly lines.

Similar like other automotive industries, Hyundai have managed to set up around 400 robots in Sriperumbudur plant, this has helped in minimizing its labor cost. The Tata Motors have also around 100 robots in production lines Sanand Plant. Other enterprises like, Renault are doing an interesting work to prevent the accidents by improving in the automation field to process better business model. As a result, companies are warming up to the ideas and infrastructure to connected machines. Whereas Industry 3.0 was simply about automation on isolated machines, Industry 4.0 revolution focused on digitization of all end -to-end physical assets in the ecosystem concentrates with value chain partners.

The new paradigm is about the integration by 2016 Annual Meeting conducted by World Economic Forum, which held at Davos as "Fourth Industrial Revolution" (Grant Thornton, 2018)was main topic. India has a competitive space as the manufacturing landscape is changing. It is a challenge and continuous processes for countries on technical capabilities and manufacturing value adds.

Specifically, India faces competition from China and Europe and there is a risk of being out by the increasing technical capabilities of these regions as they'd on medium value segment where India has always been prominently using. Historically, China has focused on the low technology-low manufacturing value add space while Europe has focused on high technology – high value add segment.

India's manufacturing zone of comfort was always in the middle, both on the technology and value add axis. Now, a significant push from China to move up from the low technology – low value add zone and expand into the medium technology zone, thereby expanding the market for Chinese companies.

India's advantage is the supply of skilled technical labor and low cost of manufacturing. Many industries like Havells, Godrej, Bosch and players in large manufacturers companies have set up units in India. As a result, Indian has a prominent place in the Auto industry, this is a canvas on Indian economy. This a critical driver in our Indian economy which has a deep backward and forward linkages in the automotive sector wit key segments that have a strong multiplier in the growth of our economy. Every country's development is based on sound transportation growth which plays a major role in the growth and of economic and industries. India is known for its well-developing automotive industry it fulfils the catalytic role by catering variety of vehicles which includes cars, light, heavy commercial vehicles, and multi-utility vehicles like jeeps, tractors, motorcycles, mopeds, three wheelers, scooters, etc.

The expectation from India have become a major automobile manufacturing hub and the third largest market for automobiles by 2020. Expecting, India to be the sixth in the world to produce 24mm vehicles in 2016. As per the GDP report it tells that India contributes 7.1% growth in the passenger and commercial vehicle markets and ranked 5th in the world.

India's automotive industry is well-equipped for serving both domestic demand and, export opportunities increasingly, both demographically and economically. The country is in the threshold of various reforms and expected to rank the 3rd largest in the world by 2030. The 3 D Dimension is the business that the country is

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aiming democracy, demography and demand.

Many are countries are among the competition in different sectors of development. Talking about the automotive industry specifically the equipment manufacturers, the government and the customer plays a major role in shaping the industry. The key demand drivers are a part of population that are working and middle-class that expand and to remain. The per capita in 2010 grown from US$ 1,432.25 from US$ 1,500.76 in 2012, by 2018 this expected US$ 1,869.34.

- India, among the global market ranked the 12th among the high-net worth individuals with a growing rate of 20.8, India ran the highest among the top 12 countries
- There is an increasing trend in rural Agri-sector and in disposable incomes
- There is a large pool of talented skilled and semiskilled people with a strong educational background.
- Suitable government policies like automotive mission plans, lower excise duties as per the report of NEMMP (National Electric Mobility Mission Plan 2020), FAME (Faster Adoption Manufacturing of Hybrid land Electric Vehicle) these are helpful for this sector Internet of Things, which is very crucial for Industry 4.0.

For next five years, India is supposed to capture 20 per cent of the global market of IoT. By 2020, the global market is to reach US$ 300 bn. This IoT industry allows them to share and receive all data in everyday objects that have internet connectivity in a proposed development of the Internet. As per the IBEF forecast, in India IoT market is supposed to grow more than 28 per cent at CAGR during 2015-2020. The adaptation of major Indian states is taking initiatives to infrastructure to implement Industry 4.0. One of the initiative states is Andhra Pradesh that capitalize the potential of IoT in the country.

The Andhra Pradesh, government have approved and aim to make IoT hub, which is the first in the country and expected to be a hub by 2020. This is be around 10 per cent of country's market share and Andhra will be India's hub for IoT. The Green Energy Corridors to support the renewable energies and storage for smart grids that will be of great support to the industry. These corridors were set up by the Indian government to enhance the growth of digitization in the country. India have projected over US$ 1 bn as part of this initiative and set up these in states, like Andhra Pradesh, Gujarat, Rajasthan, and Tamil Nadu. The first smart factory of India is to make machines speak with one other, which make a drastic change of moving the automation to autonomy, this smart factory is in Bangalore because of its development and progress. The Indian Institute of Science's (IISc) is the Centre for Product Design and Manufacturing (CPDM), it has made a rapid progress with the investment of Boeing venture.

A smart factory in manufacturing sector are the revolution of Industry 4.0 and combined with data and IoT which the future of the revolution 4.0. As per the study it tells that the industry of smart factory industry US$ 215 bn by 2025 and most of the developed economies are to accept this. Many Indian companies are partnering with companies in IoT, M2M solutions in rapid face, through the initiative of Government through Digital India. This initiative will tackle the domestic challenges and focus on enhancement of IoT.

According to World Manufacturing Production (Report)- by UNIDO that India is in sixth position among 10 manufacturing countries by this India rating will raise to the 3 places in the world. In the global trend, the way India promote its increasing GDP is increasing steadily in Manufacture sector. Most of the countries are embarking to promote manufacturing as their major initiatives through adopting the advancements and developments in the Information Technology and Internet arenas.

German government have announced, "Industry 4.0" while governments in China and India have their own focused national programs, "Made in China 2025" and "Make in India" respectively. The main idea is to encourage multi-national, as well as national companies to produces the products in our country.

With a plethora of some challenging regulations and lack of infrastructure, the Government is working on policies and enable to improve infrastructure in key sectors. key sectors. As per the report of IBEF, Indian Government have an ambitious target to achieve 25 per cent of GDP by rapidly contributing the manufacturing sectors by 2025. (World Manufacturing Production (Report), 2018) As per the report the currently it is only 16 per cent. For India, must implement the integrating of Industry 4.0 and its principles as this revolution is a transformation in the world, we will not have any choice but just to follow. To implement these and an insight of the future the government have implemented "Make in India" to win the global market. India has unique sector where it can tap its profit and innovation through Smart Manufacturing something like pave the road by itself is the way to the latest innovation.

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This is an evolution of an agrarian society where some steps can be part of current revolution to transform India's manufacturing sector to make efficient in its operations and performance. This is a boon in the electrical, automotive and electronics.

The major area is advancement in technology, IoT, 3DP which is 3-dimensional printing the sensors, augmented reality which can built in smart production across various sectors these create an awareness for next revolution. The latest automation technologies are moving the automotive industry to the next level of technological advancement and innovation.

CONCLUSION

India like other developed countries have implemented lot of schemes and initiatives like Green Corridor, Make in India and cohorts by IT companies and start-up hub and various other schemes. As per the study it says, yes India is getting ready for this new revolution, but it has focus on many areas like education, supplying financial support for young innovators, infrastructure and other manufacturing sector. Many companies have started setting up continuous boot camp for employees to enhancing skill and adapt them to latest technology. In study it shows how Bajaj, Maruti, Tata and others have implemented the robots to produces the latest technology. This will create ripples in our ecosystem by enabling the data to increase the sales and the needs of each customer. Today few customized cars are available for high cost, but this revolution will be more of customizing the needs of each customer.

India have set up new policies and strategies to implement these and match the global market. We do not have a choice but to embrace this revolution, as this the case it is important to adapt then the Government should focus on supplying more boot camps, information centers and enhance the educational institutions to create a platform for this revolution. These measures will help the people to adapt and look for new opportunities and create new innovative methods. There are very few study's related to challenges and it important to know and find out a work around and solution to make it successful.

Appendix A. Measurement Items of Constructs

Table A1. Measurement items of constructs.

Construct	Item	Description
Strategy	Str_1	Industry 4.0 allows us to create new business models.
	Str_2	Industry 4.0 allows us to create leading solutions for our customers.
	Str_3	Industry 4.0 allows us to generate solutions that are hard to imitate.
Operations	Op_1	Industry 4.0 allows decreased costs through interconnection.
	Op_2	Industry 4.0 allows increased quality.
	Op_3	Industry 4.0 allows increased traceability.
	Op_4	Industry 4.0 allows decreased non-value-adding effort.
	Op_5	Industry 4.0 allows lowered stocking of goods.
	Op_6	Industry 4.0 allows decreased documentation and administration.
	Op_7	Industry 4.0 allows to increase the flexibility of production.
	Op_8	Industry 4.0 allows increased speed and reactive capabilities.
	Op_9	Industry 4.0 allows increased load balancing.
	Op_10	Industry 4.0 allows reasonable use of machinery data.
Environment and people	Env_1	Industry 4.0 allows age-appropriate working environments.
	Env_2	Industry 4.0 allows a decrease in monotonous and repetitive work.
	Env_3	Industry 4.0 allows decreased waste and environmental impact.
Competitiveness and future viability	Com_1	Industry 4.0 generates dependence on other enterprises for us.
	Com_2	Industry 4.0 makes us replaceable due to standardization.
	Com_3	Industry 4.0 makes us lose value creation of direct customer contact.
	Com_4	Industry 4.0 makes us replaceable due to anonymity.
	Com_5	Industry 4.0 makes us lose our market niche that ensures our success.
	Com_6	Industry 4.0 makes us lose our flexibility, requiring costly solutions.
	Com_7	Industry 4.0 makes us transparent, potentially usable as leverage.
	Com_8	Industry 4.0 generates technological dependence for us. (eliminated)
Organizational and production fit	Org_1	For us, implementing Industry 4.0 is not reasonable.
	Org_2	Customer demands are too individualized to implement Industry 4.0
	Org_3	We have too little standardization to implement Industry 4.0.
	Org_4	For us, the costs exceed the benefits of Industry 4.0.
Employee qualifications and acceptance	Emp_1	Our employees do not trust Industry 4.0 technologies.
	Emp_2	Our employees fear dependence on Industry 4.0 technologies.
	Emp_3	We expect nonacceptance of Industry 4.0 by employees.
	Emp_4	We expect lack of Industry 4.0 expertise among our employees.
	Emp_5	Our employees fear data transparency due to Industry 4.0.
Implementation	Imp_1	For our suppliers, Industry 4.0 is relevant for implementation.
	Imp_2	For us, Industry 4.0 is relevant for implementation.
	Imp_3	For our customers, Industry 4.0 is relevant for implementation.

Table-1; Measurement items of constructs (Julian Marius Müller * OrcID)

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THE IMPACT OF EMPLOYEE ENGAGEMENT ON BANGALORE METRO RAIL CORPORATION LIMITED PERFORMANCE

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ABSTRACT
The impact of employee engagement on Bangalore metro rail corporation limited performance has attracted much debate over the past. This study examines the impact of employee engagement on BMRCL performance in a Customer satisfaction as well as the factors that influence and shape employee engagement in the context of the BMRCL. To achieve this objective, a qualitative research approach was adopted for this study. Using an inductive approach, interviews were conducted to gain insights into the factors that affect employee engagement and the data was gathered and analyzed using thematic analysis. The key finding of this study was that there is an understanding of the concept of employee engagement and its impact on BMRCL performance. The study revealed that low engagement affected commitment and motivation levels of staff. The low employee engagement levels were produced by job design, ineffective communication, management approach, participation and incentives in the form of recognition.

Keyphrases: employee engagement, performance, psychological meaningfulness, recognition

1. INTRODUCTION AND RESEARCH CONTEXT

Employee engagement has become a very controversial topic in the recent years and garnered the interest of many due to its impact on BMRCL performance and long-term sustainability of the BMRCL (Cook, 2008: Marko's and Sridevi, 2010: Byrne, 2014: Mone and London, 2014). Employee engagement is integral in driving BMRCL success as engaged employees are motivated and strive to achieve BMRCL goals and objectives. The economic climate in South Africa propagates many BMRCLs to consider retrenchments, restructuring, and continuous improvement in pursuit of profitability and sustainability (Statistics SA: 2017).

In order to remain competitive in the market, BMRCL must encourage positive employee engagement as a strategic tool to attain a competitive advantage for the BMRCL. The BMRCL in this study, which focus on commercial and personal lines. The BMRCL would have to find new, innovative ways of connecting and engaging with these customers using social media, blogs to ensure this market is retained by satisfying large population. Thirdly, another development is the regulatory aspects of Solvency Assessment Management (SAM). Lastly, customers' have demanded an improved timely and safety service. In order to overcome these challenges and maintain competitiveness employee engagement must become an integral force in driving BMRCL success.

➢ Research problem

The BMRCL faces challenges such low staff morale, poor communication, lack of transparency and reduced levels of customer service (Management report: 2017). Sixty percent of staff feel that the BMRCL lacks transparency and instructions are not clearly and timeously communicated. This has resulted in low self-esteem and has reduced the level of engagement and commitment by staff in achieving their BMRCL goals and objectives. The low levels of engagement affected the quality of the work in that employees did not satisfy much of customers.

(Monthly invoicing report: 2017). Certain staff members fail to meet deadline requirements and struggle to maintain their current workload (Management report: 2017).

Solis (2015:1) identified that a major gap exists between executives and employees regarding engagement and has become a critical issue in the workplace as executives underestimate the importance of engagement and the requirements to cultivate a desirable and productive culture. According to Sathe (2017: 2) proposed that employee engagement is affected by BMRCL culture, appointing employees in mismatched positions, lack of development and participation in decision-making. A number of employee engagement trends are identified in the extant literature with regards to HR performing a strategic role, developing approaches to engage millennial, inclusive culture, flatter structures and recognition strategies (Mtongana, 2017:2)&Mizne (2017:3-4).

III. RESEARCH OBJECTIVES AND QUESTIONS

Research objectives

- Determine the level of employee engagement in BMRCL.

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- To analyze the crucial factors that affect employee engagement in BMRCL.
- The impact of employee engagement on BMRCL performance.
- To recommend employee engagement strategies that can help improve employee engagement in BMRCL.

Research Question

1. What are the crucial factors that affect employee engagement in this BMRCL?
2. What is the level of employee engagement in this BMRCL?
3. What is impact of employee engagement on BMRCL performance?

IV. SIGNIFICANCE OF THE STUDY

The study will identify the factors that influence employee engagement and hence line management and HR practitioners can improve the levels of employee engagement. From an academic perspective the study contributes to the extant literature in identifying the drivers of employee engagement in the BMRCL.

c) Literature review

This section will highlight the key literature on employee engagement and overs the definition of employee engagement, the evolution of employee engagement, factors that affect employee engagement, models of employee engagement and the link between employee engagement and BMRC performance. .

5.1 Definition of employee engagement

There is no single, universal definition of employee engagement and terms such as "employee engagement" and "work engagement" have been used interchangeably over the past two decades. Khan first introduced the concept of engagement, defining job engagement as "the harnessing of organizational members' selves to their work roles" (Khan, 1990: 694).Unanimous with most definition of employee engagement is passion, drive commitment and involvement of employees in providing consistent and sustained discretionary effort (Cook, 2008; Anita, 2014 &Carbonara, 2012). These scholars concur that the consequence of good levels of employee engagement is improved customer satisfaction, positive results and organizational performance (Mone and London, 2014; Boikanyo, 2012).

5.2 The evolution of employee engagement

The below mentioned table 1.1 reflects that employee engagement studies covered a number of variables as the concept evolved.

Author	Variables
Khan (1990: 692)	Meaningfulness, safety, availability, available resources, ROI and confidence
Schaufeli and Bakker (2010:22)	personal energy
Khadilkar (2017:74)	cognitive and emotional, positive psychological states and psychological involvement
Welch (2011: 329)	innovative and cooperative high engagement and high business performance
Saks's	Organizational engagement and job engagement

5.3 The impact of employee engagement on Organizational performance

Various scholars ascertained that employee engagement does influence Organizational performance (Markos and Sridevi, 2010: Devi, 2017: Wellins and Bernthal, 2015: Kazimoto, 2016: Alagaraja and Shuck, 2015). Marko's and Sridevi (2010:92) viewed employee engagement as having a positive influence on Organizational performance, stating that the more engaged employees are, the better the BMRCL performs and has a positive influence on performance outcomes such as productivity, profitability, employee retention, safety and customer loyalty. Devi (2017:11) shared the same view, however argued that BMRCLs' could improve various business functions by using employee engagement as a strategic tool. Wellins and Bernthal (2015:18) posited that a positive work environment encourages employees to be driven and perform exceptionally to improve levels of productivity, profitability, the delivery of superior products or services and the better utilization of Organizational resources. Kazimoto (2016:519) proposed that managers placed greater focus on financial factors to drive performance. Alagaraja and Shuck (2015: 24) identified a third link being alignment and argued that a state of engagement is only realized through the BMRCL's ability to drive alignment at all levels namely, individual, team, intergroup and Organizational levels.

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5.4 Crucial factors that affect employee engagement

5.4.1 Job designing

Various scholars highlighted job designing as a crucial factor that drives engagement. Three important job characteristics namely challenge, variety and autonomy provide psychological meaningfulness (Swathi, 2013: Shantz, Alfes, Truss and Soane, 2013). Swathi (2013:3) advocated that an employee's level of engagement is influenced by his or her perception of how attractive and meaningful a job is. Garber (2012:7) claimed that leaders need to play an active role in making their employees jobs more interesting, challenging and rewarding and provide employees with the platform to identify ways of making their jobs more challenging and productive, thus encouraging employee involvement. Truss (2014: 2) highlighted that jobs consisting of features such as autonomy, task variety, feedback and significance, encourages positive employee engagement, giving rise to psychological states such as experienced meaningfulness, experienced responsibility and knowledge of results. Chiekezie and Onyekachukwu (2015: 23334) stated that job design has three aims: to fulfil the requirements of the BMRCL in terms of productivity, operational efficiency and service or product quality and to fulfil the individual's need for accomplishment.

5.4.2 Organizational Culture

Siddhanta and Roy (2010:173) stated that employees can help the BMRCL create or reduce its competitive advantage by strengthening or weakening a BMRCL's culture and it is therefore vital that employees' attitudes and behavior remain aligned to the BMRCL's culture to ensure they remain engaged. Garber (2012:7) claimed that employees prefer working for a BMRCL that has a positive reputation and that this type of Organizational culture must be encouraged as employees feel a sense of pride and contribute to this reputation, thus improving the level of engagement within the BMRCL. With the use of the Social Exchange Theory, Suharti and Suliyanto (2012: 130) suggested that a supporting culture in the work environment encourages employee engagement by embracing fair compensation and benefit structures. Smith, Peter and Caldwell (2016: 74) when a BMRCL adopts a culture that creates a sense of belonging amongst its employees, engagement is enhanced.

5.4.3 Incentives and rewards

Markos and Sridevi (2010:93) stated that an important management strategy to improve employee engagement would be to incentivize employees both financially and non-financially. Markos and Sridevi (2010:93) advocated that employees, who are paid more and recognized for their work effects, tend to be more engaged in their work. Ongel (2014:6) proposed that reward systems are key management tools that influence individual and group behavior thus contributing to Organizational effectiveness. Anitha (2014:312) stated financial or non-financial compensation motivates employees to perform excellently in their jobs thus resulting in a stronger focus and self-development. Employees generally expect managers or leaders to acknowledge their valuable contributions and offerings (AbuKhalifeh and Som, 2013: Baik, 2016). These would include BMRCLs offering employees formal rewards and recognition programs for their contributions and sharing of ideas such as thanking them for work well done or offering a monetary incentive for implementing innovative ideas. Recognition is therefore vital as it increases employees' energy, time and commitment levels thus improving employee engagement (Baik, 2016:19).

5.4.4 Leadership

Many scholars identify leadership as a major factor that affects employee engagement and that effective leaders encourage clear communication, transparency, self-awareness, respect ethical behavior in support of engagement (Dajani, 2015: Maximo, 2015). Maximo (2015:3-4) stated that authentic leadership consists of four dimensions namely self-awareness, balanced processing, moral perspective and relational transparency. Employees build a sense of trust in the capabilities and competence of their leaders when leaders make competent decisions about growth and productivity thus improving employee engagement. Bakar (2013: 6) highlighted previous studies that viewed empowerment as tool to encourage leadership development to help individuals and teams engage better with the aim of accomplishing Organizational goals. Zhang and Avery (2014:270) stated that there was a linkage between leadership paradigms namely classical, transactional, visionary and organic and employee engagement and that each on these paradigms have a different impact on employee engagement.

5.4.5 Communication

Mishra, Boynton and Mishra (2014: 199) argued that an important mechanism that a BMRCL can adopt is internal communication, which can aid in the efforts of building trust with employees. Mishra, Boynton and Mishra (2013: 199) stated that to enhance employee engagement effective internal communication must be adopted to inform employees about the BMRCL's vision and mission. Harter and Adkins, (2015:3) stated that communication forms the foundation of a strong and healthy relationship between managers and employees.

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Welch (2011: 339) proposed that communication, when used as an effective tool to convey the Organizational values to encourage employee involvement in the achievement of goals. Welch (2011: 339) further stated that senior management must ensure open and effective communication to ensure positive employee engagement. Mmutle (2014:2) advocated that communication is a catalyst to produce Organizational effectiveness and excellence and that employees command more information to assist them in achieving personal as well as Organizational goals. Baik (2016:16) argued that major issues such as transparency, leadership, Organizational relationship and trust hinder effective communication.

5.4.6 Career development

Anitha (2014:312) opined that to ensure that employees remain engaged, BMRCLs must provide training and career development, as this will assist employees build confidence in their work abilities and improve their levels of engagement. When a BMRCL fails to consider people development as a strategic tool, it can lead to the derailment of both the individual and the business (Caplan, 2014:78). BMRCLs' must ensure that there are career development plans for all employees, thus identifying the stretch and challenge in the current role and a roadmap of future roles, thus taking care of developmental opportunities to suit their individual aspirations and needs. Sterling (2016:2) indicated that career development is a primary driver of employee happiness and emphasized that during the transition phase into a new job, managers must build strong working relationships with employees, taking full consideration of their successes, strengths and needs.

5.5 Models of employee engagement

There are various models of engagement, namely Hierarchy of engagement model, Path-Goal Model, Job demands–resources model, three-dimensional model, Benchmark of Engagement Quotient (BeQ) and Mercer model.

5.5.1 Hierarchy of engagement model

Markos and Sridevi (2010:91) highlighted the importance of the hierarchy of engagement model, which resembles Maslow's need hierarchy model. Markos and Sridevi (2010:91) argued that this model illustrated how each level influences employee engagement as well as talent retention. Each level represents a certain need and once these levels of basic needs are realized, employees search for development opportunities and possibilities of promotions. Markos and Sridevi (2010:91) proposed that once all these needs have been satisfied, employees search to align themselves with value meaning, displaying a sense of connection as well as shared sense of meaning at work.

5.5.2 Path-Goal Model

Oliver (2012:22) argued that the path goal model, posited by Robert House, indicated that when leaders stimulated their employees, employees were able to achieve their goals. Oliver (2012:22) stated that this was based on the assumption that employees were motivated if they were able to perform their jobs, achieve their desired outcomes and felt rewarded for the work done. According to Oliver (2012: 22), this was achieved when leaders provided clarity on employees' roles, reward performance and provide the necessary support and direction. Otieno, Waiganjo&Njeru (2015:79) highlighted the importance of a leader's behavior in ensuring the motivation, satisfaction and performance of their subordinates. Otieno, Waiganjo&Njeru (2015:79) stated that a leader that engages in positive behaviour compliments his/her subordinate's abilities and compensates for their deficiencies. Malik (2013: 218) argued that dependent on the subordinates and task characteristics, a constructive leader would adopt one of the four leadership behaviors warranted by a given situation. According to Malik (2013: 218), an effective leader provides clear direction where tasks are non-routine, ambiguous and highly unstructured and adopts a supportive role, encouraging reward and recognition for the job well done, where tasks are simple and routine.

5.5.3 Three-dimensional model

Alagaraja and Shuck (2015: 23) proposed that the three-dimensional model, initially proposed by Rich and Crawford, considered cognitive, behavioral and emotional engagement and the effects on Organizational climate. Alagaraja and Shuck (2015: 23) drew from previous scholars and expanded this model to establish parallel agreement across the various studies conducted. The most rational level of engagement, according to Alagaraja and Shuck (2015: 24), cognitive engagement formed the basis in unravelling the phenomenon as well as the psychological state of engagement. Alagaraja et al (2015: 24) emphasized that employees that are cognitively engaged shared a common purpose with their BMRCL and based on the understanding of that purpose, they are willing to make a personal investment of the resource they influence.

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5.5.4 Job demands–resources model

Bakker and Bal (2010:191) addressed the importance of resources in helping employees cope with the emotional demands of their job and how employees reach their work-related goals when using these resources. Bakker and Bal (2010:191) highlighted that a resourceful work environment creates confidence, leading to the accomplishment of goals and the fulfilment of the employee's need to belong. Remo (2012: 1) shared a similar view, however indicated that the work environment also played a significant role in improving work engagement. Remo argued that these job resources; related to autonomy, learning opportunities and support of supervisors and colleagues and their positive association with engagement, are embedded in the BMRCL's culture, and governs the way employees interact at work. Schaufeli and Taris (2014: 45) indicated that the Job demands–resources was initially linked the model to burnout, which emphasized that when there are long term excessive job demands, employees struggled to recover from these demands, resulting in exhaustion and ultimately burnout. According to Schaufeli and Taris (2014: 46), the revised job demands–resources model that emerged in 2004, considered two factors namely "mediators of the relation between job demands and health problems, and job resources and turnover intention, respectively".

5.5.5 Benchmark of Engagement Quotient (BeQ) model

Bisnath (2013: 2) claimed that the Benchmark of Engagement Quotient (BeQ), developed by Viljoen in 2008, is a model used to measure leadership perceptions and engagement which was developed specifically for South African BMRCLs and considers three main constructs namely emotional containment, emotional presence and Organizational gestalt.

Bisnath (2013: 33) further argued that BeQ, with its underlying principal of inclusivity, measures the interaction between perceptions and assumptions present in BMRCLs around constructs that "contribute to the unleashing of individual voices, contributions and gifts".

5.5.6 Mercer model

Gustomo (2014: 364-365) the Mercer model places emphasis that the drivers of employee engagement are not universal; relates to the geographical, cultural and generational circumstances and therefore categorizes the drivers of employee engagement into four categories. Gustomo (2014: 364) the first driver, the work itself, includes opportunities for development. Gustomo (2014: 364) many engagement-focused BMRCLs have adopted ways to use work as an effective driver of employee engagement, adopting a strategy of flattening the BMRCL and thus encouraging employees to grow within their jobs. Gustomo (2014: 364) stated that these BMRCLs, in highlighting the importance of the job fit into the overall spectrum of functions and activities, enable employees' to map out and understand how their contributions fit with the BMRCL's vision. Gustomo (2014: 365) the second driver, confidence and trust in leadership, highlights how engaged employees perceive their leaders actions in terms of the Organizational values and their strategic allocation of resources to support the Organizational strategy. Gustomo (2014: 365) argued that strong leaders, who encourage employee and customer involvement, are transparent and build employee engagement by educating employees on how the strategy relates to the various procedures and processes. According to Pande and Basak (2015: 319), the Mercer model grades engagement of employees along a continuum with four stages namely satisfied, motivated, committed and advocate. Pande and Basak (2015: 319) stated that employees that are satisfied, enjoy their jobs and are satisfied with the terms and conditions of the job however, they do not go the extra mile. Pande and Basak (2015: 319) further claimed that employees that are motivated contribute energetically, strive to achieve personal goals and place more value in achieving personal goals than team or Organizational goals. In addition, Pande and Basak (2015: 319) proposed that committed employees see the bigger picture, collaborate with others to achieve team goals, are openly ambitious and have a sense of belonging to the BMRCL. Lastly, Pande and Basak (2015: 319) stated that employees who are advocates of the BMRCL proactively seek to serve the mission of the BMRCL, offer discretionary effort and promotes the BMRCL's name as well its products and services.

5.6 Employee engagement strategies

5.6.1 Employee participation and involvement

Kazimoto (2016:518) stated that Organizational performance can be improved by creating a platform for employees to feel comfortable in sharing their ideas and feelings. Kazimoto (2016:518) further stated that managers and leaders, in their efforts to improve Organizational performance, must address employees' concerns and acknowledge employees' contributions. Devi (2017:11) suggested that management must encourage employee involvement in the safety of their work in which they are engaged, encouraging their participation in production goal assessments, providing input in work planning, evaluating work procedures, suggestions of practice methods, assessing the risk and so on. Markos and Sridevi (2010:93) suggested that

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BMRCLs' must allow employees greater job autonomy by encouraging independent thinking, problem solving and decision making on how to best perform their jobs, thus producing expected results. Reilly (2014:4) proposed that leaders and managers should encourage employee involvement in the process of identifying barriers to engagement and welcome solutions provided by employees to effect positive change.

5.6.2 Communication

Markos and Sridevi (2010: 93) indicated that in order to enhance employee engagement, managers must promote two-way communication; provide clear and consistent communication of what is expected of employees and encourage participative decision making so that employees will feel a sense of belonging, thus improving their engagement (Markos and Sridevi: 2010, 93). Kazimoto (2016:518) highlighted the importance of communicating and sharing the BMRCL's strategic plan, thus ensuring alignment of the employee's goals to the BMRCL's strategic goals. Reilly (2014:4) suggested that the use of powerful descriptions and emotive language are key to highlighting what success looks like, which in turn helps give meaning to goals and build commitment between Organizational members and within teams. Reilly (2014:4) claimed that leaders must play an active role in strategically aligning their employee engagement efforts. According to Reilly, (2014:4) leaders must grab every opportunity, touch point, and communication channel to reinforce and recognize the BMRCL's commitment to employee engagement as well as highlight engagement's effect on a continuous basis and share best practices across the BMRCL.

5.6.3 Leadership

Markos and Sridevi (2010:93), leadership commitment through establishing a clear vision, mission and values will improve employee engagement. Markos and Sridevi (2010:93) stated that there must be ownership of the vision, mission and values by the leaders in the BMRCL before passed down to managers and employees. Leaders must "lead by example". Zhang and Avery (2014:282) advised that to improve employee engagement, leaders must recruit staff that exhibit strong characteristics, which predict high levels of employee engagement. Secondly, an ethos must exist of using the appropriate leadership style to support employee engagement. Zhang and Avery (2014:282) prosed that consideration must be taken when selecting employees such that their characteristics match the leadership paradigms in the BMRCL.

5.6.4 Managers: selection and coaching

Reilly (2014:4) proposed that great managers care about their employees' success, recognize and value employee contributions, actively embrace employees' opinions and ideas and seeks to understand people's strengths and encourage the use of these strengths in their Organizational role. According to Reilly (2014:4), it is therefore important for scientific selection of managers that have the unique talent of effectively managing people, as this will substantially increase the odds of engaging employees. Secondly, Reilly (2014:4) indicated the importance to coach and hold managers accountable for their employees' engagement**.** Reilly (2014:4) managers must be coached to take an active role in building engagement plans with their employees, be held accountable for tracking their employees' progress and ensuring managers' continual focus on emotionally engaging their employees. One way of managing accountability for the level of engagement demonstrated by both managers' and employees, as mentioned by Markos and Sridevi (2010:93), is the implementation of a performance management system.

VI. RESEARCH METHODOLOGY

6.1 Research Design

The research design adopted in this study is of an exploratory nature, as this approach would provide insight into the employees' attitudes and perceptions of the research problem identified. Secondly, this research design is flexible and can be managed on a small scale, thus allowing the researcher to learn from the experience of the investigation and avoid bias of any preconceived notions (Webb, 2014: 20)

6.2 Research strategy

Due to the choice of the qualitative approach in this study, the research strategy adopted was a case study. Saunders, Lewis and Thornhill (2016:184) opined that a case study is a comprehensive inquiry into a phenomenon within its real-life setting. Based on the problems identified at BMRCL, this was the most suitable approach and based on this approach, interviews were conducted to gain understanding of the dynamics of the research topic and to get an in-depth nuance knowledge in this area.

6.3 Research Philosophy

The research conducted was qualitative in nature. This methodology was utilized because it allowed the researcher to achieve an in-depth understanding of the situation (Cooper and Schindler, 2014: 144). The

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underlying research philosophy will be phenomenological as the meanings emerging from the study will be socially constructed and derived in the context of the BMRCL, within which it occurs, being its natural setting.

6.4 Target population

BMRCL has a staff compliment of thousand, consisting of 60 management staff members and employees. Based on the population, a sample size of 100 research participants were selected to participate in the study.

6.5 Sampling Strategy

Non-probability sampling approach was adopted using purposive sampling to ensure that the cases selected would provide best responses to answer the research questions. Cooper and Schindler (2014: 152) stated that purposive sampling will assist the researcher to gain insight into participates' experiences and perceptions around the research problem. Secondly, this sampling technique is economical, sample groups can be easily matched and there is better control of significant variables and homogeneity of cases or subjects (Devi, 2017: 20).

6.6 The Research Instrument

For this study, data was gathered by interviews with management staff members and employees, with the aim of gaining meaningful insight into the research problem. Before the commencement of the interview process each interviewee was issued a cover letter; informing them about the background of the study, the reason for conducting the interviews, advising them that their participation was voluntary, providing assurance that their responses would remain confidential and ensuring preservation of their anonymity. Each respondent was issued consent for participation document, explaining the contents of the document and thereafter signed off by each respondent before commencing the interview. Face-to-face interviews were conducted, for about five to ten minutes and was recorded on laptop and well as smartphone. During the interview process, the area of investigation comprised: crucial factors that affect employee engagement, the level of engagement, the impact of employee engagement on Organizational performance and recommendation of employee engagement strategies to improve employee engagement. All interviews were transcribed with the use of Google Docs and Microsoft Word and each transcribed interview was saved with interview numbers as file names to ensure the confidentially and anonymity of the interviewees.

6.7 Data Analysis

With the aim of specifically understanding people's attitudes, meanings and experiences regarding employee engagement and its impact on Organizational performance, thematic analysis was adopted to analysis the data gathered and assisted in highlighting important themes that emerged from the interview process. Saunders et al. (2016:579) argued that thematic analysis, a generic approach to analyzing qualitative data, is the identification of themes and patterns for further analysis. Through various stages of analysis: all interview transcripts were read thoroughly to code concepts, words, phrases and sentences and thereafter it was categorized into codes according to level of importance and thereafter identified the emerging themes.

VII. RESULTS

The primary research was evaluated under the research objectives.

7.1 Level of employee engagement

The empirical findings indicated that the levels of employee was differential in some research participants rating it average, some above average and still the below average. The participants highlighted the factors that drive employee engagement as the lack of flexibility in the job, company politics, and tug-of-war between staff, respect for others, lack of recognition and personal issues interfering with job performance.

7.2 Factors that affect employee engagement

The factors highlighted from the research findings were job design, culture, recognition communication, career development, employee involvement and motivation.

7.2.1 Job design

The sub-theme job design stimulated much discussion amongst the employees and is rightfully is the starting point of the whole HR systems.

Job design	Excerpts from interviewees
1	Action plans are important to guide employees on the tasks and responsibilities
2	Proper guidelines must be given to facilitate the work
3	Unrealistic deadlines prevents the completion of task and responsibilities
4	Proper tools to complete the tasks
5	Educate employees on job procedures
6	Working conditions facilitate employee engagement

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7.2.2 Culture

The research findings did not match with the literature because the participants did not identify Organizational culture as an important factor

Culture	Excerpts from interviewees
1	Employee cultural upbringing affects employee engagement
2	Employees are diverse and different
3	Employees have different personalities and this affects Organisational culture
4	The employees behavior is not aligned to the company's values
5	Leaders shape the culture of the BMRCL

7.2.3 Recognition

The empirical findings of the study revealed that recognition is a vital incentive and reward strategy to improve employee engagement.

Recognition	Excerpts from interviewees
1	Management do not have a recognition strategy
2	The system used is not transparent and fair
3	The system is applied inconsistently in the BMRCL
4	A lack of recognition leads to stifled growth potential
5	Employees are being identified for promotion
6	The company has not fully explored and identified the recognition approaches
7	Industry standards on recognition must be explored
8	Employees are not consulted about what the needs are

5.2.4 Communication

All the participants identified that communication is one of the more important determinants of employee engagement.

7.2.5 Career development

Communication	Excerpts from interviewees
1	Open communication between management and employees must be addressed.
2	Transparent is an important aspect of communication
3	Generally there is a good level of communication
4	The BMRCL needs to develop a communications strategy and plan
5	Communication is not consistently practices across the BMRCL
6	Horizontal communication needs to be explored.
7	Effective communication builds trusting relationship
8	A bottom-up approach is required so that all system

The research findings also contended that career development is vital in enhancing employee engagement. The findings revealed that great emphasis was placed on training and development of individuals within the BMRCL. Annual training plans were highlighted as an important tool to assist employees build confidence in their work abilities and thus improving their levels of productivity. Career development was highlighted as an important element to ensure self-development of employees.

7.2.6 Employee involvement

Only one participant highlighted employee involvement as a factor. The participant stated that employees must play an active role in decision-making relating to strategy. The participant indicated that it was a norm for top management to make decisions affecting employees and employees only become involved when implementation of strategy is initiated. The participant believes that employees must be involved from the initial stages when the strategy is being developed.

7.2.7 Motivation

The empirical findings indicated that motivation must a crucial factor that affects engagement. The participant indicated that motivation of employees makes a difference and believes that the employee must drive their own level of motivation as he or she is responsible of this and no one else.

7.2 Impact of employee engagement on Organizational performance

According to the research findings, all participants agreed that employee engagement does influence Organizational performance. Some of the participants spoke of the positive influence of employee engagement

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on Organizational performance and highlighted performance outcomes such as improved profits, improved bottom line, improved productivity, employee's proactive nature of findings ways to improve revenue and improved customer services. Other participants felt that when employees are unhappy, not given the opportunity to speak, not recognized for their efforts and not encouraged to participate in decision-making, they do not exercise their full potential resulting in reduced individual performance and ultimately reduced Organizational performance.

VIII. DISCUSSION

The literature review highlighted various factors that drive employee engagement namely job designing, Organizational culture, incentives and rewards, leadership, communication and career development. Besides BMRCL culture all factor factors have surfaced in the primary research for influencing the levels of employee engagement.

Both the literature and findings reveal that employee engagement is related to individual, team and Organizational levels of engagement.

INDIVIDUAL	TEAM	BMRCL
FACTORS THAT INFLUENCE EMPLOYEE ENGAGEMENT		
Job design	Job design and departmental	Culture
Communication	structure	Communication
Career development	Communication	Inclusive structures
Leadership	Leadership	Participation
Reward & recognition	Recognition	Organizational design to facilitate strategy
STAKEHOLDERS		
Human resource practitioners	Line managers	HR Practitioners
Employee	HR Practitioners	Quality Practitioners
Line managers		Senior Managers

The simple model above proposes that the drivers of employee engagement is designed and managed at the individual, team and Organizational levels. Human resources is mostly responsible for creating HR systems, policies and processes to facilitate employee engagement. Secondly, line managers are responsible for managing people to improve employee engagement. Thirdly, there must be a recognition strategy that culture is another driver of employee engagement. The Organizational culture is created through the leadership style and the managerial sub-system (policies, systems and processes). In managing employee engagement there must be an integrated approach to improving the levels of employee engagement.

RECOMMENDATIONS

The purpose of the study was to examine the impact of employee engagement on Organizational performance. The BMRCL under study must improve employee engagement with the implementation of the following strategies:

1. The managers and leaders in the BMRCL must encourage employee involvement. During quarterly meetings, weekly strategic sessions and team building sessions or interaction sessions, employees must be encouraged to address concerns relating to their jobs or share ideas on how to improve existing policies, practices and procedures that can improve performance levels. Secondly, employees must be included in planning: assessing important issues, identifying opportunities and sharing improvement ideas for the business strategy.

2. The BMRCL must implement a broad Organizational strategy that involves all levels of the BMRCL to ensure proper execution and completion of tasks with the aim of meeting the BMRCL's vision and mission. This can be achieved by re-addressing company policies and procedures. The BMRCL's leadership must include all employees in the action planning process of revising existing policies and procedures or creating new policies and procedure, thus ensuring buy-in from employees. This sense of involvement will motivate employees to map out and drive their work processes to achieve improved performance. Secondly, create a designated intranet for company policies and procedures such that employees can easily access these policies and procedures and continually update these policies and procedures to ensure relevance to the job design.

- The BMRCL, with the use of effective communication channels, must promote two-way communication that is clear and consistent. The BMRCL must adopt communication methods such as notice boards to

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advice employees of changes such as change in task deadline. Secondly, conduct regular staff meetings to discuss all achievements and failures as this will encourage better performance levels. Thirdly, circulate a company newsletter on a quarterly basis that informs employees of changes or new developments within and outside the BMRCL. The BMRCL can make use social media such as creating a company Facebook as a platform for interaction. Lastly, in instances where employees do not feel comfortable with talking in staff meetings, leaders or managers can conduct one-on-one sessions with employees so that they feel comfortable to discuss issues or concerns.

- Adopt important leadership strategies. This can be achieved through the introduction mentorship programs, as this will improve employee performance and ensure Organizational goal and objectives are achieved. Secondly, create of knowledge sharing system in the form of a company intranet. Thirdly, create an effective selection process that identifies of the right managers that accept accountability for promoting employee engagement.
- The findings indicated that employees do not accept accountability for their work, often explaining away errors in their work. The BMRCL needs to adopt an effective performance management system that assesses employees' efforts in ensuring optimal levels of performance in the furtherance of achieving Organizational goals and objectives.
- The research findings also revealed that there was little or no recognition for work well done. The BMRCL must implement a recognition strategy and systems. This can be achieved by implementing awards such as "employee of the month", create a culture that encourages recognition on a daily basis, leave post-it notes on employee's desks just to say, "thank you" for their efforts and contributions or during staff meetings, highlight important contributions made by employees. Also reward and recognition systems must be benchmarked.

IX. CONCLUSION

This study set out to investigate the impact of employee engagement on Organizational performance in a short term. Findings from the literature as well as the study conducted indicated that employee engagement does influence Organizational performance. Secondly, communications, job design, incentives and rewards, leadership, employee involvement, culture and career development were identified as important factors that drive employee engagement. The limitations of this study was that it was conducted in a single BMRCL and was not equally representative of the both genders as there are only two male employees in the BMRCL. Secondly, although purposive sampling is used to select participants who have rich knowledge and experience in the subject area, the researcher had no way of ascertaining which of the employees were more knowledgeable in employee engagement as the sample population was not large enough. In relation to this study, it is recommended that further study be conducted in the short-term industry to gain a better understanding of the impact employee engagement on Organizational performance.

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ARTIFICIAL INTELLIGENCE FOR 4.0 – ADOPTION IN ORGANIZATIONS AND ITS CHALLENGES

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ABSTRACT
Corporate spending on AI systems is projected to top $47 billion by 2020. Organisations in every part of the globe is discussing ways of how AI is going to transform their business and future workplace. On one side organisations are welcoming the new technology with open hands, on the other side employees are viewing it with fear of loss of jobs. Being a latest technology, Artificial intelligence and machine learning are embedded with lot of concerns and issues such as security, stability, inequalituy and so on. This paper on "Artificial intelligence in 4.0 – Adoption in organisations and its challenges" tries to unravel the challenges faced by organisations in the implementation of AI. It also tries to find a balance between the challenges and the need to adopt AI in companies today.

Keywords: Artificial intelligence, Machine learning, Challenges, implementation, Adoption, AI vendors

INTRODUCTION
Every organization operates in an environment and its factors influence the organization in several ways. These environmental factors include government, globalization and technology innovations. Among these, technology innovations are fastest changing factor and thus affects an organization and its functions too. In the boom of digital age, Artificial Intelligence (AI) is redesigning the functions of an organization and HR also needs to remodel its plans accordingly.

Even today many HR-professionals are reluctant to embrace this breakthrough technology. Some feel algorithms can never replace human empathy and intuition. There are doubts about the availability and quality of data and whether AI can add something new to what we already know about the dynamics of the workforce. Reality has overtaken this discussion. Digital intelligence is transforming the workplace. Man and learning machines are working closely together in neural networks, powered by an ever-increasing amount of data in the cloud and the use of big data and artificial intelligence to analyse and direct them. This force crosses a wide range of disciplinary and organizational boundaries and requires a massive shift in thinking about how to execute and operate. Being the most complex, handcrafted and data-dependent business process, HR must rethink its added value and license to operate.

AI AND MACHINE LEARNING (ML)
Artificial intelligence (AI, also machine intelligence) is intelligence demonstrated by machines, in contrast to the natural intelligence (NI) displayed by humans and other animals. The term "artificial intelligence" is applied when a machine simulators "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving". Artificial intelligence was founded as an academic discipline in 1956, and in the years since has experienced several waves of optimism followed by new approaches, success.

Artificial Intelligence is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using the rules to reach approximate or definite conclusions), and self-correction. AI systems are categorized as either *weak AI or strong AI*. Weak AI is an AI system that is designed and trained for a particular task. Weak AI is also known as narrow AI, Virtual personal assistants, such as Apple's Siri, are a form of weak AI. Strong AI is an AI system with generalized human cognitive abilities so that when presented with an unfamiliar task, it has enough intelligence to find a solution. Strong AI is also known as artificial general intelligence.

Machine Learning is a subset of Artificial Intelligence that constitutes various algorithms to assist the machine to learn a given task. The Machine Learning (ML) employs electronic machines (computers) to simulate human learning and allows the machine to identify and acquire knowledge from the real- world, as well as improving its performance on certain tasks based on this new knowledge. More formally, we can define machine learning as "a computer program that learn from the experience (E) with regard to certain class of tasks (T) and performance (P). Its performance (P) improves with experience (E) gained while performing the task (T)".

Automation, robotics and AI are advancing quickly, dramatically changing the nature and number of jobs available and the way we organize our work relations. The potential for digital platforms and AI to underpin and grow the world of work is unbounded. To understand the role of AI in this better, it is useful to think of

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three levels of intelligent digitalization namely Assisted intelligence, Augumented intelligence and Autonomous intelligence

ASSISTED INTELLIGENCE

The technology is already widely available today, and improves what people and organisations are doing by automating repetitive, standardized and time-consuming tasks and providing assisted intelligence as in chat bots. A simple example, prevalent in cars today, is the GPS navigation programme that offers directions to drivers and adjusts to road conditions. Or the Netflix-software that directs you to the visual entertainment suited for your choice and sentiment.

AUGMENTED INTELLIGENCE

This emerging technology brings a fundamental change in the nature of work by enabling man and machine to make decisions together. It makes us do things we couldn't otherwise do. For example, car ride-sharing businesses exist because of the combination of programmes that organise the service. AI powers and directs this. Uniquely human traits – such as emotional intelligence, persuasion, creativity, innovation – become more valuable by this co-existence of man and machine.

AUTONOMOUS INTELLIGENCE

This is the most advanced form of technologies relying on AI, establishing machines that act on their own and reach out to the subconscious level of information. An example of this will be selfdriving vehicles, when they come into widespread use. But algorithms autonomously take over decision making and selection processes. This creates a new industry of data science and data-governance and makes data ethics, privacy and data security C-suite issues.

Will artificial intelligence be a ubiquitous part of HR departments in the near future? Surveys suggest that some HR managers are still not on board with the technology, or are just too small to need it. A 2017 survey from the Human Resources Professional Association revealed that 52 percent of respondents said they were unlikely to adopt AI in their departments within five years. Consulting firm Deloitte observes that HR is one area of business where AI implementation is lagging: Just 22 percent of "high-performing" HR organizations have implemented AI technologies; that number drops to 6 percent among low-performing organizations. On the flipside, in a survey of 6,000 executives performed last year by IBM, 66 percent of respondents said they believe cognitive computing can drive significant value in HR. Another 50 percent said they believe cognitive computing has the power to transform key dimensions of HR; 54 percent believe cognitive computing will affect key roles. The growth of AI overall may eventually mean HR departments have no choice. Corporate spending on AI systems is projected to top $47 billion by 2020.

The success of an HR tool will be dependent on many things: the accuracy and completeness of its algorithms, the ease of use of its systems, but more important than all its ability to provide what is called "narrow AI" or very specific solutions that solve problems. This can only be done when the vendor has massive amounts of data (to train its system) and they gain lots of feedback on how well it works. So the barriers to entry are going to be focus, business strategy, and client intimacy, not just having great engineers.

Every company's management and people decisions are often culture based, so it will take time to try these systems in the real world and tune them for best use. IBM, for example, has spent years optimizing its AI-based compensation and career solutions for its company, culture, and business model. They are now bringing these tools to corporate clients and finding that each implementation teaches IBM new things about the algorithms to make them better for that industry, culture, or organizational need.

THE ROLE OF AI IN HR AND MANAGEMENT

AI is not some magical computerized persona; it is a wide range of algorithms and machine learning tools that can rapidly injest data, identify patterns, and optimize and predict trends. The systems can understand speech, identify photos, and use pattern matching to pick up signals about mood, honesty, and even personality. These algorithms are not "intuitive" like human beings, but they are fast, so they can analyze millions of pieces of information in seconds and quickly correlate them against patterns. Statistically AI systems can "predict" and "learn," by plotting curves of possible outcomes and then optimizing decisions based on many criteria.

Recruitment **tools**: An AI system can looks at all the possible demographics, job history, and interview questions with a candidate and then "predicts" how well they will perform on the job. (HiredScore, Pymetrics, HireVue, IBM, and others are working on this.) (Vendors in this market include LinkedIn, Pymetrics, Entelo, HiredScore, IBM, Textio, Talview, Unitive, PredictiveHire, and more.)

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Employee development and learning: The global L&D industry is over $200 billion and at least half of this is wasted. The market is young, but the opportunity is massive. Research shows that the average employee has less than 25 minutes a week to train and learn; if that time is made more relevant everyone will perform better. (Vendors in this market include Degreed, EdCast, Filtered, Volley, Axonify, BetterUp, Clustree, Workday, and more.)

Leadership Development: Managers and leaders operate like Zen masters. The concept leadership is constantly evolving. Most studies find that there are dozens of management and leadership traits that define success, and each of us brings a slightly different and unique combination of them. AI can now help decode this. "AI-based" coaching tools, systems that request feedback, read comments, and intuit sentiment from employees and teams use this data to match these individual and teams' issues against higher performing teams, to give managers and supervisors "nudges" on how to do better. In an organization, within only 3 months of using this tool their leadership teams showed a 25% improvement in corporate values just based on small behavioral nudges. (Vendors in this space include Reflektiv, BetterWorks, Ultimate Software, Zugata, Humanyze, ADP, Impraise, and more.)

Detecting fraud and compliance: the opportunities are massive. One study found that employees who steal or commit crimes are "contagious" to their peers. AI can look at organizational network data (email traffic, sentiment of comments) and identify areas of stress, areas of possible ethic lapses, and many other forms of compliance risk, and point out the "red areas" to HR or compliance officers so they can intervene before bad behavior occurs. (Vendors in this space include TrustSphere, Keencorp, Volley, Cornerstone, and more.)

***In well-being and employee engagement*:** AI is now being used to identify behaviors that cause poor work performance. In safety AI can identify behaviors and experiences that lead to accidents. A new breed of survey tools can identify patterns of stress and bad behavior and alert HR or line managers. (Vendors in this space include Limeaid, VirginPulse, Glint, Ultimate Software, CultureAmp, TinyPulse, Peakon, and more.)

In employee self-service and candidate management, a new breed of intelligent chatbots can make interactions intelligent and easy. (Vendors in this space include IBM, ServiceNow, Xor, Mya, Ideal, Paradox, and more.)

CHALLENGES IN ADOPTING ARTIFICIAL INTELLIGENCE IN THE ORGANIZATIONS

More productivity, optimizing logistics, detecting fraud, composing multimedia, conducting fast research and providing translations: intelligent machine systems are transforming our lives for the better. As these systems become more capable, our world becomes more efficient and consequently richer. HR experts must be ready for a new frontier for ethics and risk assessment as it is an emerging technology. There are some issues and challenges in front of HR managers to cope up the menace of AI.

1. ***Unemployment:*** the highest fear towards artificial intelligence is the loss of jobs resulting from that. The hierarchy of employees is concerned primarily with automation. As we have invented ways to automate jobs, we could create room for people to assume more complex roles, moving from the physical work that dominated the pre-industrial globe to the cognitive labour that characterizes strategic and administrative work in our globalized society.
2. ***Inequality:*** Our economic system is based on compensation for contribution to the economy, often assessed using an hourly wage. The majority of companies are still dependent on hourly work when it comes to products and services. But by using artificial intelligence, a company can drastically cut down on relying on the human workforce, and this means that revenues will go to fewer people. Consequently, individuals who have ownership in AI-driven companies will make all the money and this will increase the divide between the rich and the poor.
3. ***Artificial stupidity:*** Intelligence comes from learning, whether you're human or machine. Systems usually have a training phase in which they "learn" to detect the right patterns and act according to their input. If the input given to a machine is by itself biased or tweaked, the result may also be tweaked. In other words, the algorithms learn from the past. If the current management practices are biased, discriminatory, punative, or overly hierarchical, the organization may wind up institutionalizing all the things they hate.
4. ***Racist robots:*** We shouldn't forget that AI systems are created by humans, who can be biased and judgemental. Once again, if used right, or if used by those who strive for social progress, artificial intelligence can become a catalyst for positive change. **Eliminate bias.** AI applications are capable of processing speed, but they can go wrong due to biased learning input. An AI solution can be a catalyst for positive change if it has been used in the correct way.

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5. ***Security:*** The more powerful a technology becomes, the more can it be used for wicked reasons as well as good. This applies not only to robots produced to replace human soldiers, or autonomous weapons, but to AI systems that can cause damage if used maliciously. Because these fights won't be fought on the battleground only, cyber security will become even more important. After all, we're dealing with a system that is faster and more capable than us by orders of magnitude. Privacy Issues has to be looked inot and privacy laws must be in place to ensure confidentiality.
6. ***Robot rights*****:** While neuroscientists are still working on unlocking the secrets of conscious experience, we understand more about the basic mechanisms of reward and aversion. We share these mechanisms with even simple animals. In a way, we are building similar mechanisms of reward and aversion in systems of artificial intelligence. For example, reinforcement learning is similar to training a dog: improved performance is reinforced with a virtual reward. It needs to be seen if machines will be motivated by the same types of rewards and reinforcements.
7. ***Find reliable and sufficient learning data sets*****.** Real-life data, along with the quality and volume of data, is extremely important. This should be free from bias and representative of all possible scenarios. First, the important task is to get the right set of data, then get the AI to provide the best output.
8. ***Use the right implementation approach*****.** The AI environment is quite different than other IT environments. The AI development is about identifying data sources, gathering content, cleansing it and curating it. Such an approach requires different skills and mindsets, as well as different methodologies. The right approach for development will increase the magnitude of success in AI implementation.
9. ***Seek clarity for a training phase*****:** A lack of clarity about generation insights can lead to mistakes. Businesses need to make sure the machines perform as planned, securely and efficiently. Systems should have a proper training phase to learn, detect and correct patterns, and act accordingly
10. ***Have a strategy for unintended consequences*****.** A good AI designer should be able to suggest a strategy to avoid unintended consequences by inputting as many possible scenarios, pre-learning and machine self-learning mechanisms to avoid unintended issues
11. ***Talent gap*****:** it can be expensive and hard to find properly educated or skilled people.
12. ***Limited proven applications:*** many products and services are feasible based on proof of concept only. For example

Machines can act like humans only if they have required information about the world Providing information to machines on reasoning, common sense and the problem-solving capacity is difficult AI cannot handle the sensitive issues/ problems at work place like humans, and AI cannot exhibit empathy which is big hurdle in customer service applications like chat bots and lack of which may result in breaking relationship with valuable customers.

Are There Risks? What Happens to People Analytics?

All these applications are new, and as exciting as they seem, there are plenty of risks to worry about. The biggest is that AI cannot work without "Training data." AI should be transparent and "tuneable" to make sure they're doing the right things. Just like the early automobiles didn't always drive straight, early algorithms are going to need "bumpers" and "tuning knobs" to make them more accurate.

There's a risk of data exposure and inadvertent misuse as well. Consider a common use of analytics which is used to predict the likelihood of a high-performer leaving the company. If managers are aware that "this person has a highly likelihood of leaving" the manager may ignore this person, or treat him or her differently. It is yet to be understood how to apply behavioral economics carefully. AI is a "tool" for suggestion and improvement – not an independent decision-making system today.

Consider what happens when an autonomous vehicle has a crash. A lot of time is spent diagnosing how it happened, what visual or algorithmic systems failed, and what conditions could have led to the accident. What if AI makes the wrong recommendation on a candidate, or a salary adjustment, or a management intervention? Will it be found? Will it be diagnosed? Will it be noticed before it's too late? Lots of work are yet to be done to instrument and learn how to "train" management-based AI systems to work well.

JUSTIFICATION OF USING AI

Despite these challenges and risks, the upside is enormous. Companies spend 40-60% of their revenue on payroll and much of this enormous expense is driven by management decisions made on gut feel. As AI systems

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in HR get smarter, more proven, and more focused on specific problems, dramatic improvements in terms of productivity, performance, and employee wellbeing will be seen. If organizations wish to remain competitive in today's global economy, they will need to look at ways to incorporate conversational AI for HR transactions in their decision-making process. Organizations should rely on AI to perform administrative duties so that HR departments may become more efficient. HR professionals will be able to focus more on strategic planning on an organizational level. Organisations have to be patient, vigilant, and willing to invest.

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AI IN DIGITAL MARKETING

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ABSTRACT
Artificial intelligence is a special ability in machines. AI enables the machines to act and perform actions like humans. Its more precise and focused in every activity compared to humans and is known to be more efficient. It goes through every data to gain important facts. With the help of algorithms it can also have other features like GPS, automated actions and many other functions. The help of multiple algorithms helps the machine to learn from the user and can change its ability to the user's habit and make the user feel more comfortable. There has been a huge demand for AI because of its work in the industrial and marketing sector. AI has taken the role of identifying marketing trends. AI digital marketing is used to in marketing to make every process quick and efficient. Unsophisticated chat bots can sometimes make it obvious that there is no human on the other end. This can make older generations very uncomfortable. Computers can't decide what is right or wrong, it can only give an analysis. Even with the rise of AI, humans are still the main catalysts in the marketing world but with the help of AI and digital marketing the whole marketing sector can be revolutionized.

Keywords: Intelligence, Revolution, Precision, Insights, Efficiency, Adaptability, Future opportunities, Creative decisions.

INTRODUCTION

In the present day of age AI has slowly started to trend because of its wide achievements. Digital marketing has been for a while now and has made good progress in the marketing sector. With AI making news in the current generation, it's the perfect time to take digital marketing to the next step by implementing AI in digital marketing. The liking of people keeps changing every day and the marketing sector adapts to the peoples liking and give what they want. This is where AI works, they gain data on what the customer searches or wants and gives relevant items for the customer. This will help the customer to find what they want easily. This makes them satisfied with the item they have brought and with brand. For retail, AI has been a big help for brands. With the help of VR (virtual reality) the customers can "wear" the clothes they look at the website without directly going to the shop. By using apps like "GOOGLE LENS" where when a picture of any product is taken it gives the users the meaning, the name, the brand that made it and a direct link to its website. Currently a clothing app called "MYNTRA" made a feature where the picture of any dress is taken and the app searches the relevant dress or the same dress. This makes it easier for the customer to shop. Voice search technology is also a plus for AI in digital marketing. AI voice assistants like "SIRI", "GOOGLE HOME" and others can search products when asked. The companies can also code their brand as the first result when asked to search.

THE RELATIONSHIP BETWEEN DIGITAL MARKETING AND AI

AI is the future of digital marketing. The ability to know what the customer wants by the collection of data and adaptive behavior will help the rate of interest on brands among customers. The year 2019 is said to have major changes with AI in digital marketing.

The Relationship between AI and digital marketing are as follows,

1) Predictive Analytics:

Propensity models are statistical scorecards that are built to identify prospects that are more likely to respond to an offer. It correlates customer characteristics with anticipated behaviors.

In predictive analytics with the help of AI the marketers extract information from data and uses it know the trends and behaviour of the customer. The Adobe predictive analytics tool analyses it works via the steps as follows:

- **Objective identification and data extraction:** In this the AI with the data collected creates a model or a pattern to analyse and match the users wants.
- **Model creation and validation:** In this step, data mining is used to create a model, with the help of this goals are set.
- **Apply results and manage models:** with the help of models created earlier a perspective of the market condition can be known. Hence a better outcome can be gained.

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2) Use AMP and Reduce Load Time:
In October 2015, Google introduced a new webpage called AMP webpage. This webpage was different from the traditional webpage. It was more optimized and faster in load time. This webpage is used in the mobile version of the website. With the data collected by Google the AMP webpages are given the right content. The more relevant news appears at the top of the page in order along with the rest.

3) AI-Powered Chat bots to Improve Experience:
AI chat bots helps in improving the user experience. The help of quick in built messages helps the user to get instant solution with any query they have. This will help the customer to feel satisfied with their brand. The NAB had started their own Chabot which was able to answer around 200 messages.

4) Content Marketing with AI-Generated Content:
AI helps in generating content with its tools. Companies like "Acrolinx" are some of the companies that help in creating good content by gathering the right data and using the tools to give good content.

AI TOOLS USED IN DIGITAL MARKETING
In the current generation the competition increases with new brands arising. With the rising population it is impossible for humans to physically gather the attention of the customers. The marketers need something that can do the same work in a quicker and in a collective manner. This is where AI comes to place, the marketers use AI to improve the user experience and meet the requirements of the consumers.

Acquis Turing – this is a combination of nearly 30 algorithms that work in the same process to gain marketing data across platforms. The data collected during the particular day, week, place helps the AI to make better bids and better decisions on budget.

Bloom reach – This is a platform used in business to optimize, extend, and improve the overall digital experience on all channels.

Google Cloud AI – This helps in building Chatbot's and analyzing image, videos etc.

- **Hub Spot** – A tool that helps marketers to discover and validate new content ideas that perform well.
- **Concured** – Uses AI to analyse people's behaviour towards content at scale in order to prescribe what you should create next to maximize engagement and ROI.
- **Cortex** – A social media content optimization platform for marketers and agencies to continuously improve post engagement.
- **The Grid** – Molly, an AI-powered web design platform uses machine learning combined with constraint-based design and flow-based programming to make form dynamically adapt to content.

CONCLUSION
Artificial intelligence is an important part of tomorrow in the marketing sector. Nowadays start-up companies are using AI to help improve their marketing approach. Companies like Amazon, Apple, and Google are famous for using their AI powered voice assistants to perform actions. AI in digital marketing and will continue to help companies improve their experience in their marketing approach and in their consumer experience

This is the perfect time for marketers, and it will be intriguing to see what innovations take place in the AI space in the coming months. As AI technology keeps improving the marketers will have a better way to communicate with their consumers no matter where they are. At the present condition of the marketing sector this is the perfect time for companies to implement AI in their marketing efforts. The future of AI in digital marketing is set to improve and will continue to innovate the marketing experience.

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BANKING RISK MANAGEMENT: THE CASE OF DEVELOPING COUNTRIES IN SOUTH EAST ASIA

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ABSTRACT
The banking sector of India is devoted to the mobilizing of financial assets in the Indian economy. It holds these assets, invest them as leverage to create more wealth. In order to show that the banking industry is reliable the information about the risk in this industry and how it is mitigated are important to consider. Amongst the financial risk's, liquidity risk and credit risk of the bank are most important to consider. The study considers the top 4 banks of the 4 South East Asian Countries (India, South Korea, Malaysia, Philippines). The variables used in this study are ROA, ROE, CAR, Liquidity Ratio and Non-Performing Assets. The data collection was based on secondary data and the period of the study is 2013-2018. The study found that the ROE of South Korea is negatively influenced by the liquidity ratio and positively by NPA. The impact of NPA is negative on ROA of Philippines, and negative on CAR of South Korea. The impact of NPA is positive on CAR of India and Malaysia and other variables have no significant impact.

Keywords: Banking industry, Financial risk, Liquidity Risk, Credit Risk and Non-Performing Assets.

1. INTRODUCTION
The banking sector of India is devoted to the mobilizing of financial assets in the Indian economy. It holds these assets, invest them as leverage to create more wealth. The core function of any banking institution is holding and securing of financial assets with ability of allowing the said investors to withdraw these said assets whenever required. The banking industry is divided into various sectors like Public sector bank, private sector banks and each sector is further divided into various types of banks which have been differentiated on the basis of the functions they perform. The various sectors of the banking sector are Central Bank, Commercial Banks, Co-operative Banks, Industrial Bank, Agricultural Bank, Foreign Exchange Banks etc.

The risk is the possibility of a damage or a loss, or any other negative occurrence that is caused by external or internal factor, these can be avoided through preventive action. It can also be defined as the potential loss or gain of something of true value. An activity can be described as a risky proposition due to the presence of uncertainty or lack of predictability of outcome of the activity in the future, the risk involved is that either there might be a profit or might incur a loss.

The banking industry has given rise to risk management, especially since the global crisis of the year 2007-2008. The liberalized economic situation of the country had opened various new roads and enabled increasing revenues for the banks. To grab this opportunity, Indian commercial banks had launched several new innovative products and facilities such as ATMs, Credit Cards, Mobile banking, Internet banking, etc. along with the traditional banking products. It has become a common practice for Mutual Funds, Insurance, etc. to be upgraded by design and served to attract more customers to their fold. Not only this, but also with the increase in development of banking sector the threat of risk also increases.

Banks like any other commercial organization also intend to take risk, which is essential for any business. Higher the risks, greater the gains. But higher risks may also result into higher losses. However, banks are sensible enough to identify, measure and price risk, and maintain appropriate capital to take care of any unforeseen contingency.

2. REVIEW OF LITERATURE
The financial crisis that hit the East Asian countries in the year 1997 revealed the various substantial vulnerabilities in the financial sector. It exposed the fact that most financial institutions had large amounts of non-performing assets, which is caused due to poor risk management and excessive lending to the real estate sector. It was found that the poor management skills were due to the weak corporate governance and limited investment in risk management technologies.

Bagh, et al. (2017) stated that severe economic meltdown in the banking industry is the result of an unexpected change due to unskilled labor in public sector, inflation, poor corporate governance, natural disasters, corrupt managerial practices and policies, low per capita income, tremendous increase in population, un- equal distribution of wealth, poor management, lack of funds and poor of quality of education.

It is widely accepted phenomena the higher the risk in the business the greater would be the returns so by believing in this concept the business units must strike a trade-off between the risk and return. According to

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Khan and Ahmed (2001) risk is an unforeseen and unexpected event in the future that could impact in achieving organization goals. This state of affairs may occur due to various causes like lack of information and awareness, ambiguity etc. Consequently, it contains both negative and positive impact on organization's goal. Global Financial Crisis in 2007-2009 showed that liquidity risk is the major risk faced by banks and other financial institutions and require government intervention in terms of liquidity facility or asset purchase agreement. Drehman and Nikolou (2010) state liquidity risk is the most prominent risk in the banking industry. Failure to manage it could lead to the liquidation of the bank itself.

Fernandez (2010) found that there is a significant relationship between bank performance and credit risk management. He suggested that it is important to establish a proper credit risk environment, sound credit rating system, proper credit administration, risk measurement techniques, sound monitoring and control over credit risk, policy that clearly summarize the scope and allocation of bank credit facilities and the approach through which a credit portfolio is managed for effective credit risk management.

3. OBJECTIVES OF THE STUDY

1) To measure the various risk of the selected banks.
2) To analyze the impact of bank risk on ROA, ROE and CAR of Public banks of India, South Korea, Malaysia and Philippines.

4. HYPOTHESIS

(1) **H_0 -** There is no impact of LR and CR on ROE of the selected banks.

H_1 - There is an impact of LR and CR on ROE.

(2) **H_0 -** There is no impact of LR and CR on ROA.

H_1 - There is an impact of LR and CR on ROA.

(3) **H_0 -** There is no impact of LR and CR on CAR.

H_1 - There is an impact of LR and CR on CAR.

5. METHODOLOGY

5.1 Period of study: The data is collected for the period of last 5 years (2013-2018).

5.2 Type of data: Dependent Variable: ROE (Return on Equity), ROA (Return on Asset), CAR (Capital Adequacy Ratio). Independent Variables: LR = Liquidity Risk (Liquidity ratio), CR = Credit Risk (Non-Performing assets).

5.3 Source of data: For the purpose of this study the data collection was based on secondary data and major source of date is the annual report of the banks.

5.4 Tools for analysis of data: Several statistical tools like Descriptive Statistics and Regression are used for the analysis of the data and its interpretation.

For the purpose of regression analysis ROE (Return on Equity), ROA (Return on Asset), CAR (Capital Adequacy Ratio) are used as the dependent variables and LR = Liquidity Risk (Liquidity ratio), CR = Credit Risk (Non-Performing assets) are used as independent variables.

$ROE = \beta_0 + \beta_1 (LR) + \beta_2 (CR)$ (1)

$ROA = \beta_0 + \beta_1 (LR) + \beta_2 (CR)$ (2)

$CAR = \beta_0 + \beta_1 (LR) + \beta_2 (CR)$ (3)

6. DATA ANALYSIS AND INTERPRETATION

Table-1: shows the descriptive statistics results of ROA:

		MEAN	STD.	SKEWNESS	KURTOSIS	N
INDIA	ROA	223.7490	70.43629	1.248	1.315	20
	LR	6.6070	0.95235			20
	CR	197.0000	238.36482			20
SOUTH KOREA	ROA	47.8775	27.96160	-.160	-1.191	20
	LR	6.8756	3.86266			20
	CR	210.6500	33.43359			20
PHILIPPINES	ROA	10.8825	9.53140	.534	-.056	20

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	LR	5.3980	1.50271			20
	CR	150.5855	20.03393			20
MALAYSIA	ROA	1.7070	0.77155	.277	-1.407	20
	LR	5.6480	1.13424			20
	CR	122.9145	20.29477			20

From table: (1), we can infer that Indian ROA has the highest mean value and Malaysian ROA has the lowest mean value. Indian CR has the highest standard deviation and Malaysian ROA has the lowest standard deviation. Since no value is equal to zero, the variables are not normally distributed. All the variables are skewed. Since no kurtosis is equal to 3 that means all the variables are not normally distributed.

Table: 2 shows the descriptive statistics results of ROE:

		MEAN	STD.	SKEWNESS	KURTOSIS	N
INDIA	ROE	11.2810	5.98822	-.905	.453	20
	LR	6.6070	0.95235			20
	CR	197.0000	238.36482			20
SOUTH KOREA	ROE	46.9310	22.66979	.719	-.343	20
	LR	6.8765	3.86626			20
	CR	210.6500	33.43359			20
PHILIPPINES	ROE	5.9825	2.73576	-.117	-.959	20
	LR	5.3980	1.50271			20
	CR	150.5855	20.03393			20
MALAYSIA	ROE	13.2785	4.03109	.575	-.209	20
	LR	5.6480	1.13424			20
	CR	122.9145	20.29477			20

From table: (2), we can infer that South Korean CR has the highest mean value and Philippines LR has the lowest mean value. Indian CR has the highest standard deviation and Indian LR has the lowest standard deviation. Since no value is equal to zero, the variables are not normally distributed. All the variables are skewed. Since no kurtosis is equal to 3 that means all the variables are not normally distributed.

Table: 3 shows the descriptive statistics results of CAR:

		MEAN	STD.	SKEWNESS	KURTOSIS	N
INDIA	CAR	13.2715	2.87538	-.333	-.929	20
	LR	6.6070	0.95235			20
	CR	197.0000	238.36482			20
SOUTH KOREA	CAR	11.854	3.43663	-.209	-1.481	20
	LR	6.8765	3.86626			20
	CR	210.6500	33.43359			20
PHILIPPINES	CAR	13.0945	2.80798	-.706	-.499	20
	LR	5.3980	1.50271			20
	CR	150.5855	20.03393			20
MALAYSIA	CAR	16.1840	1.48550	.363	1.486	20
	LR	5.6480	1.13424			20
	CR	122.9145	20.29477			20

From table: (3), we can infer that South Korean CR has the highest mean value and Philippines LR has the lowest mean value. Indian CR has the highest standard deviation and Indian LR has the lowest standard deviation. Since no value is equal to zero, the variables are not normally distributed. All the variables are skewed. Since no kurtosis is equal to 3 that means all the variables are not normally distributed.

Table: 4 shows the regression results of ROE:

	β0	**β1**	**β2**	**R^2**	**F Change**
India	11.366	-.297	.010	.148	1.475
	.249	.835	.109		.257
South Korea	152.317	1.723	-.557	0.633	14.691
	0.000	0.071	0.000		0.000
Philippines	13.686	.460	-.068	.512	.8992
	.124	.396	.106		.002

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Malaysia	13.130	-1.101	.052	.164	1.670
	.081	.180	.256		.218

From table (4) the regression result shows that the p value of β1, β2 South Korea is less than 0.01, it is significant at 1% level. So, reject null hypothesis (accept alternate hypothesis). The impact of LR is positive on ROE of South Korea and negative of CR on ROE.

Furthermore, since the p values of β1, β2 of India, Philippines and Malaysia are greater than 0.05, it is insignificant. So, accept null hypothesis (reject alternate hypothesis). Therefore, it clearly indicates that the independent variable LR, CR have no impact on the dependent variable (ROE).

Table: 5 shows the regression results of ROA:

	β_0	β_1	β_2	R^2	F Change
India	34.042	27.884	.028	.148	1.476
	0.765	0.111	.680		.256
South Korea	92.769	-1.645	-.159	.111	1.058
	.036	.351	.432		.369
Philippines	80.860	-1.581	-.408	.450	6.967
	0.019	.429	.013		.006
Malaysia	.454	-.085	.014	.153	1.539
	.743	.583	.115		.243

From table (5) the regression result shows that the p value of β2 Philippines is less than 0.05, it is significant at 5% level. So, reject null hypothesis (accept alternate hypothesis). The impact of CR is negative on ROA of Philippines.

Since the p values of β1, β2 of India, South Korea and Malaysia are greater than 0.05, it is insignificant. So, accept null hypothesis (reject alternate hypothesis). Therefore, it clearly indicates that the independent variable LR, CR have no impact on the dependent variable (ROA).

Furthermore, Since the p values of β1 of Philippines is greater than 0.05, it is insignificant. So, accept null hypothesis (reject alternate hypothesis). Therefore, it clearly indicates that the independent variable LR have no impact on the dependent variable (ROA).

Table: 6 shows the regression results of CAR:

	β_0	β_1	β_2	R^2	F Change
India	15.351	-.502	.006	.316	3.923
	.002	.419	.017		.431
South Korea	24.122	.088	-.052	.236	2.623
	0.000	.659	.035		.102
Philippines	23.679	.117	-.074	.340	4.378
	.0.031	.856	.134		.029
Malaysia	12.759	-.116	.033	.214	2.309
	.000	.686	.050		.130

From table (6) the regression result shows that the p value of β2 India, South Korea and Malaysia is less than 0.05, it is significant at 5% level. So, reject null hypothesis (accept alternate hypothesis). The impact of CR is negative on CAR of South Korea and there is positive impact on India and Malaysia.

Since the p values of β1 of India, South Korea, Philippines and Malaysia are greater than 0.05, it is insignificant. So, accept null hypothesis (reject alternate hypothesis). Therefore, it clearly indicates that the independent variable LR have no impact on the dependent variable (CAR).

Furthermore, Since the p value of β2 of Philippines is greater than 0.05, it is insignificant. So, accept null hypothesis (reject alternate hypothesis). Therefore, it clearly indicates that the independent variable CR have no impact on the dependent variable (CAR).

CONCLUSION

This study helps us examines the liquidity risk and credit risk of the South East Asian Nations for the period of 2013-2018. The sample includes 4 nations (India, South Kora, Malaysia and Philippines) with top 4 banks each.

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The independent variable includes liquidity ratio and NPA. The dependent variable includes ROA, ROE and CAR of the banks. The analysis is done using the descriptive statistics and regression analysis.

The regression analysis shows that impact of liquidity ratio is positive on ROE and negative of NPA on ROE of South Korea. The impact of NPA is negative on ROA of Philippines. The impact of NPA is negative on CAR of South Korea and there is positive impact on India and Malaysia. Furthermore, the study found no significant impact of NPA and liquidity ratio on ROA of India, South Korea and Malaysia. Also, there is no significant impact of NPA and liquidity ratio on ROE of India, Malaysia and Philippines. Hence, we can conclude that the adequate risk management process is necessary for the long-term survival of the banks. The management system should be reviewed on the regular basis in order to determine its effectiveness and compliance with the risk management system.

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A STUDY ON FINANCIAL INCLUSION AND STABILITY PERTINENT TO FINANCIAL LITERACY IN TRANSITION OF GST

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ABSTRACT
The possession of knowledge and understanding of financial matters, Financial literacy is mainly used in connection with individual or person's financial health. Financial literacy brings about the knowledge how to make analytical thinking while taking financial decision and problem solving. It helps in pertaining knowledge in certain areas like real estate, insurance, investing, savings, tax planning and retirement. When financial literacy is absent it may lead to making a poor financial decisions that can have adverse effects of financial health of an individual. Most of the financial problems involve cash flow occurring at different point. These cash flow have to be bought to the same point of time for the purpose of comparison and aggregation.GST is the spiral procedure of 17 indirect taxes and 22 types of cess into one single tax. GST is a simple tax but its implementation has been complex as it has a five layered taxation slab for various commodities. Luxury goods become costlier, items of mass consumption is cheaper. It is nothing new most of the countries in the world are already implementing GST to make their goods internationally competitive. Expect that at the highest layer of 28% on luxury goods. 28% tax is the highest percentage of tax in the world when compared to the highest 17% of tax. There are many areas, which have to be understood properly to get the transition benefit from GST than the indirect taxation system. This study facilitates the simplicity and transparency of GST encouraging higher financial inclusion and stability.

Keywords: GST (Goods and Services Tax), Financial literacy, Tax planning,

I INTRODUCTION
Financial literacy is now one of the top priorities for the most nations. It is more disparaging for developing nations like India, where the majority find financial literacy beyond comprehension. According to literal definition is the ability to use skills and knowledge to take effective and informed money measurement decision for a country like India its plays vital role as it is considered important adjunct for the promotion of financial inclusion and ultimately financial stability. The launch of digital wallets, UPI (universal payments inferences) new age commercial and payments banks played new ways for a less cash economy. There is a huge scope with only 2% of Indians are using mobile phones for the payment It is very less when compared to Nigeria's 11% (Nations financial literacy is 90%). Only 35% of the people are having bank accounts when compared to China's 63%. In India 220 Million Smartphone users and Mobile internet users around 350 million it may increase by 50 million by 2020. One of the major transitions in payment of tax, new GST law was implemented by the government in the initial month of the financial year. GST stands for goods and services tax levied by the government in a move to replace all the indirect taxes. The main idea behind introducing GST is to prove the economy of the nation. One divided market strengthens the India's economy in powerful way. Firstly ongoing digital & technology revolution, let by the ever- interesting penetration of smart phones and internet on mobile has revolutionised digital payments PPI (Prepaid payment instruments) controlled by PSS Act. Secondly the payment space has witnessed the entry of several non-banking institution offering payment services and solution. Thirdly customers are becoming more demanding and expect instantaneous and one touch payment solution. Finally there have been several progressive changes in regulatory frame work (implementation of GST). To increase in adaptation of digital payments by merchants will result in a larger strength for the government to get the revenue in time. With improved dependable history of digital transaction their credibility will drive opportunities for them to further their business. To this effect, the finance minister has made provisions for SIDBI to facilitate the availability of unsecured loan, encourage higher financial inclusion and creating opportunities for this segment.But this can be utilised by the individual based on their financial knowledge.This study will gives the clear picture about the inclusion of GST and how this financial transition faced by the suppliers to get the knowledge about payments of tax by monthly this will helps the government to get its revenue in time for the development of economy.

The present status of India's population and the percentage level of financial literacy is taken into consideration for the purpose testing the financial knowledge. Though India is a thickly populated its financial literacy percentage is too less when compared to other nations in the world. The following table and graph shows the present status of financial literacy in India.

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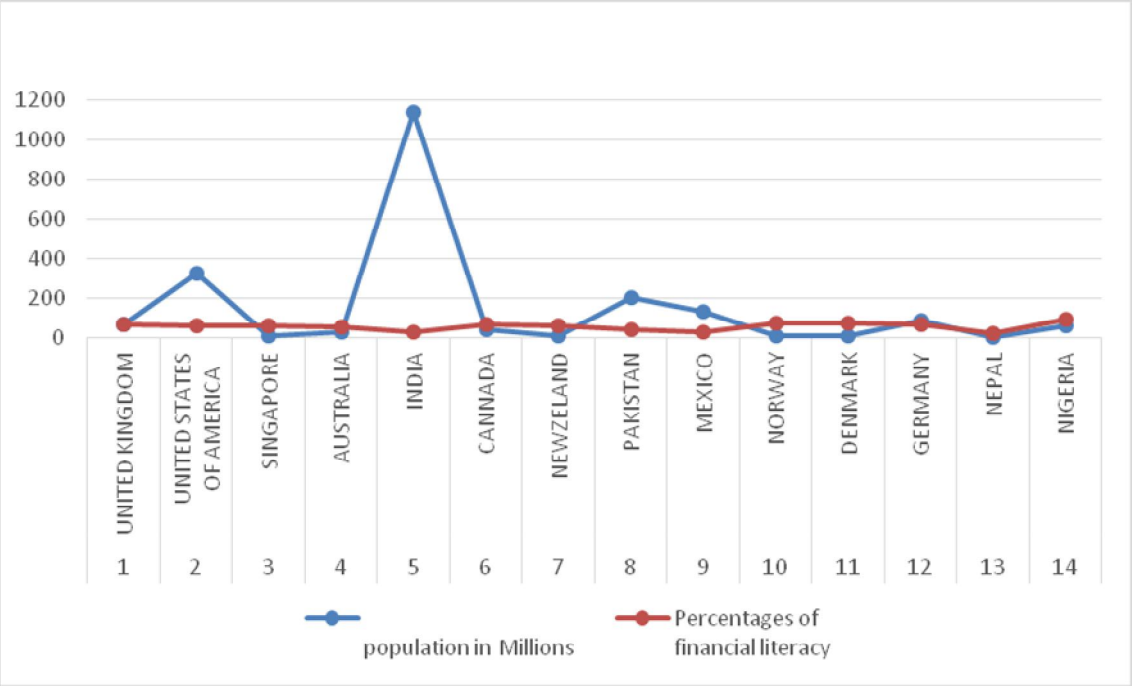
S.No	Name of the country	Total population	population in Millions	Percentages of financial literacy
1	UNITED KINGDOM	66395117	66.39	67
2	UNITED STATES OF AMERICA	325716222	325.71	57
3	SINGAPORE	5754009	5.754	59
4	AUSTRALIA	24625543	24.625	53
5	INDIA	1347273427	1134.7	24
6	CANNADA	36803637	36.8	68
7	NEWZELAND	4729653	4.726	61
8	PAKISTAN	199079010	199.07	41
9	MEXICO	130031488	130.03	29
10	NORWAY	5331507	5.33	71
11	DENMARK	5744893	5.744	71
12	GERMANY	82211963	82.21	66
13	NEPAL	29478634	29,01	18
14	NIGERIYA	55,981400	55.98	90



Sources: countries economic, com

II LITERATUE REVIEW.

(a) **Raghuram Rajan** (Financial inclusion necessary for sustainable growth)- He outlined in his article:

i) To know your consumer requirement

ii) Encouraging competition to prevent exploitation

iii) Ensuring some flexibility and forgiveness in future arrangement

iv) The need for skilling

v) To encouraging financial literacy and ensuring consumer protection

In the foreseeable future we will bring formal financial services to every Indian who wants them. Financial inclusion will be an important element in ensuring access and equity- the necessary building blocks for sustainable growth of own country. Financial inclusion reduce the corruption.

(b) **Jai Prakas**h -2014- In his research study mentioned that GST at the central and the state level are expected to give more relief to industry, trade, agriculture and commercethe implementation of GST in India

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(c) **Nishitha Guptha** (2014) -In her study, the implementation of GST In India in Indian frame will lead to commercial benefits which is un touched by VAT system and would essentially lead to economic developments. Hence GST may user in the possibility of a collective gain for Industry, trade, agriculture and common consumers.

(d) **Saravanan Venkatsalam** (2014)- He analysed the Post effect of GST on the national growth. He also suggested that financial household consumption expenditure and general government consumption expenditure are positively significantly related to GST.

III OBJECTIVES 0F THE STUDY

1. To understand the concept of GST
2. To understand the advantages and challenges of GST in Indian context.
3. To understand how tax compliance will be easier with simplified tax.

IV. ANALYSIS.

1. **To understand the concept of GST.**

VAT in core concept in GST. Concept of Vat (Value Added Tax) was first proposed in 1918 by German Industrialist Dr. Wilhelm Von Siemens. France was the first country to introduced VAT on 10th April 1954European countries introduced VAT on goods and services.European Union decided to adopt VAT w.e.f 1978(after1977) (@ Rate between19% to 25%).China introduced VAT in 1984 & full-fledged Vat was implemented in china in 1994 (@ 17%).In Japan, there is 'Consumption Tax' of 5% {4% national levy and 1% regional levy}About 160 countries have introduced VAT **except** USA (major revenue central level based on income tax and there is retail tax @ state level).

Concept of VAT was developed

- To avoid cascading effect of taxes.
- Transparent tax collection system
- Reduces the tax evasion
- Ensure better tax compliance and increase tax revenue.

In India this system was named as Mod vat was introduced in 1986 (Modified value added tax). Mod vat was renamed as Cen vat with the effect from 1/4/2000 at central level – benefit (Credit) to the manuf. those who are paying CVD on imported goods. This system of tax was introduced in service tax in India w.e.f. 2002. The credit of excise duty and service tax was made inter changeable .Whereas Cen vat not extended to sales tax because it is coming under the jurisdiction of state. However the state government has introduced sales tax VAT after 2005.

For the first time consumer will get know the actual amount of taxes they are paying for goods and services in the form of a single GST rate that will be split between central and state government. At present what is shown in an invoice is the state level value added tax (VAT) and in certain cases the service tax levied by the central government. This does not cover part of taxes borne by the raw materials and services used by various intermediaries which get added to the final price of the item purchased.

2. TO UNDERSTAND THE ADVANTAGES AND CHALLENGES OF GST IN INDIAN CONTEXTTHROUGH FINANCIAL LITERACY.

GST stands for goods and services tax levied by the government in a more to replace all indirect taxes. The main idea behind introducing GST is to improve the economy of the nation. The government needs fund for various purpose like maintenances of i) Law and order, ii) Defence, iii) Social/ health services etc. Government obtain funds from various sources, out of which one of the main sources is Taxation. Usually tax liability was payable by the companies only at the end of each and every financial year before implementation of 115JB .When Minimum alternative tax(MAT) was introduced by our former financial minister by P. Chidambaram, the rule is every registered companies has to pay 18.5 % of tax based on its book profit. Whereas GST is a supplier's tax or Consumption tax ,the tax payers are filing the returns every month except the composition tax payers they are filing the tax liability three months because of this tax filing procedures government is earning the benefits earlier than the other filing system. This system has many advantages to understand the financial inclusion of GST financial literacy is required.

1ADVANTAGES

- GST is a single taxation system it will reduce number of indirect procedures

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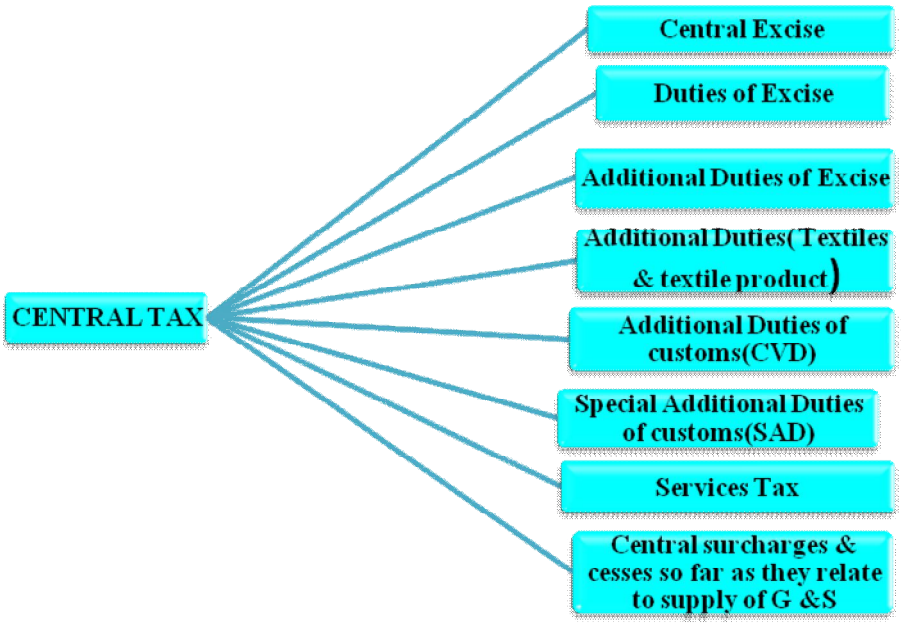
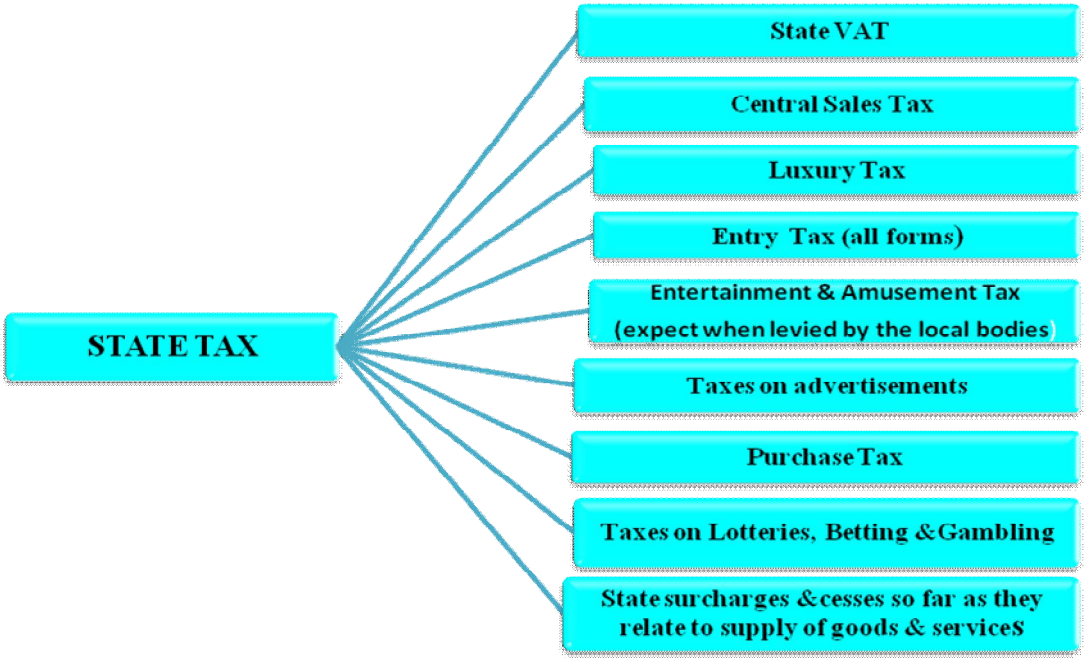
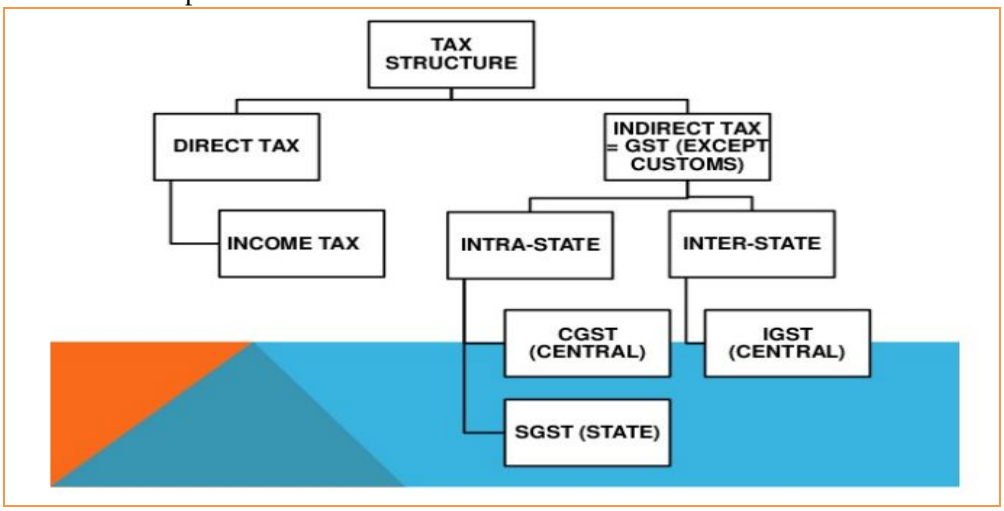




All these above indirect taxes are subsumed in the Tax system of GST.The following flow chart is the tax structure of India after the implementation of GST.



Source: GST book-Datey

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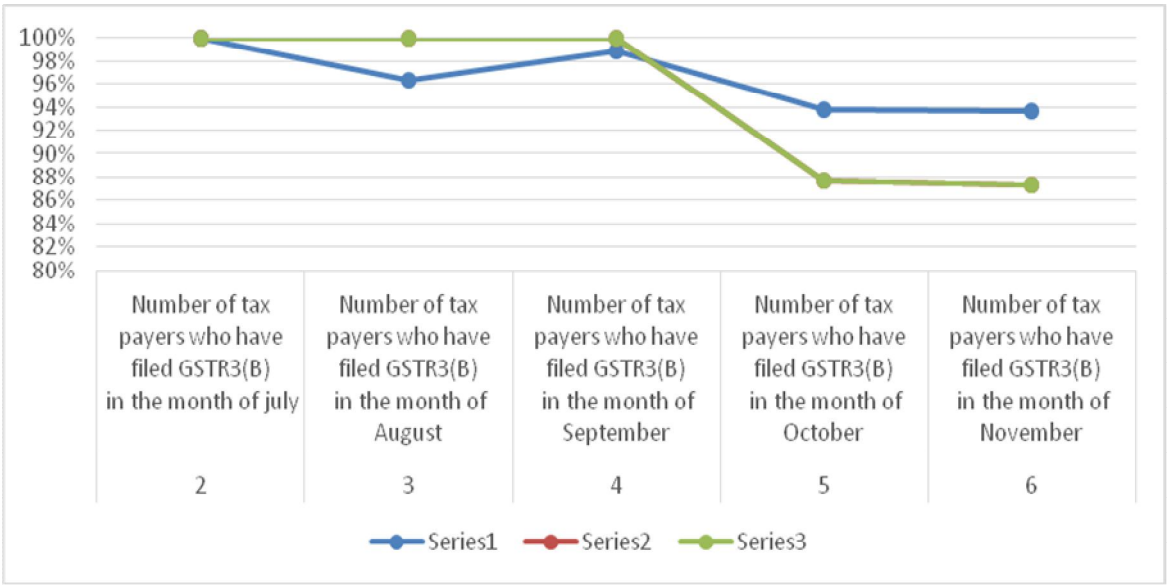
- The price of the product will be reduce so this system would prove to be beneficial for the people who are paying huge prices.
- It creates positive impact on the central & state level according to the latest reports the introduction help India to gain $15Billion every year.
- GST system of taxation increase exports.
- It create more employment opportunities.
- It enhanced economic growth.
- GST system reduce the burden of central and stategovernment. The tax payment made by the supplier depending upon the business which was registered by the merchants. Like

INTERSTATE SUPPLY- SGST & IGST

Intra state supply- SGST & CGST, there is no set-off input tax credit with SGST & CGST viz versa. Therefore the tax collected by the state government immediately for the purpose of development of the state.

S.NO	Details of GSTR 3 (B)returns filed (July to December)	STATUS AS ON 1.1.2018	Absolute change	%
1	Number of tax payer who have applied for composition scheme	16,61,494		
2	Number of tax payers who have filed GSTR3(B) in the month of July	60,70,288		
3	Number of tax payers who have filed GSTR3(B) in the month of August	63,13,676	243388	4
4	Number of tax payers who have filed GSTR3(B) in the month of September	63,82,942	69,266	1.1
5	Number of tax payers who have filed GSTR3(B) in the month of October	59,89,397	-393545	-6.17
6	Number of tax payers who have filed GSTR3(B) in the month of November	56,11,071	-378326	-6.3
7	Number of tax payers who have filed GSTR3(B) in the month of December	5.6 million		



Sources: CBEC GST

From the above table gives the clear picture about the GST filing returns status from July 2017 to December2017. In the initial month of July 60, 70,288 persons are filed. Some of them are not filled because of no much literacy about GST Law and also there was a trouble in the return filing software which was made by Infosys. (Because more number of people are filed their returns in the last date) Whereas in the month of the filing status was increased to 2, 43,388, the total number of persons filed returns in the month of Augustis 63, 13,676 and in the month of September is 6382942 but in the month of October onwards there is a decrease in numbers those who are filling the returns in GST. Because of:

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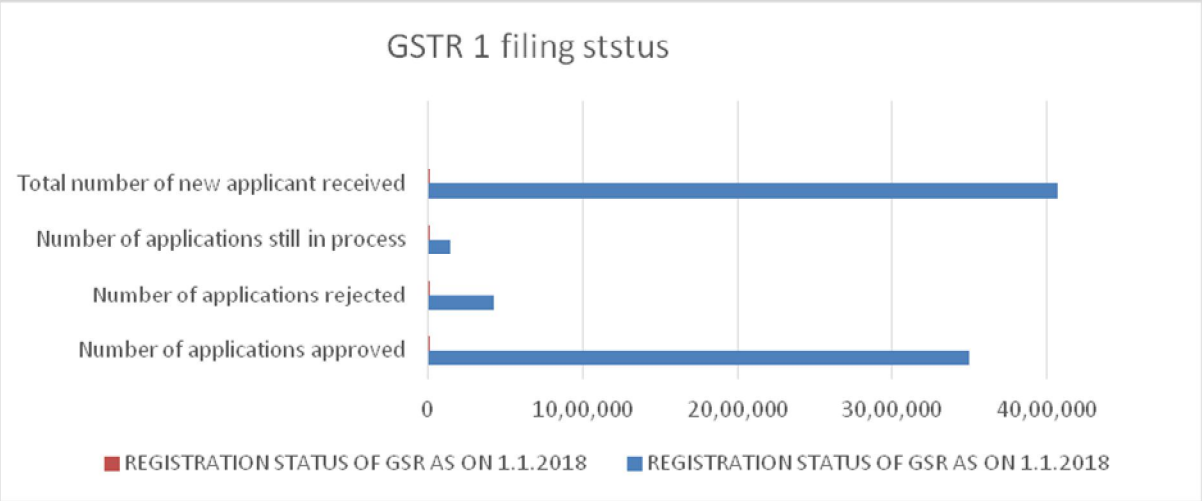
i) Knowledge about GST is increased based on the segregation, the returns filed by the tax payers (GSTR 1, GSTR 3B, GSTR 4. GSTR2)

ii) Composition scheme return filers are increased their registration amount is increase from 75 lakh to 1.5 crore in GSTR 4

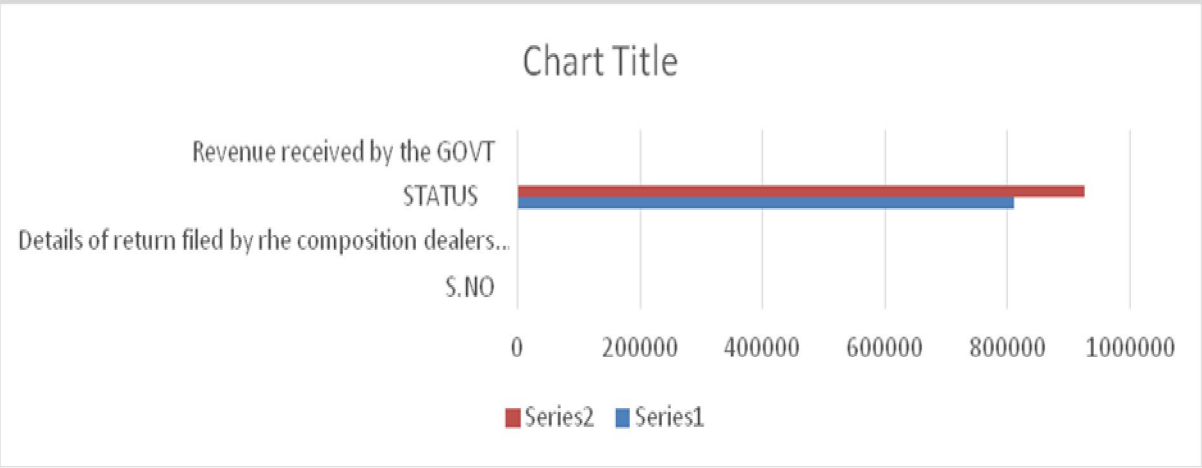
REGISTRATION STATUS OF GSTR 1 AS ON 1.1.2018			
S.NO	Registration details as per (CBEC)	Status as on 1.1.2018	% of Registration as on 1.1.2018
1	Number of applications approved	35,00,257	86
2	Number of applications rejected	4,23,445	10.4
3	Number of applications still in process	1,43,655	3.6
4	Total number of new applicant received	40,67,357	100



Source: CBEC-GST

S.NO	Details of return filed by the composition dealers (July to December)	STATUS	Revenue received by the GOVT
1	From July to September (final date as per 24th December)	8,10,000	3.35 Billion
2	From October to December (Final date as per 18th January)	9,25,000	4.2 Billion

Source: Business standards



3. To understand how tax compliance will be easier with simplified tax.

The following table gives the clear picture about the GST tax and how it is comparatively less when compared to earlier indirect tax system.

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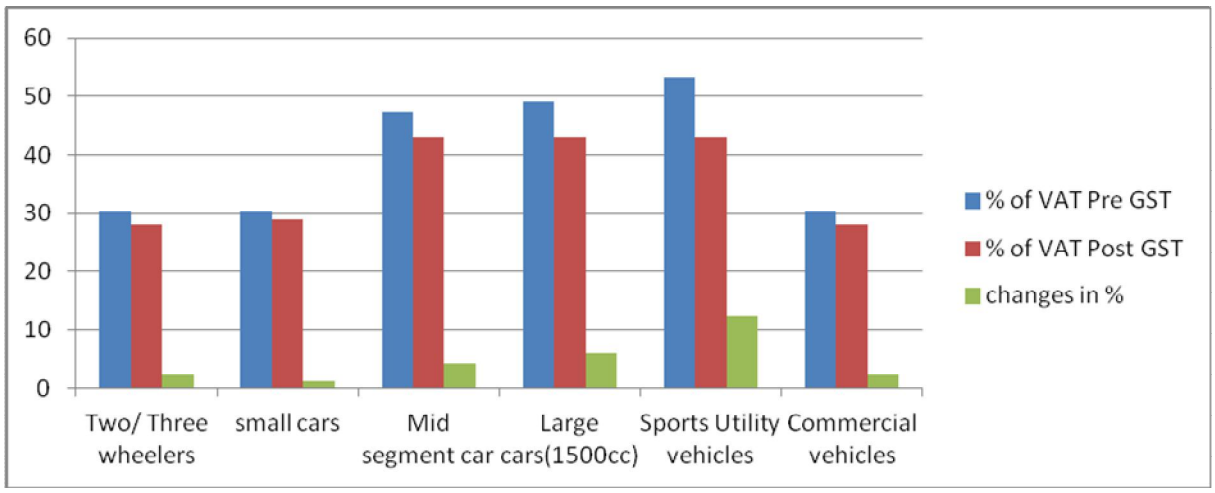
- **Automobiles**

Segment	Excise	CST	VAT*	Infrastructure Cess	Luxury Cess	Total pre GST rate	GST	Cess	Effective GST	Change
Two/ three wheelers	12.5%	2.0%	13.5%			30.2%	28.0%	0.0%	28.0%	2.2%
Small Cars (length < 4m)	12.5%	2.0%	13.5%	1.0%		30.2%	28.0%	1.0%	29.0%	1.2%
Mid Segment Cars	24.0%	2.0%	13.5%	4.0%		47.3%	28.0%	15.0%	43.0%	4.3%
Large Cars (engine > 1500 cc)	27.0%	2.0%	13.5%	4.0%	1.0%	49.0%	28.0%	15.0%	43.0%	6.0%
Sports Utility Vehicles	30.0%	2.0%	13.5%	4.0%	1.0%	55.3%	28.0%	15.0%	43.0%	12.3%
Commercial vehicles	12.5%	2.0%	13.5%			30.2%	28.0%	0.0%	28.0%	2.2%

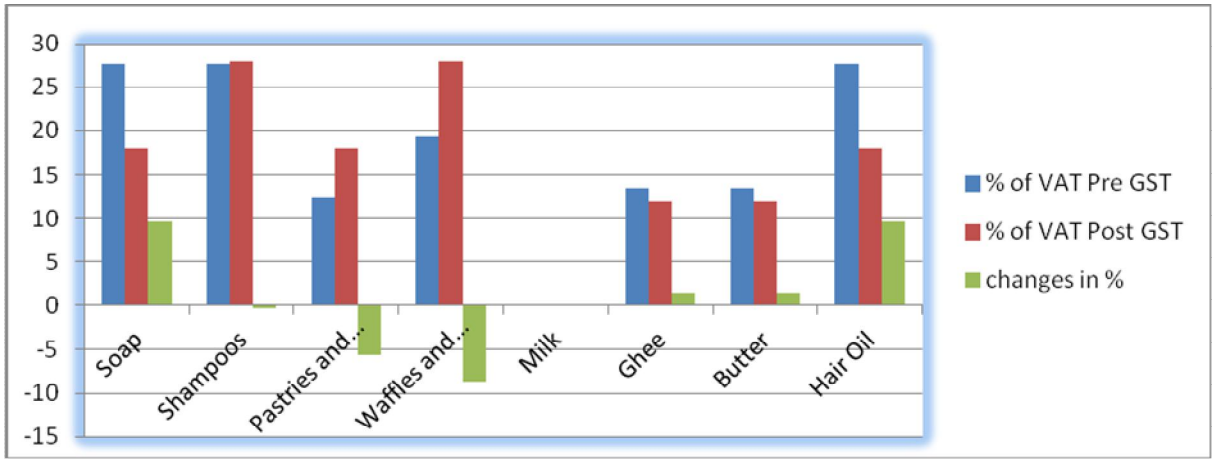
Note: * VAT rates vary across states; luxury cess of 1% is tax collected at source for cars whose ex-showroom prices are more than Rs 1 million



- **FMCG**

Segment	Excise	VAT*	Total pre GST rate	Effective GST	Change
Soap	12.5%	13.5%	27.7%	18.0%	9.7%
Shampoos	12.5%	13.5%	27.7%	28.0%	-0.3%
Pastries and cakes^	6.0%	6.0%	12.4%	18.0%	-5.6%
Waffles and wafers coated with chocolate^	12.5%	6.0%	19.3%	28.0%	-8.7%
Milk	0.0%	0.0%	0.0%	0.0%	0.0%
Ghee	0.0%	13.5%	13.5%	12.0%	1.5%
Butter	0.0%	13.5%	13.5%	12.0%	1.5%
Hair Oil	12.5%	13.5%	27.7%	18.0%	9.7%

Note: * VAT rates vary across States; ^ Wide difference in State VAT rates



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Even though GST is implemented in the month of April 2017, the government is formed GST council headed by the finance minister and other members of the council are the representative of each state. So far they have conducted several GST council meetingfor further discussion about the tax rate which is collected by the government under GST law. Lot of changes have been made based on the expectation of the consumer, Manufacturer and the supplier.Some of the changes which is already made by the government after the GST council meeting. The following tables are prepared based on the changes which is recommended by the GST council.

S.NO.	Rate changes as per 20th GST Council meeting (5th August 2017)	Current rate	Changed rate
1	Job work in respect of textile products	18%	5%
2	Services by the way of printing a newspaper , books, journals & periodicals	18%	12%
3	The above services provided by others that is unregistered	18%	5%z
4	Work contract provided by the government, local authorities, or government authorities in respect of post harvesting ,strong infrastructure for agriculture produce	18%	12%
5	Margin/ Commission payable to fair price shop dealers central or state government	18%	Nil
6	Admission to planetarium	28%	18%
7	Rent -a cab service	5%	12%
8	Goods agency transport services (GTA)	12%	5%
9	Small house keeping service providers (plumbers'/ carpenters)	Tax applicability according to the ECO	

S.NO.	Rate changes as per 23th GST Council meeting (10th November 2017)	Current Rate	Changed rate
1	Changes in the composition scheme **(Amount) It may be extended to 2 crore**	75 lakhs	1.5crore
2	Composition Tax is 1% of the turnover services not exceed 5 lakh		
3	Delay in filing GSTR3(B) late fee reduced from Rs. 200 to Rs. 20/-for the regular tax payers and other tax payers has to pay Rs. 50 per day		
4	Export services to Nepal & Bhutan are exempted from GST		

S.NO.	Rate changes as per 25th GST Council meeting reduced 29 rate of goods and 53 categories of services (18th Jan 2018)	Current rate	Changed rate(effect from 25th Jan 2018 onwards)
	The main purpose of this meeting is to simplification of return filing process with the help of Infosys IT service provider for GST technology network		
1	Revised rate of second hand medium and large cars	28%	18%
2	Other used motor car vehicles	18%	12%
3	Distribution charges of private LPG	18%	5%
4	Bio-fuel power bus	28%	18%
5	rate of precious stones and diamonds	3%	0.25%
6	Sugar boiled confectionery and drinking water packed in 20 Litters bottles	18%	12%
7	Sprinkles	18%	12%
8	Tailoring services provided	18%	5%
6	Penalty delay in returns filing (GSTR 1,GSTR 3, GSTR 5A)	50/-per day	20/- per day
7	Legal services provided by the government legal authorities and government entity	Exempted from the tax	

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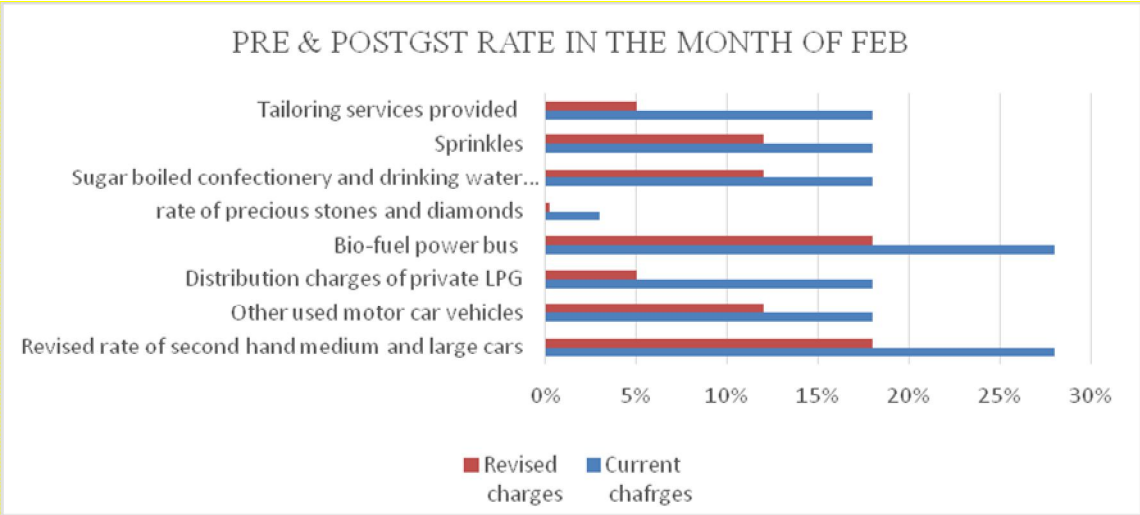

The 31st GST council meeting was held on 22nd December 2018, focused on plugging gaps in the GST eco system, few changes were announcement. The highlights were rate tweaks, relief in the form of due date extensions, clarity on GST2.0 and implementation and stream lining of GST compliance like return filing, registration and refund procedure on the portal.

- GSTR- 9,9A, 9C simplified and filing due date has been extended to 30th June 2019
- Composition scheme is going to be introduced for small service providers too
- Bank charges (Savings Bank), and Pradhan Mantri Jan Dhan Yojana has been exempted from GST
- No late fees for filing GSTR-1/3B/4for the month/ quarters from July,2017to 2018and 31st March2019.

Sl.No	Rate changes as per 31st GST Council meeting reduced 22 rate of goods and services	Changes in tax rate	
		Current Rate (%)	Changed rate (%)
1	Vegetables provisionally preserved but unsuitable for immediate consumption	5	0
2	Vegetables cooked/uncooked via steamed, frozen or boiled(branded)	5	0
3	Parts for manufacturing renewable energy devices falling under chapter 84,85 or 94 of Tariff	5	5
4	Music Books	12	0
5	Natural cork	12	5
6	Fly ash blocks	12	5
7	Walking sticks	12	5
8	Marble Rubble	18	5
9	Agglomerated cork	18	12
10	Cork roughly squared or debugged	18	12
11	Articles of Natural Cork	18	12
12	Movie Tickets < or = Rs. 100	18	12
13	Premium on Third party insurance vehicles	18	12
14	Accessories for Handicapped Mobility Vehicles	28	5
15	Power banks	28	18
16	Movie Tickets>Rs.100	28	18
17	Video game consoles, equipments used for Billiards and Snookers and sport related items of HSN code 9504	28	18
18	Retreated and used pneumatic Rubber Tyres	28	18
19	Colour Television Sets & monitors upto "32 inches"	28	18
20	Digital & Video Camera recorders	28	18
21	Pulleys, Transmission shafts, Cranks and Gear Boxes under HSN 8483	28	18
22	Tax rate on Air travel of Pilgrims reduced	28	18

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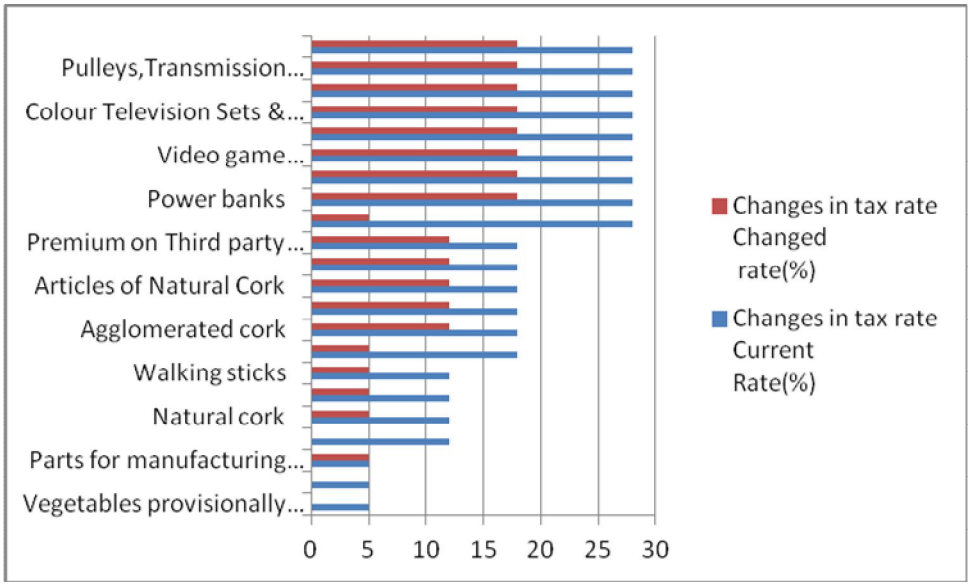

Understanding the concept of GST is very important for all kinds of people in India. For understanding the new inclusion financial literacy is necessary. Because of technology development financial literacy helps to develop all kinds of Business activity through digital.To increase in adaptation of digital payments by merchants will result in a larger strength for the government to get the revenue in time. With improved dependable history of digital transaction their credibility will drive opportunities for them to further their business. To this effect, the finance minister has made provisions for SIDBI to facilitate the availability of unsecured loan, encourage higher financial inclusion and creating opportunities to develop the business and increase the financial stability of the nation.

V. CONCLUSION

In order to reach financial inclusion of GST to develop the nation's stability financial literacy plays a vital role to understand concept of GST. It needs lot of financial education programs (like Workshops conferences) literacy campaigns. These two has to run in parallel. GST is an online taxation system to understand the concept of GST firstly knowledge about the GST law is required secondly to learn the practical difficulty while filing the tax under the system of GST. With the help of the financial knowledge Item of mass consumption would fall under 5% tax bracket. There will be a two standard tax bracket 12% and 18% under which bulk orders are taxed. The highest tax percentage of 28% would be applicable to the luxury goods. Financial literacy helps to identify the frauds for example after the 29th GST council meeting they discussed about e-way bill system with effect from the month of February but a fake bill GST was found in the market in Punjab (fake bill copy attached in the references). In the 31st GST meeting E-Way bills norms made according to that tax payers cannot generate e-way bill if they do not have their GST file on GST returns for at least two consecutive tax periods Universities and business schools can offer specialized courses in financial education to prepare trainers. Financial institutions can engage NGOs to promote financial literacy among their existing and potential clients. Integrate financial literacy, financial literacy into various types of development programs: microfinance, vocational education, skills training, business development, health, nutrition, agriculture, food security programs they can conduct GST programs also.

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ORGANIZATIONAL EFFECTIVENESS: THE NEW CHALLENGES OF SMALL FIRMS IN INDUSTRY 4.0

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ABSTRACT
The organizational effectiveness is the cutting edge strategy to survive the market competion arising from the consolidation market by large firms. The scope of operation of small, medium and large firms are now overlapped highly as cyber technology enabled the market penetration deep at a low cost and less time. Still, the large firms have constrained the growth of MSMEs to a certain level using their resource supremacy. Cyber Technology, the driving force of Industry 4.0 has equipped the enterprises to be SMART and identified the potential to develop new ideas and strategies as the prime resource than the capital, labour etc. The infrastructure development and public utilities for providing high speed data interconnectivity and information technology facilitated the fast adoption of technology in rural and lower strata of population as well. The challenges of MSMEs include, nonavailability of modern technologies, market constrain to enhance economies of scale of operation, inadequate skill development facilities to bridge the skill gap, multilayering in MSMEs itself in use of technology and develop new technologies. This paper analyze how the MSME sector in India benefit from the Industry 4.0.and the effect of socio-political environment on MSME is adapting to Industry 4.0

Keywords: Industry 4.0, MSMEs, Organizational effectiveness , Technology Adoption JEL Classification: E23,E24,E26, O31,O33,O35

INTRODUCTION
The Industry 4.0 is based on the the concept 'Factory 4.0' , a streamlined manufacturing process in which all stakeholders of the business are networked and coordinated through the data collected and all the steps in produduct development is carried out from the ideas condeptualised from collected data. It integrates, Internet of things, Robitics, Big-Data Management,Autonomous vehicle, Advanced Manufacturing Systems, Mass Customization, Advanced Material, and Additive Manufacturing. The process is integrated with Sensors, Cloud Computing and Cyber Security.This is annovative approach in reducing redundancy in process, wastage, idletime, nonproductive processes, and reduces material movement. This pulls down cost and increases production. This shows that is Industry 4.0 is a road map to enhance organizational effectiveness (Think Act: Industry 4.0, 2014)**.**

The organizational effectiveness is a measure to translate internal competencies to maximum yield . Both internal and external factors influence the effectiveness in which the internal efficacy is the potential of the firm to transform opportunities to attainable targets and the threats to controllable constraints (Eydi, 2015) . The organizational growth is a function of its effectiveness and success of their strategic management in managing, opportunities, threat, scarcity and constraints. The concept of Industry 4.0 envisages the same objectives organization effectiveness, to reduce the cost and to increase productivity (Khan, 2016). Hence, the organizational effectiveness partially depends on the strategy to embrace the technology in business process to substitute redundant, slow and less accurate jobs with high speed machine cycles so that the cycle time will be shortened and average production will increase. But, the challenge to the small firms is their limited financial resources to invest on technology. The primitive technologies used in small firms is not enough to increase their economies of scale or to reduce the cycle time or to reduce man hours. The scarcity in skilled labour and financial constrain to get modern technologies suffocate the growth of small scale segment.

SMALL AND MEDIUM SCALE INDUSTRIES IN INDIA
The industries are classified into three, based on the investment and they are , INR 0-25L (Micro) , (INR 25L to 5 Crore(Small) , and INR 5-10 Crore (medium). (The bulletin published by the Development officer of MSME (Micro, Small and Medium Enterprises) of Government of India (January 7 , 2019) revealed that there are 1,05,21,190 units small scale industries across India in which 55% are located in rural India and 99.5% are tiny units having investment upto 25 lakhs. This reveals the role of small scale industries in generating employment opportunities in terms of self-employment. 57.74% are SSSBEs (Small Scale Service Business Enterprises).

The general features of this tiny industries intense Small Scale Industry are, proprietor ships and less diversified product range. The challenge is the limited exposure to modern technologies and professional management system. The small firms also must incorporate cost effective technologies to enhance their managerial as well as process efficiencies.

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STATEMENT PROBLEM

The small Scale Industries have to enhance their internal strengths by incorporating modern technologies in process, communication , computation and coordination. This paper analyses to what level the small enterprises use technologies to be a part of industry 4.0, the concept of 'Smart Enterprises' that use 'artificial intelligence in business management

THEORETICAL BACKGROUND

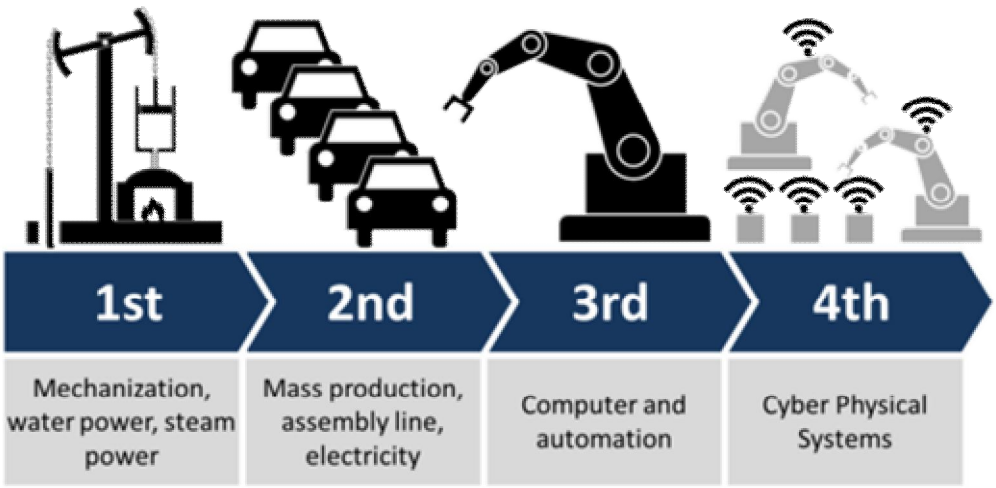
Industry 4.0 is a strategy of value creation and using new technologies to develop potentials to sustain in business. The overview of the Industry 4.0 is based on four facts: innovation, technology, competitiveness and internationalization ((MAKSUMIC, 2017). The Industry 4.0 links the Management, Research, Strategy, Policy and Evaluation of any firm to develop internal strengths. The Industry 4.0 provides the opportunities to modernize the industrial production and enhance value creation. The Industry 4.0 helps the firms to exploit the uncertainties to limit the constraints and to seek technologies to customize each firm. The Industry 4.0 develops internal strength matching to the need of each firm.

The Industry 4.0, a concept that envisages the 'SMARTNESS' in every firm to overcome competition by reducing internal consumption. The consumption of two resources, time and financial resources in a higher level internally pull down overall efficiency. The delay always increase cost by pulling down overall productivity. Hence, the Industry 4.0 emphasize the high degree of automation (Kang, 2016) . Hence, the attributes of Industry 4.0 are, search, identify, develop and implement technologies that reduce internal consumption that the internal resources can be converted maximum to revenue generating, high utility products or services. In other words, the effective use of Cobb Douglas Equation of substituting the labour with machine.

When we discuss Industry 4.0, the first analysis will be about technology leverages in large scale firms. But, the effect of technological leverages is small firms is more visible and high. This paper is an analysis of how Inddustry 4.0 is relevant in small firms.

Leapfrog of SMEs in India from Industry 1.0 to 4.0

The four stages of industry revolutions are mechanization (water power , stream engine), mass production (assembly line), Computer automation, and Cyber Physical Systems. In the case of small enterptrises, they had been stuck at the industry 1.0 as they could not gain the economies of scale due to their constraints. But the Cyber Physical systems enabled them to link their products to the vast supply chain and position them in somewhere in the galaxy of companies from cottage industry to very large scale industry. The Industry 4.0 is a new revolution of deep inclusion of all kinds of companies, interlinking the supply one to another.



(Deborah Kozdras: https://image.slidesharecdn.com/industrialrevolutionhistorymystery-170119214948/95/industrial-revolution-history-mystery-1-638.jpg?cb=1484862609)

INDUSTRY 4.0 : IS IT SUITABLE FOR SMALL FIRMS?

The increase in economies of scale reduce marginal cost and reduce the fixed cost per unit. The Industry 4.0 is apt for the industrially developed counties where the labour cost is increasing continuously due to the high rate of aging of the population. But, to what level Industry 4.0 will be apt for an economy like India where percentage of youth in population is high , unemployment is increasing and the role of Governments in financing the enterprises in low strata of population is negligible.

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The limiting factor of technological embracing is the potential of the firm to adopt push or pull strategies to sell the products. The market size of small firms is limited to its neigbourhood within a few kilometers. The firm need to investment in capacity as well as promotion to harvest the fruits of economies of scale. The products of small; firms are not technological unique but generic in nature and utility, low priced and survive in highly competitive market dominated by prominent brands. This decides the level of investment and technology for each firm.

But, this proportion is not true in a few cases where human intelligence is a sort of product as service , viz. consultancy, software, work outsourcing using information technology, etc. These business opportunities may fall under the definitions of micro or small industries in terms of investment or number of employees but, their annual turnover may not fit into the limits of less than INR 20 Lakhs per annum (now raised to INR 40 lakhs defined for exemption for GST (Goods and Service Tax). Hence, the scope of this research is limited to small manufacturing , retail and Small Scale Service Business Enterprises.

The use of technology in small firms may have two objectives , either to increase perfection or reducing wastage or to enhance economies of scale by limiting the labour requirement. Due to the scarcity of skilled labour in every sector including agriculture, the degree of automation has multipled mant times. This resulted in high output in less time and reduction in wastage.

COBB-DOUGLASS EQUATION AND INDUSTRY 4.0

Cobb and Douglas explained a two factor production function, named Cobb-Douglas production function, given by $Y = bL^k C^{1-k}$, (1) where L denotes the labor input, C is the capital input, b is the total factor productivity, and Y is the total production (Fu, Wang, & Yu, 2013). The Labour is replaced with capital (incestment on facilities) such that the jobs which were difficult by the labours to execute and contral at an expected speed. The automation using mechnised systems helps to replace highly redundant jobs by high speed machines which can be controlled numerically and remotely using cyber controls. This replacement will be high for the jobs for which skilled labour is scarce or scale needed is high. The cyber based Industry 4.0 replaced the physical documentation, physical information transfer, paper documents , physical data storages etc with cloud computing, internet data transfer and WiFi connectivity at low investment. The Cobb-Douglas production function was coined in 1928 and the industry 4.0 can be explained with the same concept where 1-k >> k.

Technology adoption in Industry – A review

Sector	Traditional method	Technology	Effect
Agriculture	Ploughing using Bulls	Tractors	Replacement of bulls
	Manual Earth movement	Earthmovers	Labour reduction,
	Manual Harvesting	Harvesting machines	Labour reduction
	Manual Crop cleaning and processing	Cleaning machines	Labour reduction
Engineering	Manual machining using hand tools	Lathe, drilling machines, cutting, welding	Perfection increased and quantity increased
	Lathe, drilling machines, cutting, welding	Computerised Numerically controlled machine	High rate of production Reduction in wastage High perfection Consistency in standards
Engineering drawing	Manual drawing	Auto CAD	Easy to draw many choices , fast, high degree perfection, easy to correct, easy to store in soft form
Electronics	Manual soldering	Wave soldering	Mass production, consistency in production, less rejection, Large scale integration is possible
	Small scale integration	Very large scale integration using surface mounting components	Device size reduction, high function integration, multiple utility integration
	Multiple board integration	Programmable control	High degree of integration

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		devices with advance computational and communication	in instrumentation with high accuracy and consistency in standards.
Documentation	Large ledgers and Registers, Manual book keeping	Computerised and digital data storage, transmission , and retention	Time and space saving, easy report generation and accurate decision making
Traditional transaction	Postal and physical documentation	Digitalization and advanced communication system	Fast and intime transaction, reduced trading cycle and increased volum transaction
Promotion	Advertisements in cinema or sponsoring reality shows, exhibitions, posters, printed brochures	Websites , social media, email, ebrochures	Low cost, fast, target a large customerds, high conversion rate
Sales	In-person or over the counter sales	Direct sales and online sales	Large volume instant sales, low cost
	Order follow up overphone	Instant confirmation and payment gateways	Quick concerstion of enquiries to sales
	Delivery planning	Effective computerized logistics system	Timely delivery, quick return of faulty or wrong products
After sales service	Accessing local non professional services or waiting fo a long time for the response from service personal	Online call centres and centralized or localized service centres	Quick service and increase in customer satisfaction
Procurement system	Local procurement or long waiting for delivery	Online procurement and vendor rating	Fast and controlled procurement
Material handling system	Manual	Powerful and convenient material handling and machine system	Safe material handling
Inventory Management	Manual and stock updating only annually or bi-annually	Computerized system	Continuous and accurate
HR and pay roll system	Manual	Digital system	Quick, accurate and easy to store

ENVIRONMENTAL EFFECT FOR INDUSTRY 4.0 IN MSMES

From the above table, it is clear that the degree of Industry 4.0 in small firms depends on the industry policy of the Governments as the small firms utilize the public utilities than own utilities to revolutionize their business. In the Indian context, the Post Liberization industry policy of Government of India was to facilitate the small firms to grow taking the advantage of the new investment environment. The rapid development in the information and computation technology in India catelysed the digital transactions and this is the real Indistry 4.0 development in India that fueled the growth of entrepreneurship and MSMEs.

The credit facilities and Venture financing also fullled the growth of the industry. The growth of different sectors fueled the co-growth as one sector turned to be customer or supplier to the other. The overall development fueled the infrastructural and facility development to give a platform for millions of small firms to access National Industry 4.0 to generate employment opportunities.

Adoption of Technology in Business of SME in India (Ramdani & Kawalek,, 2007)

Technology adopted	Effect
Computerised business administration	Computerised account statement using accounting softwares, inventory management, procurement, billing, promotion, vendor and distribution Management, Pay roll management
Product coding, traceability	Easy traceability throughout the proces
Use of Websites and mobile	Effective promotion marketing

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applications	
Digital fund management	Secured and fast fund management
Use of Internet of Things in Logistics , distribution , customer care	Effective customized service
More services based on Internet of Things	More entrepreneurships
High degree of automation in process	Low cost, high productivity, low wastage

Ramdani, B., and Kawalek, P., 2007, in IFIP International Federation for Information Processing, Volume 235, Organizational Dynamics of Technology-Based Innovation: Diversifying the Research Agenda, eds. McMaster, T., Wastell, D., Ferneley, E., and DeGross, J. (Boston: Springer), pp. 409-430.

Challenges for MSMEs to gain from Industry 4.0

Rapid obsoletion is one othe challenges that MSMEs face industry 4.0 in quality assurance, process optimization and quality upgrading. The high pace of the market leaders compel the small firms tu upgrade without gainining the benefits of economies of scale of the existing investment. In this issue, the Government of India has develop policies to share the research investment and to provide subsidy to the investments that small firms bear to maintain global quality level. The Government also has to develop a platform to accommodate the veteran scientists from industry and research firms like DRDO to extend their knowledge to develop new technologies to replace the obsolete technogies still in use in SMEs. The Government must be a central point of distribution of these developed technologies to small firms that more firms will benefit from this at a cost effective scale. This will reduce the stagnancy in technological advancement in SME.

SCOPE OF INDUSTRY 4.0 IN SMES IN INDIA

The entrepreneurial growth witness two facts, the increase in entrepreneurs arising from Corporates to beat the existing shoetcomings, increase in limited liability companies formed of alumnies of premier institutions and free-lance professionals and increase in freelance professionals. This fuel the competition of survival by infusing new concepts and technologies. This may turn to be the cutting edge for infusing new technologies to other SMEs. Being informal in beginning, these professional enterprises gather momentum to flourish to be the future corporate. The increase in individual centred microenterprises use high degree of technologies to increase the scale of business , especially ICT in promotion , transaction, delivery and post sales services.

The number of employees was considered as one of the measures of firm size. The cyber technologies enabled the return on investment on employees manyfold by converting nonproductive hours to productive hours and reducing the cycle time of each task. Now the quantity of service to be delivered increased many fold. The web based business, cataloguing, promotion through social media, order processing through internet, mobile app based business, mobile interactive business etc. changed the business strategies of small firms. The business concepts of OLA, Uber , Amazon, etc gave a platform for many entrepreneurs to find a share in the vast digital market place though the level of profitability is uncertain due to the deep discounts and system charges

SOCIAL AND POLITICAL EFFECT

The MSMEs are highly vulnerable to the economic shocks arising from the political strategies of Government. The Demonitation had a negative impact on small business as sudden suction of currency from the low income strata of people affected their consumption and then the business of small business (Senthamizhselvi, 2017). The fiscal policies, tax system , credit policies, special packages to promote MSMEs etc of the Government have effect on the continuous efforts of small industries to acquire new technologies.

CONCLUSION

The Industry 4.0 stands for the adoption of technology in firms and Industry. The large firms invest money to develop own competencies to be a market leader and they gains of it as well. The small firms have constrains in capital to invest to develop own competencies. The small firms gain the technology adaption theough the National Industry 4.0 , a macrolevel development gained through the investment of the National Governments to develop public facilities. The industry 4.0 in MSMEs is the result of the effective industry policy of Government of India. Informal sector of the industry absorbs the experts from corporate after their retirement from a corporate either as entrepreneur or consultant or employee. This induce modern technologies to informal sector. Hence a knowledge and experience flow occurs from Corporates to informal sector

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DIGITAL SKILLS AMONG WOMEN ENTREPRENEURS IN BANGALORE CITY TOWARDS INDUSTRY 4.0 – AN EMPIRICAL STUDY

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ABSTRACT
The economic development of a nation depends on technological innovations undertaken in all spheres of trade and commerce. It is evident from the progress of developed and other developing nations. In India, Micro, Small and Medium Enterprises (MSMEs) contribute considerably to Gross Domestic Product (GDP) and their role is observed to be crucial to the economic success of the country. The industrial revolution 4.0 offers a portfolio of technologies to upgrade production system and demand quick alignment of related business activities to supplement the transformation. Large scale companies and some of the medium scale manufacturing companies are equipped with absorption and adoption of industry 4.0 whereas the micro and small enterprises lack in funds and facilities to acquire the current technological trend in their business development. In particular, women run MSMEs are not vested with required knowledge and capabilities to gain exposure to technological updates and Industry revolution 4.0 has not shown much impact on the bottom of the pyramid. Fundamentally, it is important to articulate the dearth of digital skill sets and digital infrastructure available among women entrepreneurs. The present study has been carried out with a purpose to determine the level of digital skillset available among women entrepreneurs in Bangalore city.

1. INTRODUCTION

Recent advancement in information and communication technology (ICT) has potential to empower women in business as it facilitates knowledge dissemination, swift human interactions, remote access to information and resources with reduced the pain of travelling and personal interactions with strangers. Becoming tech savvy in using ICT for business purposes has become inevitable for survival in this cyber age. Women is said to be empowered only when they attain social and economic independence and gender equity. Women entrepreneurship is still in a nascent stage which is evident from the fact that out of 58.5 million businesses in India, only 8.05 million are being managed by women and Mastercard Index of Women Entrepreneurs (MIWE) report indicating that India ranked 52 among 57 countries surveyed with respect to women empowerment in running successful businesses (IANS, 2018). Digital technology helps women entrepreneurs to overcome several cross functional problems and build business ecosystem with an access to latest information related to market, capital and customers, thus can act as a game changer (Rajesh, 2018).

2. LITERATURE SURVEY

a. INTERNATIONAL STUDIES

Information and Communication Technologies (ICT) act as a powerful catalyst for social, economic and political empowerment of women by providing relevant information related to all concerned business functions (Afrah & Fabiha, 2017). The use of internet and social media for business is driven by entrepreneurial experience (Mack, Marie-Pierre, & Redican, 2017). Social networking enables women entrepreneurs to identify and reach target segment at less cost (Kamberidou, 2013).

Netpreneur approach has a potential to build business network in the digital economy developing socio-economic environment (Razak, Nadiah, & Pisal, 2016). Women entrepreneurs in Singapore have expressed that access to right digital tools would help them in improving their business (Ang, 2017). Digital social media provide innovative ways of networking and doing businesses by way of sharing, co-creation and collaboration (Antes & Schuele, 2011). Social media act as an enabler to micro and small-sized women enterprises to upsurge business prospects, competitive and also to enhance their quality of life (Cesaroni, Demartini, & Paoloni, 2017). Mobile applications resulted in tremendous increase in profits due to cheaper communication, easy business networking, immediacy etc. Effective negotiation irrespective of time and place and securing better markets and prices have been found possible. Mobile phones act an important economic tool to poverty alleviation and aid in knowledge empowerment (Komunte,2015).

B. NATIONAL STUDIES

Goswami & Dutta (2016) attempted to determine the factors affecting the acceptance and usage of ICT amongst women entrepreneurs in West Bengal. A structured questionnaire was used to collect data from 144 respondents. The sampled respondents expressed that e-commerce applications enhance productivity and profitability of their business and they are ready to use these applications if they are easy to use. Gurumurthy & Chami (2018) has attempted to analyse Digital India, evaluated implications from a gender perspective and

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gender equality. Malhotra (2015) has examined the status of women in the era of information technology, effect of IT in rural areas and various ways that IT benefit women in employment. Digital literacy is a need for access to education, employment and equitable resources empowering women in right decision making and fight against societal discrimination (Smitha , 2017). Arrawatia & Meel (2012) has studied the prospects generated by ICT for women empowerment, challenges and obstacles faced by women.

3. RESEARCH GAP

In spite of potential benefits arise out of ICT, only few women entrepreneurs conduct business online. They seems to be losing opportunities provided by digitalisation in the globalized context and women run businesses prefer to stay away from exports and international trade (OECD, 2017). Due to disparaging conditions pertaining to education and income, women prefer to have least accessibility to ICT (Hilbert,2011). They feel discouraging to enter e-business due to the disclosure of their personal information (Michota, 2013). Use of ICT in entrepreneurial activities of women is mostly discouraged at both family and societal levels (Badran, 2014). They face many limitations in reaping the benefits from using latest ICTs namely advancing internet technologies, mobile phones and other digital means (Rahman, 2016). Women entrepreneurs believe that ICT skills are the most crucial ones to success and that they are undernourished in the digital landscape (Pappas, et al., 2018). Indian studies pertaining to women entrepreneurs running micro enterprises in digital space is not found and hence the study.

4. RESEARCH QUESTIONS

The following are the research questions to address the research gap.

1. What is the level of awareness of ICT among women entrepreneurs?
2. Have they undergone digital literacy training programmes?
3. What is the level of acceptance and adoption of ICT?

4. OBJECTIVES OF THE STUDY

Based on the above research questions, the following research objectives are framed.

1. To study demographic profile of women entrepreneurs in the districts of Karnataka.
2. To study the awareness level of ICT among women entrepreneurs.
3. To study the level of acceptance and adoption of ICT among women entrepreneurs at work.

5. METHODOLOGY

The proposed research work was descriptive in nature. The population for the study consisted of women entrepreneurs running micro enterprises operating with less than 10 people and started with a small amount of capital and providing goods or services in their local areas. Manufacturing enterprises with investment in plant & machinery amounting upto Rs.25 lakhs and enterprises belonging to service sector with investments in equipment upto Rs.10 lakhs are included for the purpose of the study. A snowball sampling has been used to select 20 women entrepreneurs in Bangalore city. A survey will be conducted using well-structured questionnaires to collect primary data. Statistical techniques namely descriptive statistics, has been used for data analysis. Secondary data will be collected from magazines and journals and books.

6. DATA ANALYSIS

The primary data collected from sample respondents during survey has been delineated using descriptive statistics and analysis tables are presented below.

Table-1: Demographic details the respondents:

Demographic Variable	Classification	No.of respondents	Percentage
Age	Less than 20 yrs	6	30
	21 – 40 yrs	12	60
	41 – 50 yrs	2	10
Occupation	Manufacturing of industrial tools	3	15
	Manufacturer of plastic items	5	25
	Producing jute bags	4	20
	Producing toys	8	40
Education	High School	2	10
	Polytechnic	3	15
	UG Degree	11	55
	PG Degree	4	20

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Table-2: ICT training undergone by the respondents and its impact on their acceptance and adoption of ICT

Particulars	No. of respondents	Percentage
ICT Training if undergone		
(i) Yes	11	55
(ii) No	9	45
Level of acceptance and adoption of ICT at work as a result of training attended		
(i) High	2	10
(ii) Medium	5	25
(iii) Low	13	65

Table 1 and Table 2 shows that 55% of the sample respondents have undergone ICT training. But the level of acceptance and adoption by 65% of them is low. This finding demands further investigation to identify the problems in adoption of ICT among women entrepreneurs at work.

7. CONCLUSION

The growth of women entrepreneurship is vital for economic development of a country. The rapidly digital world offers a strong and sustainable platform for business growth. Most of the problems faced by women entrepreneurs can be alleviated with the help with advancing internet technologies. Usage of internet and social media reduce middlemen costs and they gain awareness of market dynamism. ICT competencies determine the success of industry revolution in any organisation. Though internet technologies offer innumerable benefits for business growth, cybercrimes against women are also increasing. There is no reservation for women in cyberspace. An inclusive digital literacy policy and women safety and security in cyber space is required for enabling industry 4.0 to achieve smooth social and economic progress.

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OPPORTUNITIES AND CHALLENGES WITH INDUSTRY 4.0 - A CONCEPTUAL FRAMEWORK

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ABSTRACT
Industrialization has always given rise to greater volume and variety of manufactured goods. Industrialization has brought an improved standard of living for generations. The first industrial revolution was about mechanization through water and steam power. The second revolution was about the mass production and assembly lines using electricity. The fourth industrial revolution is now coming to the picture after what was introduced with the third industrial revolution which was related to the adoption of computers and automation. The fourth industrial revolution is already here to take forward the previous revolutions and will enhance the capabilities of the industry with smart and autonomous systems powered by data and machine learning.

As the fourth industrial revolution promises huge benefits for industries and new opportunities for a multitude of applications, it has become the major and most discussed subject in current scenario. The industry players should sense big changes as Industry 4.0 comes to the scene and becomes integrated into their workflows. The study will analyse the various opportunities and challenges that comes with the introduction of Industry 4.0. The present paper gives insights about the changes that are going to take place in manufacturing companies impacted by Industry 4.0 in the coming future.

Keywords: Industrialization, Industry 4.0, Artificial Intelligence, Cyber Physical Systems, IoT (Internet of Things), Big Data

1. INTRODUCTION
"The new technology age, if shaped in a responsive and responsible way, could catalyse a new cultural renaissance that will enable us to feel part of something much larger than ourselves – a true globalization. The Fourth Industrial Revolution has the potential to robotize humanity, and thus compromise our traditional sources of meaning – work, community, faith, identity. Or we can use the Fourth Industrial Revolution to lift humanity into a new collective and moral consciousness based on a shared sense of destiny. It is incumbent on us all to make sure that the latter is what happens. - (Schwab, Shaping the Fourth Industrial Revolution, 2018)"

Klaus Schwab, Founder and Executive Chairman at *World Economic Forum*, mentioned the various incremental advances on today's digital technologies. He discussed on how the fourth industrial revolution technologies opens entirely new ways of creating value for organizations and citizens.

The term "revolution" refers to sudden, marked and essential changes. There have been many revolutions that have taken place throughout the history. A revolution takes place when new technologies and new ways of seeing the world prompts a great change in economic practices and social structures. These changes had brought about shifts in power, wealth, and knowledge.

The agrarian revolution, which was basically the shift from foraging to farming, which took place around 10,000 years ago, was the first great transition in our way of living. The agrarian revolution led to better and improved communication, transportation and food production. This eventually led to urbanization and rise of the cities.

In the 2nd half of the 18th century, number of industrial revolutions took place, after the agrarian revolution, that enhanced the production process. These revolutions led to shift from muscle power to mechanical power and therefore the era of industrialization started. The transition of industrial revolution started in Europe and the United States with the manufacturing process during the period of 1760 to 1840. The first industrial revolution began in Britain at the end of eighteenth century, and from here it spread to the other parts of the world. During this period, the first steam engines were introduced, and the intelligent use of hydropower revolutionised the production processes.

The 2nd industrial revolution witnessed some rapid industrial development in Germany, Britain and the US. The late 19th century witnessed the rise of electrical engineering and mass production, fostered by the advent of electricity and the assembly lines. The third industrial revolution, usually called the computer or digital revolution, began in the 1960's. In the second half of 20th century, industry got automation in the production process with the rise of electronics, telecommunication and computers and advent of a new form of energy: nuclear energy.

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The 4th industrial revolution or Industry 4.0 has now begun which is all about connectivity. Industry 4.0 is unfolding before our eyes, as an opportunity to radically change the way industry responds to needs of the society. The current industrial revolution is driven by the advancements of smart, ubiquitous and interconnected environment. Industry 4.0 is a vision of tomorrow's manufacturing process in which the products will independently find their way throughout the process. The industry of future aims to create a real time connective interaction of all production methods. Industry 4.0 uses technologies such as Cloud, Big Data Analysis and the Internet of Things across different procedures and connected objects in a production line to make them communicate in the real time.

2. LITERATURE REVIEW

2.1 **Klaus Schwab (2018)** in his book *Shaping the Fourth Industrial Revolution*, describes how Industry 4.0 is changing everything. He explored that the individuals, businesses as well as Government can create an inclusive and sustainable future, by connecting to the most important technologies that are creating ripples in the economy.

2.2 **Philip Harris (2018),** in his article discusses about the origin of the revolution and explains the right time to exercise leadership today that drives truly historic, unprecedented change for tomorrow in his article

2.3 **Klaus Schwab (2016)** predicts that the most important technologies drives the fourth industrial revolution and discussed how this revolution will impact all disciplines, economies and industries in his book *The Fourth Industrial Revolution.*

2.4 **PWC – Germany (2014)** shows how industrial companies can shape the digital transformation and unlock new opportunities for growth in their article *Industrie 4.0 – Opportunities and Challenges of the Industrial Internet.*

3. RESEARCH OBJECTIVES

Following are the objectives of the study:

3.1 To assess the impact of Industry 4.0 on the manufacturing process

3.2 To explore the various opportunities and challenges associated with Industry 4.0

4. RESEARCH METHODOLOGY

The present study uses descriptive research design to analyse the opportunities and challenges that comes up with the Industry 4.0 and the various changes that it is going to bring to the manufacturing processes for achieving the mass production. Secondary data collection technique is used for the study. The data has been collected through the articles published over the various online websites, blogs, podcasts, paperbacks by various research organizations and online sources.

5. IMPACT OF INDUSTRY 4.0 ON THE MANUFACTURING PROCESS

In the last decade, the industry has experienced vast advancements in areas like New Industry 4.0 technologies and in traversing mobile computing to cloud computing. Industry 4.0 holds the key to access the real-time findings and statistics using these technologies that will propel the industry into new level of achievements.

The idea of Industry 4.0 is used in range of different contexts and it also surrounds many technologies with it. These technologies encourage advance manufacturing initiatives to transform manufacturing and production. These technologies involve mainly six pieces, i.e., smart factory, cyber physical systems, big data, 3D-Print technology, internet of things, and interoperability. These six pieces define the 4th industrial revolution at its core and hence is contributing to the changes to manufacturing process (OTTO Motors, 2018).

Let us understand these six technologies with a practical approach as different companies like *Volkswagen, ITC Infotech, LG CNS India,* brings in the technologies of fourth industrial revolution into their manufacturing processes.

5.1 Smart Factory: The term refers to the seamless connection throughout the production process, from planning to actuators (controlling signals) in the field, by using different sensors across the production line and processing the information using the artificial intelligence.

Manufacturing in *Volkswagen* today doesn't look like traditional car production and hundreds of identical vehicles lined up in a row no longer exists. The model of smart factory has made customers available with vast number of options that it has made each car a unique and individual object.

5.2 Cyber Physical Systems: Cyber physical systems are combinations of networking, computation and physical processes. Computers connected to networks monitor and controls the physical processes with

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feedback loops. The physical system then reacts to it and the system uses the software to interpret actions and track results.

At *Volkswagen,* cars are now manufactured to orders. Data makes it the way from the customers order to the Volkswagen Group's system and then to each individual section of production. The system then reacts to the customized orders and then processes the order.

5.3 Big Data: Big data is a collection of data from traditional and digital sources inside and outside a company that represents a source for ongoing discovery and analysis.

LG CNS has several analysis solutions for Big Data which includes manufacturing quality analysis, real-time consumer marketing services, IR-based vision test, VOC analysis and quality enhancement and information security monitoring.

Volkswagen uses big data monitor in their logistics. The big data monitor enables the rapid visual processing of the data from the 1,200 suppliers of the Audi factory in Necas Autumn. The big data monitor helps in identifying the potential bottlenecks and greatest need for action. These kinds of data are now easily accessible always with the support of big data.

5.4 Internet of Things (IoT): IoT is the connection of all devices to the internet and each other. It is basically the web of different devices which allow things to connect, exchange and interact.

As an IoT partner, *ITC Infotech* delivers a comprehensive approach to integration across all five IoT layers – edge, connectivity, service layer, analytics and enterprise system integration. *ITC Infotech* help clients to boost their returns by ensuring that the production increases through their novel hybrid business models. They help their clients to utilize intelligent technologies to fuel modernization, innovation and to transform their workforce.

A car consists of many thousands of individual parts. Every part of cars is baptized, in other words, parts are given a RFID tag that can track it by a radio frequency. This establishes a connection which differentiates that which car body and parts belongs to which customer order. (OTTO Motors, 2018)

5.5 3-D Print Technology: 3-D Printing or additive manufacturing is the process of creating a physical object by printing a layer upon layer from a digital 3-D model.

At *Volkswagen*, 3-D Print technology is used for tool making. Gone are the days when pressing tools were shaped in a laborious manner. Now these tools can be made from steel granulate in a 3-D printer. This technology opens door on completely new possibilities for design with a level of precision unknown until today.

5.6 Interoperability: Interoperability is the connection of cyber-physical systems, humans and smart factories communicating with each other through Internet of Things.

Robots take on especially monotonous and arduous activities. Today robots already play a part in contributing to economic workplaces at the *Volkswagen* factories in Chemnitz. In the future, employees and robots will work increasingly together. This is made possible by new security sensors.

From 3-D prints to Internet of Things, from cyber physical systems to big data, the technologies of 4^{th} industrial revolution is driving the manufacturing industry to the new means of accuracy, efficiency and consistency. The intensity of intelligence what is offered now is only the start for what is to come.

6. OPPORTUNITIES WITH INDUSTRY 4.0

The term Industry 4.0 stands for fourth industrial revolution. Industry 4.0 creates a new set of organisations which controls every aspect of the life cycle of a product. The 4^{th} industrial revolution is aims to increase customized and personalized customer needs. The accessibility of all pertinent information in real time by connecting all instances involved in the value chain is the basis for the concept of Industry 4.0.

Industry 4.0 is a vision of tomorrow's manufacturing as it has introduced many innovative digital business models which has helped in connecting the real world to the virtual world of connectivity. This has led to entirely different production of quality, efficiency and flexibility and thus provides an opportunity for industries to radically change to response of the necessities of the society. Manufacturing enterprises can transform the

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digital revolution and unfold new prospects for growth. Digitization of products and services through internet of things will add strongly to the ensure competitiveness and promise additional revenues from processes.

6.1 Unprecedented speed gain: With many industries changing because of the commencement of fourth industrial revolution, market will be gaining an unprecedented speed. The innovations and new technologies are happening overnight. New technologies can quickly disrupt the long-established markets that seemed completely safe. Companies prepared for this rapid innovation will have a great advantage and hence a bright future ahead of them.

6.2 Improves efficiency: The interconnection of products, processes and machines in Industry 4.0 boosts efficiency, reduces on costs and saves resources. This results in high-tech, futuristic technologies and various purposeful devices at comparatively reasonable rates.

6.3 Expansion to new services or business models: The 4th industrial revolution will lead to expansion of many different new services or business models. The newly generated business models will be digital and often disruptive. Increasing customer benefits through a growing range of value solution and increased networking among the customers, manufacturers and partners of 4.0 era, would be the central point of this trend.

6.4 Intimate knowledge of the customers: The responsiveness and profound data that is offered with Industry 4.0 will help manufacturers in delivering consumers better service and assistance. Self-service views into the different operations and activities might be possible in some of the cases. Data obtained from MES can be the basis for prompt settling of matters between consumers and manufacturers in a detailed way.

6.5 Agility: Industry 4.0 will bring in agility to next level as the new industrial revolution focuses on high mix, one-off and even small lot manufacturing. When products know their own requirements, it will speed up every single process through production processes.

6.6 Innovations: The capacity for high mix and low volumes, which are perfectly suitable for new product design and introduction is possible with Industry 4.0. The extreme visibility of internet of things helps smart products and equipment in enabling greater insight of what works out in both product and process design. Within a short span of period, disruptive advances will also cause industry sectors like the information, public services and communication industry to sustainably transform.

6.7 Better revenues: Industry 4.0 puts manufacturers on a pathway to be an ideal supplier to present consumers as they promise better and improved quality, reduced costs, greater mix, and the ability to serve consumers as well. It opens ways to serve bigger markets. Also, it helps manufactures to offer consumers with custom-made and higher-margin manufactured products. With smart products and operations in picture, manufacturers can offer various services to consumers to accompany the products which will lead the manufactures to fetch better revenues.

6.8 Improved work-life balance: Intelligent assistance systems (such as service and freight automatons), with demographic change coming in picture, will allow people of old age to work for a longer time. At the same time, processes and other different operations can be planned in a more flexible manner. They must be geared to the requirements of the workforce and should provide employees to have a better balance in their work-life.

6.9 Job & Skill Development: In the Industry 4.0, there is a huge potential for local businesses wanting to capitalise on these new disruptive technologies, which can engage many businesses. Industry 4.0 would provide help to businesses like SMEs to consider the new skills, approach and methods required in the new era. There are many job positions which are going to be there in the coming future which are unknown as of now.

7. CHALLENGES WITH INDUSTRY 4.0

Schwab stated "*We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academic and civil society.*"

Industrialization comes up with great advantages and brings an unprecedented growth to the economy. It elevates the life standard of people in many ways. But with advantages, it also brings many challenges to the society. The era of Industry 4.0 has also brought many opportunities and challenges along with it.

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7.1 Cyber security: The underlying principle of Industry 4.0 is that all systems, including those devices utilizing Internet-protocol addresses, are connected to the globally accessible Internet infrastructure. It is worrisome to think of a situation in which a cybercriminal breaks into an Industry 4.0 plant system and gain all the access and control of each device connected with that network.

7.2 Job Displacements: Industry 4.0 will give birth to a job market that may become more and more segregated because of the talent and skills required in the new era. Low-skilled and low-wage jobs will be swapped in the new industrial revolution by computers and artificial intelligence technologies. This increased dichotomization will give rise to social tensions.

7.3 Real-time constraints: Industrial control systems require real-time reaction, which makes the changes to the systems very difficult. For getting the required data needed for plant system operation from the cloud, entails the plant's system to access "big data" in the network in the real-time. To facilitate process automation requirements, real-time communication must be fast enough to avoid any breakdowns.

7.4 Shorter device lifetimes: As product life cycle in this decade is shorter than before, individualized and customized products also become a reality. Such individualization and customization require flexibility at production level in a cost-efficient approach. To provide such flexibility, production environment should be adaptable at the process level.

7.5 Data Integration: In the data-driven world of Industry 4.0, data is generated in various ways. Such data poses various challenges and constraints and hence requires new systems for storing, processing, analysing and managing the data. To use and gain the actual advantages from the various data available, manufacturers needs to have new algorithms, products, models and visualizations systems. Data engineers need to make a study of such data and they should find correlation between data streams after analysing the data. This would help manufacturers to gain new understandings and insights from the data which were not thought earlier.

8. CONCLUSION

The dawn of the 4^{th} industrial revolution differs in various ways like speed, scale, complexity and transformative power when contrasted to previous revolutions. The ability of evolving technologies coming forth from the newest industrial revolution has potential to make better and greater enhancements on every feature of our lives than the first three revolutions summed together.

The concept of Industry 4.0 envelops various opportunities as well as challenges with it. The present study shows some of the motivating (transforming)future scenarios in the manufacturing industries that are going to take place with the introduction of new technologies of Industry 4.0. The main effects of this revolution on the manufacturing industries are the impact it will have on consumer expectations, product quality and innovations. Manufacturing sectors also face various challenges that must be harnessed, directed and overcome.

Industry 4.0 makes ripple effects on institutions, societies and economies. It will change the ways we live, we work, interact and network with others. To enable Industry 4.0 scenarios, concrete problems should be eliminated first. Step-wise or modular approaches should be followed for this. At first, the current challenges need to be addressed to enable production environment to gain advantage from Industry 4.0 This gives them to gain quick benefits and make production ready for future scenarios. True transformation requires a precise sequenced roadmap. Before boarding on the complex journey of Industry 4.0, the organizations should find out the need for change. Industries should focus on driving strategic business results first, rather than individual technologies. We are in the middle of a generational shift in manufacturing. Organizations should redesign their functions to value networks and create a culture that embraces the enterprise value of new digital technologies.

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BUSINESS ANALYTICS IN MANUFACTURING INDUSTRY WITH SPECIAL REFERENCE TO XIAOMI

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ABSTRACT

The paper titled "Business Analytics in Manufacturing Industry with special reference to Xiaomi" emphasizes on how industry 4.0 and digitalisation has led to the emergence of business analytics which has now been advantageous to the manufacturing companies. It has brought a radical transformation in the way of performance of the jobs. This paper also portrays the three historically prominent industrial revolutions and how these revolutions have affected the world in different ways. Acknowledging the incredulous inventions from 1st revolution, steam engine to 3rd revolution 3D printers, world is rapidly reforming with super technological advancements. Industry 4.0 comes with a very promising future where there will be ample amount of new opportunities for the humans having parity with the artificial intelligence. It will take countries to newer heights and bigger social & economic progress that will ameliorate the living standards of the people in the world.

The key element of the fourth revolution is connectivity, whether it is the connection between machine to machine or human to machine, it depends on smart interconnected privacy environment, cloud is one of its main components which also helps in connecting people and enables easy accessibility of data. Industry 4.0 is slowly diminishing the lines separating physical, digital and biological spheres. Initially it was dependent on artificial intelligence and machine learning (drones, block chains) but presently it is escalating to a whole new level ranging from smart factories, where machines are enabled with sensors and actuators to usage of virtual reality systems for learning, training and many more purposes.

Business analytics is a methodical exploration of data with statistical tools to accurately predict the future trends and approaching threats in the market for the manufacturing companies whereas the traditional methods of prediction had errors that proved to be trouble-some. Hence this paper attempts to illustrate the impact of business analytics when applied on manufacturing company issues. The paper has given a clear demonstration of prescriptive analysis on the secondary data of XIAOMI company that increased the success rate of the company.

Keywords: Industrial Revolution, Manufacturing Industries, Business Analytics, Innovation, Advancement, Technology.

INTRODUCTION

"THE INDUSTRIAL REVOLUTION WAS ANOTHER OF THOSE EXTRAORDINARY JUMPS FORWARD IN THE STORY OF CIVILIZATION" - STEPHEN GARDINER.

The economic developments of Britain during the 18th century caused urbanisation and the radical shift of manufacturing industries from household to factories (Wikipedia, n.d.). This phenomenon is termed as industrial revolution. Firstly, the French writers used this term but it was popularised by English economic historian Arnold Toynbee. The unprecedented rise of the industrial revolution was kindled by the agricultural revolution, where the vast increase in food production helped in the sustainability of a huge population, supported expansion and boosted trade. The escalated usage of machines for farming over human and animal power caused redundant farmers who then moved to industrial towns for wage-labour which facilitated a pool of labourers in new industries. Industrialisation was greatly contributed by better metals and richer fuels like coal and iron which led to the invention of watt steam engine, that powered locomotives, ships and factories. The industrial revolution brought mechanisation of factories of textile industries where machines such as power loom, spinning jenny are used for large production and railways, roads and canals helped in removing the hindrance of place. Moreover, the boom of the industrial revolution was also supported by the financial institutions in Britain and thus this remarked the 1st Industrial revolution (Qamar C., 2018).

Advancing with time and technology thus commenced the period of 2nd Industrial revolution from 1870 to 1914, the era of automation. The growth of petroleum, electricity & steel was witnessed during this time period and resulted in the replacement of iron by steel. The phenomenal innovations of this period are evident as we can see the invention of telephone, light bulbs, aeroplanes, automobiles. It was because of the introduction of electricity in the 1900's it was possible to power residential areas, factories & it also contributed in bringing in electric powered transportation which replaced horse carriages (Chappine, 2018). Due to the initiation of

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telegraph, railroads, radio, chemicals and airplanes which were powered by petroleum light weight engines, this era became significant in the pages of history.

The 1st and 2nd Industrial revolution proved to make people of the whole world richer and more urban but the 3rd revolution utterly transformed the manufacturing industries and the way of performing the jobs too. Digitisation played a major role in this revolution that emerged in the second half of the 20th century (1969). The 3rd revolution enlightened the people with Digital communications, transistors, data-processing software, robotics and world wide web. As compared to the 2nd revolution, the 3rd one was a step ahead in the field of automation with two vital inventions like – programmable logic controllers (PLCs) and robots (Sentryo, 2017), which challenged the employment of many laborers, eventually resulting in cessation of numerous manufacturing companies. The traditional ways of performing the job using pen and paper was slowly getting obsolete with the gradual rise in the usage of the computer.

The 3rd revolution brought digitisation and information technology in the forefront which acted as the foundation of the 4th revolution. This revolution had given birth to a super advanced artificial intelligence, with which it is intended to have a clear strategic vision about the future. This era can be identified as the period of connectivity, which results in bridging the gap between the societal needs and the company's needs in the manufacturing a product. On comparison to the last 3 industrial revolutions wherein we have witnessed radical advancements in innovation and the manufacturing processes, industry 4.0 will be driven by a smart interconnected privacy environment. It is based on the logic of cyber physical system, where they develop autocratic independently operating systems (Wikipedia, n.d.). The factories are transformed into smart factories where every machine has sensors and every sensor and actuator is a contributor of internet of things. Communication is the vital element with which the advanced machines can connect, liaise and control each other cooperatively giving desired results. They possess the capability of self-optimizing production as a whole.

1. OBJECTIVE OF THE RESEARCH

1.1. To provide with thorough knowledge about Industry 4.0 which deals with the super advanced technology and artificial intelligence.

1.2. To identify impact of Business Analytics in Manufacturing Industry.

1.3. To understand the use of statistical tools in Business Analytics with special reference to XIAOMI.

2. INDUSTRY 4.0 STIMULATING BUSINESS ANALYTICS

The 4th industrial revolution also referred to as industry 4.0 steers political, social, cultural and economic upheavals that will be unveiled in 21st century. The evolution of technology from 18th century steam engines to 21st century self-driving cars, blockchain and drones are commendable. And the 4th revolution initially was based on artificial intelligence and machine learning but it has now progressed on a wider realm of integration of technologies ranging from physical, digital to biological spheres (Rajya Sabha TV, 2018). Its salient features are the diverse technological breakthroughs that have brought the fields of robotics, artificial intelligence, Nano-technology and bio-technology together. Profusion customisation or personalisation is also facilitated by Industry 4.0 that has presently become a trend. Altogether they have brought a massive digital and technological transformation that intends to open the door of infinite possibilities. (The Economist, 2012)

The constructive effect of this revolution is very much visible, the updated resource management, the new protocols and processes, the monitored communication between the components have made the manufacturing processes of the factories much simpler and easier. Although the drawbacks are inevitable, with the passage of time the life cycle of the products are lessened, security of data has become a major concern due to the loop holes in the company's system and growth of insecurities among the employees and workers to be left behind by the emerging smart technology are the existing threats to this revolution. Reliability on machine to machine communication can become an issue, IT snags can cause costly production failure and adopting staff and the industrial environment completely to this change can become a hefty burden on the shareholders.

Today's Digitalization has reached sky-high and enabled the manufacturing factories to build up a virtual world which is connected to the real world exploring new dimensions. In this virtual world they stimulate the entire physical process and undergo the strategies beforehand. Nowadays even training of the staff does not require a real-life simulation but they make use of the virtual reality systems minimizing machinery and personnel damages. Another key element enabled by the 4th revolution is cloud. It is a virtually existing platform wherein people can upload and store their data over internet without having any physical existence of it. It gives access to the people sitting in any corner of the world irrespective of the fact from where the data has been uploaded. The traditional way of using the computer's hard drive for storage and usage of data was replaced by cloud (Tim Hill, 2018).

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3. IMPACT OF BUSINESS ANALYTICS ON MANUFACTURING INDUSTRIES

In the late 19th century when computers were used to store data of the past performances of the company, it resulted in the utilisation of the data for decision making purposes by analysing it, which eventually caused the emergence of Business Analytics. It refers to the usage of statistical methods (Wikipedia, n.d.) to develop new insights by analysing the business performances. The detailed analysis brings out explanatory and prescriptive modelling through which the management can take fact-based decisions. Business analytics answers questions like what has happened, how it has happened, and how it can be overcome. It also predicts the best outcomes and the upcoming trends. This methodical cleaning, mining and crunching of organisation's data drives business planning smoothly. Manufacturing companies are always seeking a way to improve productivity and to grow in the market along with having pleasing profits and gains and business analytics have made it much easier by providing clearance of obstacles in the visibility over all the procedures from work-in progress level to shop level to top level (Louis Columbus, 2018).

In the current scenario the cut-throat competition is very much noticeable, and often manufacturing industries face difficulties in sustaining in the market, hence business analytics brings solution to this problem by recognizing market trends, early spotting competitor threats in the market, and taking actions for such approaching threats. Business analytics also guide the manufacturing companies to behave in a certain desired way to maintain healthy relationship with the customers and they help in determination of their past costs which affects the buying decisions or helps in negotiation of better prices of raw materials. And the management work becomes much easier when the activities and the work flows of the manufacturing company is illustrated diagrammatically (Goewey, 2015). Most importantly business analytics help in reduction of the cost of the manufacturing companies due to the prediction of the break-down of machines and the similar disasters, so that the company is salvaged from such huge losses.

Focusing on the all industries we all know that finance is the blood line of the companies. Hence, evaluating the financial performance of the company and maintaining stability in the financial performance over the period of time is their prime concern. Accurate financial analysis is required for determining the future financial health of the company which was not completely error free when companies used traditional methods of analysing the data as it lacked advanced AI tools like advanced excel, tableau, R, etc. Thus, industry 4.0 have implemented these advanced tools for more precise, detailed and reliable analysis of the financial data for taking critical and ideal decisions for the company.

4. XIAOMI AND IT'S INTIAL PROBLEMS

In this paper we have taken XIAOMI as a manufacturing company. It is a China based electronic company which has now have created a buzz in the Indian market through its highly advanced electronic gadgets at an affordable price. It was able to give a tough competition to the existing brands in this field. Though it had to face great challenges to enter into the Indian market. The main reason for facing this challenge was due to its low brand awareness in India, for which people were not ready to accept their products. To expand their market, they had to take the help of a third party or an intermediary. They decided to have Amazon and Flipkart as their intermediary for selling their products, as they already had a huge traffic of customers and moreover people already had a trust on Amazon and Flipkart. Xiaomi assumed that this decision would be their key strategy to enter into the market, but it had its own drawbacks. Both the parties agreed to get into a partnership with Xiaomi by charging around 17% commission on each phone which were sold through their websites. This high rate of commission charged on each mobile phone by Amazon and Flipkart had drastically reduce the profit margin of the products though it may have increased the sale of Xiaomi. This led Xiaomi to come up with the idea of their own online website called as "Mi Stores". But this was something which Xiaomi was not expecting, was that due to the lack of awareness and trust of the consumers, not much sales were observed. They had a very few numbers of customers visiting their site and purchasing products. This was a serious problem which Xiaomi had to face at the initial stage of entering into the Indian market.

The organization went through a deep research study to increase the brand awareness in Indian market. They also wanted to create awareness of Online Mi stores as majority of the customers were visiting various other sites like, Amazon, Flipkart etc to purchase their products.

4.1. TABLE SHOWING NUMBER OF CUSTOMERS VISITING ONLINE MI STORES IN A WEEK

Row Labels	Count of Customer
Monday	7776
Tuesday	6048
Wednesday	5184

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Thursday	4320
Friday	9504
Saturday	6048
Sunday	4320
Grand Total	**43200**

Source: Business Toys 2014 details

ANALYSIS & INTERPRETATION

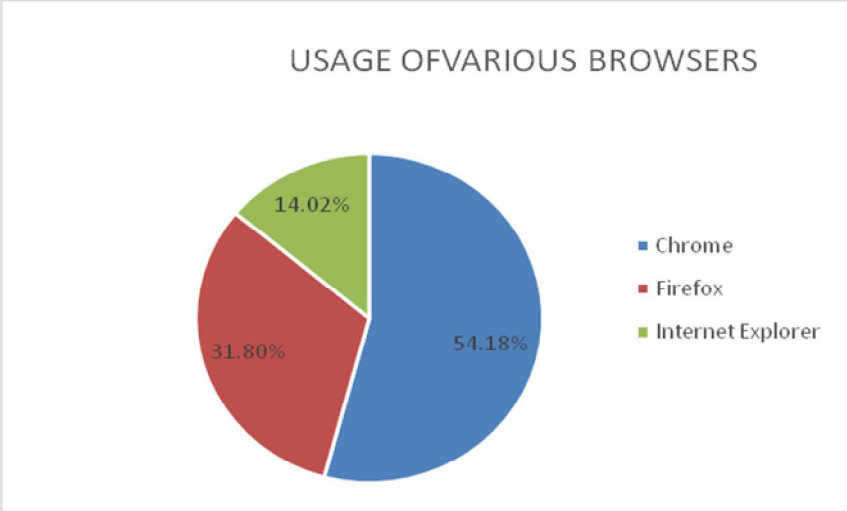
The above Pivot Table helps us to understand the number of customers who have purchased Xiaomi's product in a week. From this we can analyse that highest sales were observed on Friday and the lowest sales on Thursday and Sunday. With this we may infer that, majority of the customer's prefer to visit MI stores before the weekend starts and immediately right after the weekend finishes. These are the days when people are more into handling internet and probably make purchases also. During Sunday's whereas they prefer to spend their time with family and not use systems.

4.2. Table Showing The Number Of Customers Visiting Online Stores Through Various Browsers

Row Labels	Sum of Customer
Chrome	54.18%
Firefox	31.80%
Internet Explorer	14.02%
Grand Total	**100.00%**

Source: Business Toys 2014 details

4.2.1 GRAPH SHOWING THE NUMBER OF CUSTOMERS VISITING ONLINE STORES THROUGH VARIOUS BROWSERS



Source: Business Toys 2014 details

ANALYSIS & INTERPRETATION

The above table and graph help us to understand the percentage of customers who have visited MI Online stores through different browsers. From this we may analyse that 54 percent of customers are visiting through Chrome, 32 percent is using Firefox and 14 percent is using Internet Explorer respectively. With this we may also interpret that majority of the customers use Chrome as it is faster and convenient for the users.

4.3. Table Showing The Average Amount Spent By Customer Through A Browser

Row Labels	Average of Amount Spent (Rs.)
Chrome	6136
Firefox	7676
Internet Explorer	7448
Grand Total	**6813**

Source: Business Toys 2014 details

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ANALYSIS & INTERPRETATION

The above table shows us the average amount spent by the customers while purchasing through a particular browser. It shows that the average amount spent by the customer from Chrome is Rs. 6,136, from Firefox is Rs. 7,676 and from Internet Explorer is 7,448 respectively. We may interpret that, though Chrome was the highest used browser but the average amount spent by consumer is least wiz. Rs. 6,136/-, as the consumers purchasing from this browser are buying only mid to low range of products. Though the high range products are bought through Internet Explorer

4.4. Table Showing The Average Amount Spent During The Week

Row Labels	Average of Amount Spent (Rs.)
Monday	9038
Tuesday	5927
Wednesday	5697
Thursday	5881
Friday	8595
Saturday	5411
Sunday	4363
Grand Total	**6812.82**

Source: Business Toys 2014 details

ANALYSIS & INTERPRETATION

The above pivot table helps us to understand the average amount spent by the customers on each day of a week. This signifies us that on which day people tend to spend more amount of money in buying the products. From this we may analyse that, Monday followed by Friday has the highest amount spent by consumers wiz. Rs. 9,038/- and Rs. 8,595/- respectively; and least is spent on a Sunday i.e., Rs. 4,363/-. We may interpret that, as majority were visiting the MI stores on Friday and Monday, hence on same days they are even making the maximum purchases.

5. MAJOR FINDINGS

The study was done on the 43,200 customers who directly visited Mi Online stores. The following were the major findings from the data obtained by Business Toys.

5.1 Majority of the customers were visiting the Mi Online Stores on Fridays and Mondays. As these are the days when most of the people would go online and react to the advertisements and popups.

5.2 Maximum customers use Chrome as the browsers to visit the online store.

5.3 Most of the consumers use Firefox to spend the average amount by purchasing high to low range of products through it. The least amount spent is through Chrome as people tend to buy mid to low range products using this browser. Whereas, internet explorer has consumers purchasing high range of products.

5.4 Many of the customers were purchasing from Mi Online Stores on Fridays and Mondays as these were the days where maximum number of customers visit the website.

6. ACTION TAKEN BY XIAOMI

With the help of Business Analytics, the company had analysed certain loop holes. They had then identified certain immediate actions to be taken to rectify these errors.

6.1 As the company observed that their maximum sales were only happening during the beginning of the week and starting of the weekend. This did not result into a proper Bell Curve which they were expecting in their sales. Hence, they came up with a strategy of midweek based discounts specially on Wednesdays.

6.2 As per the observation through the data, the maximum customers were using Chrome for searching and purchasing Mi products. These products were ranging between Mid to Low price. Hence, the company decided that the advertisement of the midweek offer should be given on Chrome. This would result in maximizing of sales.

6.3 With the analysis made by the company, it was found that, number of click had a strong correlation with amount spent by customers (90 percent). Thus, they increased the number of clicks before purchasing the product which resulted into increase in revenue earned.

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CONCLUSION

The paper discusses the importance of business analytics for the smooth working of the manufacturing companies. It also focuses on the implication of the fourth industrial revolution where it is also believed that it will revolutionize the world and bring about mass customisation and consumer-oriented products and services. For instance, Industry 4.0 has brought Industrial Internet of things (IIOT) (Sentryo, 2017) that has led to the production of more customised goods such as smart watch and we can also see smart cities building up with fully developed advanced subways, stadiums, roads connecting each and every individual enhancing globalisation.

To conclude, XIAOMI being a manufacturing company has been discussed in this paper, which uses analytical tools to identify the core problems and provide a solution. Therefore, it has also been shown that it plays a critical role in decision making and the working of the manufacturing companies. The main objective of the companies is to survive in the market, gain profits, avoid major losses and establish their brand name, which is duly possible because of business analytics. Though it is based on past data but it delineates appropriate factual interpretation of that data resulting in excellent noticeable outcomes.

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STOCK INDEX PREDICTION USING ARTIFICIAL NEURAL NETWORK: THE CASE OF NIFTY IT INDEX

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ABSTRACT
Stock markets are the trading institutions where stocks, shares (equity) and other financial instruments like bonds are offered for trading. With regard to stocks, the market place operates any kind of willing buyer and willing seller trade. Here the buyers and sellers price tags are matched for fit. There are a lot of analysis which the stockbrokers, responsible for executing trade, do like technical analysis, fundamental analysis and time series analysis so as to do the prediction of the stock prices. The study pertains to predict prices of Nifty IT index. The daily closing prices of Nifty IT Index are collected for a period of 1 year i.e. from 1 Jan 2018 till 31 Dec 2018. Further the data set is divided in the ratio 50:50, the 50% of the data is used to train the network and on the 50% of data the prediction is done. The study used Artificial Neural Network using Backpropagation Algorithm in order to forecast the index prices. Overall, study found the pricing errors and the same is drafted.

Keywords: Prediction, Stock Price, Nifty IT index, ANN and Backpropagation Algorithm

1. INTRODUCTION

A stock market is a place where buyers and sellers of the stocks are gathered. The stocks are exchanged in the network. The stock holder maintains an ownership in that particular company. Stocks may include securities which are listed on a public stock exchange and it also includes the securities which are privately traded. A stock market is also called equity market or share market.

Information Technology (IT) Sector in India has two major components i.e. IT services and business process outsourcing (BPO). IT sector plays a very important role in its contribution to India's GDP. It has increased its contribution to India's GDP to 7.7% as of 2017 data, before it is 1.2% in 1998. NASSCOM states that IT sector aggregate revenue of US$160 billion (2017) with the export revenue of US$99 billion and domestic revenue of US$48 billion, is growing by over 13%. The major IT sector hubs are Bangalore, Hyderabad, Kolkata, Pune, Chennai, Mumbai and NCR. Moreover, India has become the hub of digital capabilities of the world. It has around 75% of the global digital present in the county. Spending on India's IT is expected to grow to 9% and reach US$87.1 billion in 2018.

Due to the IT core competency and strength, a lot of investments from major countries are been attracted. The Foreign Direct Investment (FDI) inflows by the computer software and hardware sector in India for the period between April 2000 to June 2017 is worth US$32.23 billion (acc to data released by DIPP).

Numerous traditional techniques for instance statistical analysis, fundamental analysis along with technical analysis have the ability to be utilized for forecasting reasons in stock markets, but they are challenging to carry out and not one of them have presented the actual anticipated outcomes.

An artificial neural network (ANN) is actually a large-scale, nonlinear compelling technique that is capable of executing extremely nonlinear functions, self-learning, and self-organizing.

ANN is considered as more desirable pertaining to stock market forecasting than any other techniques, given it will be able to identify and find out patterns or even relationships through the data itself. Feedforward network moves in a single direction: coming from input, via hidden layers, towards the output. A feedforward backpropagation network is a network which merely been trained using a backpropagation algorithm.

Stock markets are the trading institutions where stocks, shares (equity) and other financial instruments like bonds are offered for trading. With regard to stocks, the market place operates any kind of willing buyer and willing seller trade. Here the buyers and sellers price tags are matched for fit. There are a lot of analysis which the stockbrokers, responsible for executing trade, do like technical analysis, fundamental analysis and time series analysis so as to do the prediction of the prices of the stock. But it is not necessary that these analyses will give the best results i.e. the best returns. This is so because these methods might give the trends but prediction of price here is really difficult. Thus, it becomes really necessary to find better and improved methods of predicting stock price. The research makes the use of Artificial Neural Network. It is a feed-forward multi-layer network. Research tests on 2018 data of IT index and predicts the future price.

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2. REVIEW OF LITERATURE

An article on Stock Market Prediction using ANN by BirgulEgeli (2017), uses training algorithm for prediction of stock market (the free parameters which the network contains get their optimal value by the process called). The author then compared the results from ANN with Moving Averages approach. On the other hand, Punjo&Dharmadhikari (2016) in their article named Stock market analysis using ANN on Big Data uses data mining and NN concept for the prediction of the stock market with DAX Dataset. Network is analyzed and weights assignment is done to them. Once the output is displayed, comparison with the target output is done. Error is calculated from that.

Amin Hedayati et al. (2016) in their article named Stock market prediction using ANN, and Munasinghe Aroshine&Vlajic, Dajana (2015) in their article named Stock market prediction using ANN makes use of Back Propagation Algorithm for prediction of Stock market. MATLAB is used for the prediction in both the cases. Amin Hedayati et al predicts the NASDAQ index whereas, Munasinghe Aroshine et al takes the data from OMXS30 index. Munasinghe Aroshine et al makes use of Random Walk Hypothesis (RWH) and suggests that stock data do not follow patterns and is therefore not eligible for prediction but studies have shown possibilities of short- time perspective. So he makes use of Back Propagation Algorithm so as to reduce the error between actual and expected. MSE, Normality, ANOVA and Post hoc test is found by the author. Amin Hedayati et al. calculate R^2 and MSE value using MATLAB. To support the above algorithm, Yasen, Kesra and Akeel (2017) stated that the network suitable for time series forecasting is a Feed Forward network with backpropagation which contains 1 hidden layer. Even though increasing number hidden layer increases the complexity but provide a more precise result but there is no necessity to use multiple hidden layer, a single hidden layer is as efficient as multiple hidden layer. So for this particular study I have used a single layer ANN in the simulator.

The Research focuses on predicting stock prices of IT index, there has been a very few researches made on it. Also, very recent data has been taken into account. Prediction is done using Artificial Neural Networks using back propagation algorithm. Data from 1-Jan-18 to 31-Dec-18 has been taken into account. This is the mostly recent data which has been taken into consideration for research. IT sector is said to be the booming sector from the past 5 years, giving employment to a number of people and this is the reason why IT index has been taken for the study.

3. NEED FOR THE STUDY

Due to the dynamic nature of the market, it becomes very difficult for the investors to invest in good stocks. There are a lot of variables which influence the market and so identifying those variables is very important. Therefore some variables has been taken into consideration for the study and the rest of the variables are assumed to be constant. IT sector is the booming sector and the prices can fluctuate. So it becomes really difficult for the investor to know which stocks to invest in. So the research helps the investor to find the suitable stock to invest in so as to maximize the return.

4. OBJECTIVE

- To forecast the daily closing prices of Nifty IT Index using ANN.

5. METHODOLOGY

5.1 Data: Daily closing prices of Nifty IT Index.

5.2 Period of study: The study is done for a period of 1 year. The period starts from 1-Jan-18 and goes till 31-Dec-18.

5.3 Type of data: Opening price, High price, Low price and Closing price of the Index has been taken into account. The network is trained first using Open, high, low and close price for a particular day, after which the prediction of closing price using open, high and low price is made. Closing price is the dependent variable which depends on the Independent variables, i.e. open price, high price and low price.

5.4 Source of data: IT index prices were taken from NSE website for a period of 1 year.

5.5 Tools for analysis of data: Artificial Neural Network (Back Propagation Algorithm).

Back Propagation Algorithm- This method uses preassigned weights in the simulation. Root Mean Squared Error and Mean Absolute Error are calculated to do a comparison with each other and to check whether the result is accurate. An ANN can have multiple numbers of input, multiple number of hidden layers and multiple outputs. With increasing number of hidden layer complexity increases. Number of hidden layers can also increase the accuracy and precision of the output.

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Root Mean Square Error (RMSE) or Root Mean Square Deviation (RMSD) measures the difference of values. These values are the one which are predicted by the model and the actual values. Whatever deviation is measured by RMSE is called residuals. Inorder to aggregate the magnitude of the errors, RMSD is used to serve the purpose of prediction. It measures the accuracy of the model.

$$\mathrm{RMSD} = \sqrt{\frac{\sum_{t=1}^{T}(\hat{y}_t - y_t)^2}{T}}.$$

Mean Absolute Error (MAE) is referred to as the difference between 2 continuous variables. MAE is used to measure accuracy for continuous variables. When we have a set of predictions, it is used to measure the avg magnitude of errors. It does not take into consideration the direction of the magnitude.

$$\mathrm{MAE} = \frac{1}{n}\sum_{j=1}^{n}|y_j - \hat{y}_j|$$

5.6 Research Framework

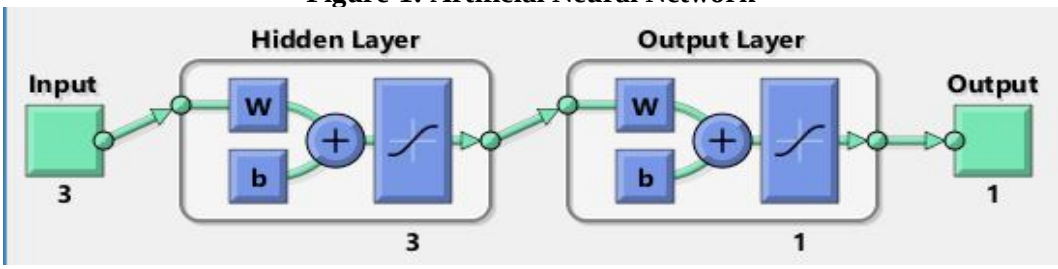
Research study is done to do an analysis of the Artificial Neural Network using Feed Forward Back propagation algorithm. In order to perform the analysis of data set of 123 observations is selected of an IT Index. Data set included open price, high price, low price and closing price of the IT index in the market. For the purpose of this study data is taken through secondary source that is NSE India website for the period of five year. The data set is divided in the ratio 50:50, the 50% of the data is used to train the network and on the 50% of data the prediction is done.

Network design of ANN consisted of 1 i/p layer, 1 hidden layer and 1 o/p layer. While doing the network design of ANN 123 observations were taken, 50% of these observations were used for training. Input layer had three variables open price, high price and low price. Stationarity test have been done on the data at and the data is found to be stationary at level 1 difference. Since a backpropagation algorithm is used it adjusted the weights according to the error received in the study. Output layer had only a single target which is the closing price of the stock. The prediction plot and error value is calculated for the comparison. For further accuracy and more reliable results more variables can be introduced in the study and data mining tools can be used to get the more accurate data.

6. EMPIRICAL RESULTS AND DISCUSSIONS

For the study Feed Forward Back Propagation is used for the prediction purpose. ANN used for the study consists of a 1 i/p layer with 3 i/p variables, 1 hidden layer and 1 o/p layer. Input contains 3 variables namely open price, high price and low price. Input is then forwarded to the hidden layer. After which the network is initialised and the process is initiated. Since a backpropagation algorithm is employed, weights in the network are automatically changed depending on the training set. Normalized value are fed into the system, which have a range from -1 to 1. If the predicted output is not in line with targeted value then weight that is assign between input and hidden layer need to change accordingly and repeat till we get the in line predicted value. Figure 1 shows the structure of ANN which has been used.

Figure-1: Artificial Neural Network



6.1 Data Analysis using ANN

The existing commercial network development packages (in this case MATLAB 2016a) possess tools that make it possible for monitoring exactly how effectively the neural network, on such basis as the capability to predict the ideal output, is converging. Using one of the tools presented the training procedure can go on for days or can be completed in few minutes. MATLAB 2016a did the training phase and produced with the targeted outcomes. If needed default variables can be changed depending on the need of the study, but these development packages

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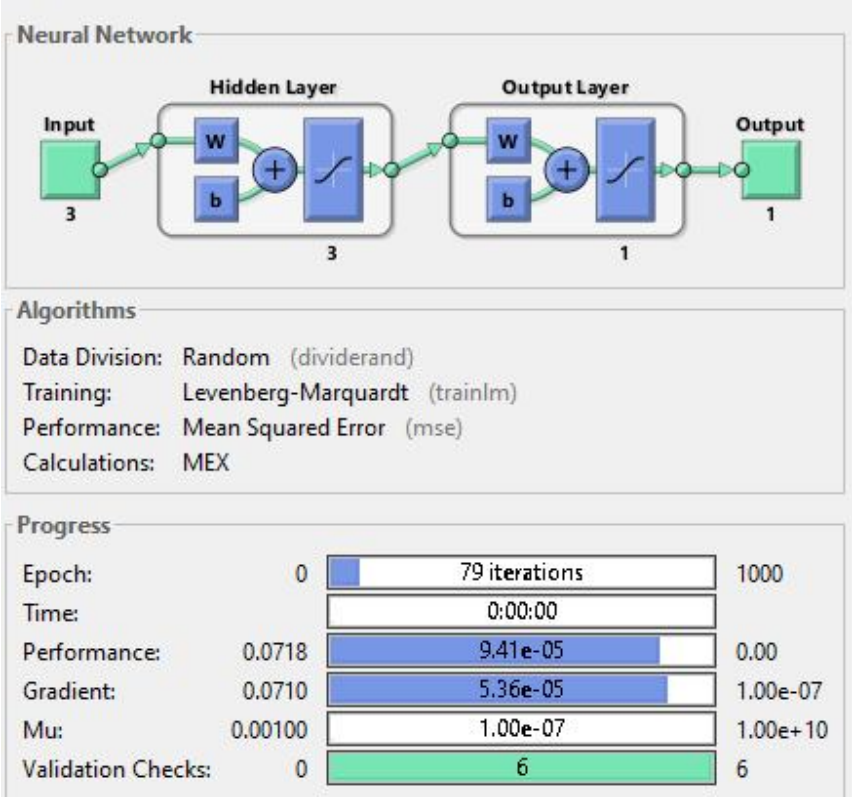
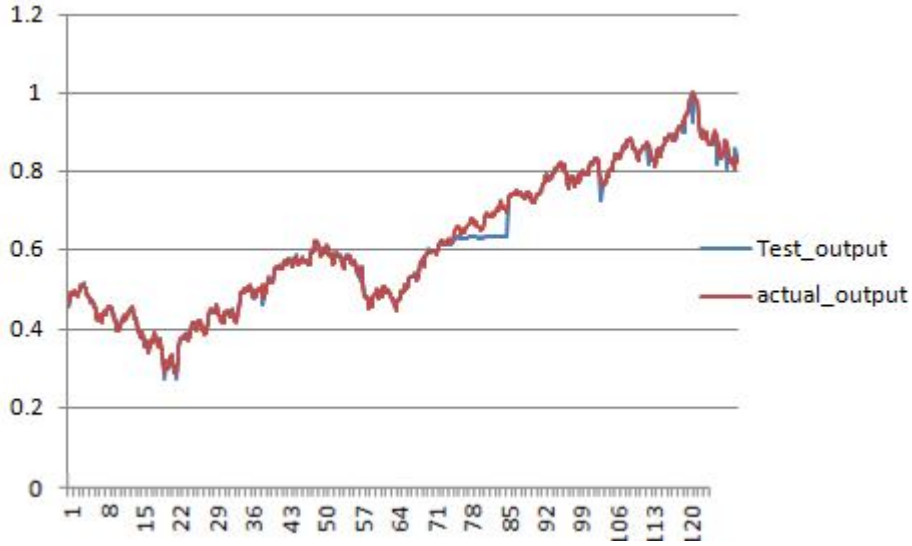
ease the work of hectic coding and also provide with higher accuracy. Figure 2 shows the network design of ANN which has been used in the study for prediction of Nifty IT Index for a period of 1 year.

Figure-2: Network Design



The data set which is taken for the study is from 01 January 2018 to 31 December 2018. The dataset is divided in the ratio 50:50. The 50% of the data is used to train the n/w and then the rest 50% of the data which is used for the prediction purpose.

Graph-1: Graph showing the predicted closing price and actual closing price of data using ANN



The test output represents the closing prices which the model gave. The actual output is the actual closing prices of Nifty IT index for that particular day. The Graph1 for the actual and estimated value of closing price is plotted. The graph shows that the deviation of predicted closing price from the actual is not much. The error for the same has been calculated later.

6.2 Forecasting Evaluation

Stock market is backbone of the financial system all around the world. It fluctuates and moves in a constant manner with the performance of the company as well as some of the external factors that differs from time to time. Nevertheless Stock Market is a place which is always open to new opportunities, technological

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innovations and experimentation. For an investor achieving highest profit or high returns is the sole objective in general terms, to help the investor to achieve his target he uses various statistical and prediction tools to get the best output. The output is measured using performance measures such as Root Mean square error (RMSE) and Mean Absolute Error (MAE). The output shows that with ANN model the predicted values are nearly accurate with targeted value. While performing the test data is found stationary at level 1.

Root Mean Squared Error (RMSE) and Mean Absolute Error (MAE) are calculated for analysis using ANN. The following is the error which is observed.

Table-1: Table showing different error values calculated using ANN model

METHOD	RMSE	MAE
ANN	0.015	0.0061

RMSE value from ANN is 0.015. The lesser the value of RMSE, better is the model. So, it shows that the model has a less value for RMSE and thus it is a better model for prediction. Similarly, the value of MAE is 0.0061 which says that the error value using ANN is very less and the accuracy of the model is high in predicting index prices.

CONCLUSION

Artificial Intelligence emerged as inevitable tool for corporates to take optimum decisions in all there business processes. Globally, there are significant amount of research has been done in stock prices prediction. The study pertains to predict prices of Nifty IT index. The daily closing prices of Nifty IT Index are collected for a period of 1 year i.e. from 1 Jan 2018 till 31 Dec 2018. Further the data set is divided in the ratio 50:50, the 50% of the data is used to train the network and on the 50% of data the prediction is done. The study used Artificial Neural Network using Backpropagation Algorithm in order to forecast the index prices. Overall, study found the pricing errors and the same is drafted. The market participants can apply these forecasted results and can be beneficial for short trading analysis and opportunities.

The study highlights further scope of research

i. This study can be further conducted using other various AI tools like Deep Learning, Data Mining, etc.

ii. Since for a stock price to fluctuate there are other macro-economic factors as well as factors including inflation, GDP of the country etc, can be taken into account and then the study should be conducted.

iii. Further the results achieved can also be compared with the various forecasting statistical model and there reliability can be measured.

iv. Limitations also include number of hidden layer, number of iterations and increasing complexity. All these challenges which were faced due to time constraint can be tackled in further research

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FORECASTING INDIAN BASKET CRUDE OIL PRICES: ARIMA AND SEASONAL DECOMPOSITION APPROACH

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ABSTRACT
The research has been undertaken to forecast the crude oil prices, the study considered Indian basket crude oil prices. The data has been collected for the period of 10 years from 1st January 2009 – 31st December 2018. The data of the study has been divided into training data (1st January 2009-31st December 2015) and forecasted data (1st January 2016-31st December 2018). The study used Autoregressive Integrated Moving Average(ARIMA) and Seasonal Decomposition method for forecasting the crude oil prices. Overall the study found that ARIMA model has given better forecasting results compared to seasonal decomposition method in terms of forecasting error. The forecasted prices also act as a benchmark for the investors, based on the forecast further decisions can be made on the trend of Indian basket crude oil and investment decisions can be made accordingly.

Keywords: Crude oil prices, Indian Basket, forecasting, ARIMA, Seasonal Decomposition.

I. INTRODUCTION

The crude oil prices are highly volatile in nature as they keep fluctuating. Based on the past five-year data of crude oil prices, 2014 January had the highest price which touched up to 115 USD, whereas the year 2016 faced the most down fall in the prices as it went down to as low as 30 USD in the month of November. The current price of the crude oil is 60.15 USD, there is an increase in the trend after a small down fall.

In the year 2018 on march 31st the crude oil reserve was estimated to be 594.49 million tons and natural gas reserves was estimated to be 1339.57 billion cubic meters (BCM) India was said to be the third largest importer of crude oil in the year 2017, where it imported 82%of its oil needs.

India also aims to bring down the import of crude oil to 67% by the year 2022, by taking measures like, replacing the crude oil with local exploration, renewable energy and indigenous ethanol fuel.

In the oil value gauge, given in the expectation technique for decision is vital. Nonetheless, because of changes in the global crude oil cost, it is influenced by numerous variables. For example, advertise free market activity conditions, advancement of the circumstance on the planet economy, even psychological oppression, geopolitical hazard, theory, climate changes and other dubious factors additionally influence changes in global oil costs.

One of the most important factor of the global economic growth is the price of crude oil, when it comes to India, there is a wide gap between the demand and production of the crude oil. The demand for the crude oil is very high in India due to which India stands 3rd in importing of crude oil. Due to this there are other factors that get affected, like the change in interest rate and inflation rate of the country as well as slows down the GDP growth, the crude oil price also has a significant impact on macroeconomic indicators, such as unemployment and investment, over the period of time.

II. LITERATURE REVIEW

Due to the expanded interests in the costs of unrefined petroleum and the different components included and influence the raw petroleum costs, inquire about regarding the matter has picked up ubiquity. This area gives a writing survey of papers that emphasis on forecasting the costs of unrefined petroleum.

forecasting of raw petroleum costs utilizing different factors that influence the cost of unrefined petroleum, that are known as indicator factors which are inspected by (Xuluo Yin, 2018) in this paper the creator utilized five single-variable time-fluctuating parameter models to anticipate raw petroleum costs independently. The last consequence of this paper demonstrate that the technique utilized by the creator is strong and performs all around contrasted with arbitrary walk, though (Ana Marìa Herrera, 2015) in her paper contrasted the different strategies with gauge the raw petroleum costs utilizing the information from November 1986 to walk 1997.along with this paper, another creator (Thomas Lux, 2015), additionally contrasted different models with estimate the unrefined petroleum costs and the outcomes show that none of the instability models utilized, can consistently beat different models over every one of the six di erent misfortune works long memory GARCH-type models turning out second best.

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The cost swings in the universal market are expanding at a higher rate as indicated by (EmmanuelKwasiMensah, 2015) the creator utilized the month to month information of Brent raw petroleum costs for most recent two decades which he partitioned into two. initial seventeen years were utilized for the model development and the most recent three years approving forecasting precision, different ARIMA show were utilized to for examination and ARIMA (1,1,1) was discovered the best among the others. In like manner (Musaddiq, 2012) contrasted different ARCH models with discover the best model to conjecture the raw petroleum costs, information from 1998-2009 was utilized to gauge and the outcomes uncover that the GJR-GARCH (1,2) show is most appropriate to figure the costs.

A paper by (Bulletin, 2015) compares various time series models to forecast the oil prices, after the analysis it was found by the author that seasonal decomposition model is the best model compared to other models like VAR, as the error is lower.

In the study done by (Chul-Yong Lee, 2017) It is being expressed that various nations monetary stability and sustainability has been affected by the long term crude oil prices, mostly those relying upon oil imports. This examination consequently proposes an elective model at precisely estimating oil costs while reflecting auxiliary changes in the oil showcase by utilizing a Bayesian methodology. Different models such as linear ordinary least square and neural network approach was used to test forecasting performance of the model. To test the model's forecasting performance, it is contrasted and different models, including a linear ordinary least squares display and a neural network demonstrate. The proposed model proves neural network approach wrong.

III. OBJECTIVES OF THE STUDY

In reference with Indian basket crude oil prices, the main objective of this study is to forecast the crude oil prices.

This helps in understanding the forecasted value of the Indian basket crude oil prices making it easy to analyse the actual with the forecasted value and find out the error, and also to forecast the future crude oil prices, for this purpose, the study includes the sub-objectives that are as follows:

1. To forecast crude oil prices using ARIMA and seasonal Decomposition models
2. To select the best forecasting model based on the forecasting performance in terms of lowest risk error.

HYPOTHESIS;

$H_{0:}$ The monthly crude oil prices are non-stationary.

H_1: The monthly crude oil prices are stationary.

IV. METHODOLOGY

A. Data:

The study requires time series data that includes the crude oil prices of the Indian Basket Crude Oil Prices. Monthly prices of crude oil are taken

B. Source of data:

The data that is selected is the Indian Basket Crude Oil Prices, the source from which the data was collected is the petroleum planning and analysis cell of the Ministry of Petroleum and Natural Gas website.

C. Period of study:

The period of the study is for 10 years starting from 1st January 2008 to 31st December 2018.

The Training period used for forecasting the data is from 1st January 2009 to 31st December 2015 and the forecasted period is from 1st January 2016 to 31st December 2019.

D. Statistical tools for analysis of data:

The test has been carried out using a tool known as Analance from Ducen IT for statistical analysis and interpretation of the data.

The models used for the analysis is ARIMA forecasting and Seasonal Decomposition.

a. ARIMA

An autoregressive integrated moving average model is a type of regression analysis that checks the quality of one ward variable with respect to other evolving factors. The goal of the model is to foresee future securities or money related market moves by analysing the contrasts between the values in the arrangement rather than the actual values.

ARIMA is equated as follows;

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$$\left(1-\sum_{i=1}^{p'}\alpha_i L^i\right)X_t=\left(1+\sum_{i=1}^{q}\theta_i L^i\right)\varepsilon_t$$

Where;

L = lag operator, $\alpha_{i=}$ parameters of the autoregressive part of the model, $\theta_{i=}$ parameters of the moving average part of the model, $\varepsilon_{t=}$ Error term

b. **Seasonal Decomposition Method**

Seasonal decomposition is primarily useful for looking at time arrangement data, and examining obvious changes after some time, it can similarly be used in anticipating or forecasting.

To check the decayed time series, the seasonal part, and the seasonally adjusted section was seen autonomously. It is typically expected that the seasonal part is perpetual, or changing bit by bit, so a seasonal gullible procedure is used for the seasonal fragment The fundamental decomposition technique comprises of evaluating the five segments of the model

Calculation of Seasonal decomposition method

Addictive Model

$$y_t = T_t + C_t + S_t + I_t,$$

Multiplicative Model

$$y_t = T_t \times C_t \times S_t \times I_t.$$

Where;

T_t is the trend component at time *t*, C_t is the cyclical component at time *t*, S_t is the seasonal component at time *t*, I_t is the irregular component at time *t*.

c. Mean Absolute error is calculated using the following formula;

$$\mathbf{MAE} = \frac{\sum_{i=1}^{n} |y_i - x_i|}{n}$$

Where;

$y_{i=}$ actual value , $x_{i=}$ forecasted value , $n=$ number of observations

d. Mean Absolute Percentage Error is calculated using the following formula**;**

$$\mathbf{M} = \frac{100\%}{n}\sum_{t=1}^{n}\left|\frac{A_t - F_t}{A_t}\right|,$$

Where;

$A_{t=}$ actual value, $F_{t=}$ forecasted value, $n=$ number of observations

e. Root Mean Square Error is calculated using the following formula;

$$\mathrm{RMSE}=\sqrt{\frac{\sum_{i=1}^{n}(P_i - O_i)^2}{n}}$$

Where;

$P_{i=}$ actual value, $O_{i=}$ forecasted value, $n=$ number of observations

E. **Basis of selection:**

The basis of the selection of Indian Basket crude oil is for the forecast is that this is used as an indicator of the price of crude imports in India and Government of India watches the index when examining domestic price issues.

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F. **Analytical tools, data analysis and interpretation:**

1. Table (1): showing the descriptive statistics of the variable

Mean	Median	Maximum	Minimum	Standard Deviation	Skewness	Kurtosis	Jarque-Bera	Probability
79.1366	75.1884	132.471	28.0788	26.7711	0.0259	1.6538	9.9816	0.0068

Table (1) shows the descriptive statistics. The basic features of the data could be explained through descriptive statistics. The samples that are chosen for the study are analysed for its measures and summaries through descriptive statistics. It forms the quantitative analysis of the data. The central tendency of the data is found. The standard deviation indicates the variations in crude oil prices over the period. Skewness indicates how the data differs or distorts from that of normal distribution

2. Table (2): Showing stationarity results

PRICE	t-statistics	PROBABILITY
Level	-2.3479	0.1588
First order difference	-6.9126	0.0000

Table (2), the data to be stationary the probability has to be less than 0.05%. The Indian Basket Crude Oil Price data has probability more than 0.05% at level. But, the probability is less than 0.05% at level 1(i1). The data is stationary at i1. Therefore, we reject the null hypothesis and accept alternate hypothesis.

3. Table (3): showing the comparison of the forecasted value with the actual to find the error.

DATE	FORECASTING VALUES SEASONAL	ACTUAL	ERROR	FORECASTING VALUES ARIMA	ACTUAL	ERROR
2016-01-01	31.5112	28.08	-3.43	33.7793	28.08	-5.70
2016-02-01	34.3768	30.53	-3.85	37.3438	30.53	-6.82
2016-03-01	36.7459	36.42	-0.32	40.0631	36.42	-3.64
2016-04-01	38.6028	39.88	1.28	44.2027	39.88	-4.32
2016-05-01	38.8429	45.01	6.16	48.4844	45.01	-3.48
2016-06-01	39.1778	46.96	7.79	51.7015	46.96	-4.74
2016-07-01	39.3721	43.52	4.15	53.8793	43.52	-10.36
2016-08-01	37.3357	44.38	7.05	55.3020	44.38	-10.92
2016-09-01	34.7899	44.48	9.69	58.6983	44.48	-14.22
2016-10-01	30.9825	49.25	18.27	63.8515	49.25	-14.60
2016-11-01	28.5148	44.46	15.94	68.1050	44.46	-23.65
2016-12-01	25.3739	52.74	27.36	73.5850	52.74	-20.85
2017-01-01	23.2654	54.08	30.81	78.5683	54.08	-24.49
2017-02-01	27.7801	54.86	27.08	77.0014	54.86	-22.14
2017-03-01	31.4686	51.47	20.00	79.4974	51.47	-28.03
2017-04-01	34.3810	52.49	18.11	79.9949	52.49	-27.50
2017-05-01	35.4654	50.57	15.10	79.9295	50.57	-29.36
2017-06-01	36.4758	46.56	10.08	81.3880	46.56	-34.83
2017-07-01	37.2105	47.86	10.65	83.7055	47.86	-35.85
2017-08-01	35.6064	50.63	15.03	87.0399	50.63	-36.41
2017-09-01	33.4065	54.52	21.12	87.9250	54.52	-33.40
2017-10-01	29.8758	56.06	26.18	88.1793	56.06	-32.12
2017-11-01	27.6294	61.32	33.69	89.4823	61.32	-28.17
2017-12-01	24.6656	62.29	37.62	91.2124	62.29	-28.92
2018-01-01	22.6988	67.06	44.36	91.9610	67.06	-24.90
2018-02-01	27.3268	63.54	36.21	91.8470	63.54	-28.31
2018-03-01	31.1059	63.80	32.69	91.2647	63.80	-27.47
2018-04-01	34.0908	69.22	35.13	90.7404	69.22	-21.52
2018-05-01	35.2333	75.25	40.02	90.2682	75.25	-15.02
2018-06-01	36.2902	73.83	37.54	89.8430	73.83	-16.01
2018-07-01	37.0620	73.47	36.41	89.4601	73.47	-15.99

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2018-08-01	35.4876	72.53	37.04	89.1153	72.53	-16.59
2018-09-01	33.3114	54.52	21.21	88.8048	54.52	-34.28
2018-10-01	29.7998	56.06	26.26	88.5251	56.06	-32.47
2018-11-01	27.5686	61.32	33.75	88.2733	61.32	-26.96
2018-12-01	24.6169	62.29	37.67	88.0466	62.29	-25.76

Table (3) compares the actual Indian basket crude oil price with the forecasted price using two methods, ARIMA forecasting and the Seasonal decomposition forecasting. After the comparison the error value for both is found out. Where it was seen that the error in ARIMA method was lower than that of Seasonal Decomposition method, also it is found out that there is no constant increase or decrease in the prices.

4. Table (4): Result showing forecasting evaluation results

	Seasonal Decomposition	ARIMA
Mean Absolute Error	4.7467%	4.5220%
Mean Absolute Percentage Error	6.1544%	5.8136%
Root Mean Square Error	6.1436%	5.6683%

Table (4) show that the Mean Absolute Error is 4.5220% in ARIMA, which is less that seasonal decomposition that has 4.7467%.the Mean Absolute Percentage Error of seasonal decomposition 6.1544% is slightly more than that of ARIMA 5.8136%, whereas, the Root Mean Square Error is also less in ARIMA model. Which proves that when compared to the Seasonal Decomposition method ARIMA method has lesser error in the forecasting of the crude oil prices.

CONCLUSION

The research has been conducted to forecast the crude oil prices, the study considered Indian basket crude oil prices. The data collected for the period of 10 years from 1st January 2009 – 31st December 2018. The data of the study has been divided into training data (1st January 2009-31st December 2015) and forecasted data (1st January 2016-31st December 2018). The study used Autoregressive Integrated Moving Average(ARIMA) and Seasonal Decomposition method to forecast the crude oil prices. The results of this paper have has sown that, between the two models used, ARIMA has resulted to be the best model compared to the seasonal decomposition model as, the Mean Absolute Error, Mean Absolute Percentage Error and Root Mean Square Error is lower in ARIMA forecasting model, which satisfies the objective of the paper and the best model is selected.

The investors in Indian basket crude oil can keep the forecasted value as the bench mark to find out the trend in the crude oil market for further investment and the ARIMA forecasting method would be the best in this case.

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SPS PREFERENCE OF RETAILERS IN IMPULSING CONSUMER BUYING BEHAVIOR

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ABSTRACT
Sales promotion efforts of marketers focusing on the incremental sales volume, acquiring market share, branding, consumer acquisition and retention. FMCG players are providing different schemes to consumers, retailers and sales force to capitalize the industry growth opportunities. Apart from consumer promotion and advertisements, promoting retailers with sales promotion schemes are having more impact on branding and sales achievement. A research report in a business weekly has revealed that about half of the people in India are below the age group of twenty is about 160 million whose major purchases are impulsive in nature. But the FMCG corporate companies are not having a specific plan about the nature type of promotional schemes which are effective and profitable. This study was carried out among the 500 FMCG retailers aimed at understanding their preference level of various sales promotion schemes which impulse the FMCG consumers towards brand preference and product choice.

Keywords: Retailers adoption, Smart Technology, Consumer behavior

INTRODUCTION
The expected growth in the retail market in India is estimated at 10 percent (CAGR) and to rise up to US$ 1.6 trillion by 2026. And the traditional retail trade rise at 10 percent, the modern trade would register a quick growth rate of 20 percent per year with an estimated rise of 12 percent per annum in total. Organized retail segment contributes to the total market by only 9 percent but 91 percent contributes to the unorganized retail sector. The retail market focusing Consumer through Business(B2C) would contribute by US$ 26 billion and on the other side retail using internet or e-commerce is estimated to rise as like as physical retail outlets within forthcoming five years. Indian e-commerce retail market is estimated to rise from US$ 30 billion in FY2016 to US$ 120 billion within 2020 supported by internet networks and fast acceptance of e-services by Indian consumers.

FMCG INDUSTRY
Fast Moving Consumer Goods(FMCG) are the goods which are demanded more and purchased more frequently by the people. Except for pulses and grains, any usable goods which are purchased at equal intervals in lesser volumes. The products like washing soaps and powders, shaving goods, toothbrushes and pastes, shampoos, packed food items, face creams, hair oil, tea, coffee etc. The major players in the markets are HUL, Cavin care, Nestle, P & G, Colgate, ITC, Nirma, Britannia, Amul, Emami, Marico, and Dabur. A larger amount of monthly family budget occupied by the FMCG products. Among the promotion-strategies (Consumer Promotion, Trade Promotion, and Sales Force Promotion), trade promotion gives a high impact in the retail market to penetrate and rise in a competitive market. Thus, Trade promotion is significant for FMCG companies to market, earn. This made the researcher get interested in this topic to study.

CLASSIFICATION OF FMCG PRODUCTS
- Personal care
- House-hold care
- Packaged food & Beverages
- Health Care (OTC Products)

CLASSIFICATION OF TRADE PROMOTION SCHEMES
- 1. Quantity Based Discount Scheme(QBDS)
- 2.Trade Allowances (Support to increase sales level)
- 3.Trade reward contests (fix target and benefits to top achievers)
- 4.Trade support by Branding (For Brand positioning)

OBJECTIVES OF THE STUDY
1. To study the retailer's preference for sales promotion schemes influencing Consumer behavior characteristics with respect to Trade Promotion Schemes.

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2. To assess the retailer's perception of Sales Promotion Schemes on Consumer Behavior.

SCOPE OF THE STUDY

Firstly, the study focus on assessing the Retailers perception on consumer response for Sales Promotion Schemes (trade promotion in specific) of FMCG Products in Rural and Urban areas in Tamil Nadu.

Secondly, an attempt has been made to study the preference and influence level of various Sales Promotion Schemes by Retailers for FMCG Products with respect to type, location, size, years of existence, and background of retailers.

LIMITATIONS OF THE STUDY

a. The most important limitations of this study are that this survey is purely based on the perceptive answers of retailers

b. This research has made an analysis of the influence of sales promotion schemes on the preference of retailers for FMCG Products with common known schemes only

c. The scope of this research work is limited to Tamil Nadu only. Hence the findings cannot be generalized at the macro level.

d. The study focuses on a small scale, medium scale, and large-scale retailers. The researcher has not given any special weight age to specific industries. Majority of the findings are general in nature

REVIEW OF LITERATURE

Peter Boatwright and Robert McCulloch(1999) stated that Promotional strategies are created to foster the sellers to do product promotion in short term price decrease, using store-display or local media. According to Alvarez et.al (2005), Trade promotion schemes providing best results should be used and manufacturers can withdraw schemes which are not producing any change in consumer behavior. Bawa et.al(2004) in their study discussed the effect of free sample promotion in retailing. In the research work done by Blattberg et.al(1995), marketing results by the trade promotion schemes and positioning of the brands suing the schemes were discussed. Ganesh et.al (2012), revealed the trial purchase and spillover effects on products movement in the market. Gauri(2008) in his research study studied the retail promotion and effect on consumers' effectiveness towards purchase. Moreau, Krishna and Harlam(2001) mentioned about the triadic work of manufacturer and retailer. Ravindran and Venkatesakumar(2015,2017) in their studied found that schemes as a promotional tool in softdrinks and other FMCG products, retailers' promotional preference of schemes with respect to self services and non self services stores. Rampier (2012) found that "Price-reduction" &" buy one get one " free offers are having an impact in increasing short term sales and induce the first trial. Also, small packed goods reduce the risk of bad quality. Thus the quality of goods and comfort within the store boosts satisfaction level of users along with the scheme promotions while direct reduction in pricing may cannibalize future sales. Tsao and Lu(2016) studied the relevance of promotional tools in manufacturer and retailer supply chain. Jonq et. al (2008) analyzed that Promotions increase the demand for the product by the consumers and incentive for brand owners to boost the products. In Dhruv and Michael (2007) studied the key issues and future research areas in various sectors of Retail industry with respect to price, promotion, service, consumer behavior and others .

RESEARCH METHODOLOGY

Research Design: Descriptive

Sampling Design: Convenience

Sample Size: 500

Data Collection: Interview Schedule from retailers

DATA ANALYSIS AND INTERPRETATION

Table-1: Frequency Table

S. No	Variable	Classification of the Variables	Frequency	%
1	**Retailers' Preferred Sales Promotion Scheme**	Quantity Based Discount Scheme	205	41.0
		Trade Allowance Support to Increase Sales Scheme	195	39.0
		Trade Reward Contests Scheme	38	7.6
		Trade Support By Branding Scheme	38	7.6
		Other Schemes	24	4.8
		Total	**500**	**100**
2	**Percentage of**	Less Than 25%	119	23.8

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	scheme passed to consumers	25% to 50%	241	48.2
		51 to 75%	58	11.6
		76 to 100%	82	16.4
		Total	**500**	**100**
4	**The occurrence of Consumer and trade promotion together**	Yes	139	27.8
		No	361	72.2
		Total	**500**	**100**

Table-2: Mean and Standard Deviation for Retailers' Perception on Consumers' buying preference to Sales Promotion Schemes

Perceived Consumers' Response	Mean	Std. Deviation
Worth of promotion schemes to consumers	2.79	1.059
The similarity with other promotion schemes	2.79	1.059
Product and promotion knowledge	2.79	1.059
Scheme impulsiveness	2.79	1.059
Scheme ability to compare with other schemes	2.79	1.059
Mean Score	**2.79**	**1.059**

HYPOTHESIS

H_1: There are significant differences in Consumer behavior and the Perceived Influence of retailers on Consumers impulse buying across various Schemes and Product Categories.

Table-3: Consumer Related Characteristics
Retailers' Opinion on Consumer behavior and the Perceived Influence of retailers on Consumers impulse buying across various Schemes and Product Categories.

Hypothesis	Category	F Value	P Value	Significant/ Not Significant	Results
H_1 (General)	Scheme Category	1.408	0.208	Not Significant	The hypothesis is Partially Accepted
	Product Category	7.119	0.000	*Significant	
	Interaction Category	1.981	0.047	*Significant	
	Product Category	5.880	0.000	*Significant	
	Interaction Category	0.540	0.909	Not Significant	

INFERENCE

The preference of sales promotion schemes by the retailers show no variation on consumer buying behavior but the impact of the scheme with respect to various products shows a significant difference with respect to consumer impulse buying behavior.

Table 4: Multivariate Tests:

Consumer Response and Perceived Influence on Consumers impulse buying behavior

*Effect		*Value	*F	Hypothesis-df	Error-df	*Sig.
Intercept	*Pillai's-Trace	.912	2498.772[b]	2.000	484.000	.000
	*Roy's-Largest Root	10.326	2498.772[b]	2.000	484.000	.000
*Scheme	*Pillai's-Trace	.017	1.408	6.000	970.000	.208
	*Roy's-Largest Root	.013	2.028[c]	3.000	485.000	.109
***Product Category**	*Pillai's-Trace	**.084**	**7.119**	**6.000**	**970.000**	**.000**
	*Roy's-Largest Root	.089	14.378[c]	3.000	485.000	.000
***Scheme * Product Category**	*Pillai's-Trace	.044	1.370	16.000	970.000	.149
	*Roy's-Largest Root	**.033**	**1.981[c]**	**8.000**	**485.000**	**.047**

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INFERENCE

From the multivariate tests of Manova procedure suggested that main effect for the scheme is not statistically significant (*F=1.408, Sig= 0.208*), but the main effect for *Product Categories* is found significant (*F=7.119, Sig= 0.00*), however, the interaction effect is significant (F= 1.98, Sig= 0.47)

FINDINGS FROM RETAILERS' PERCEPTION ON CONSUMERS' BUYING BEHAVIOR WITH RESPECT TO SALES PROMOTION SCHEMES

The retailers though exposed to various types of promotions by different companies for different products, their preference are mostly related to promotions linked to quantity or volume of purchase followed by the trade allowance for enhancing liquidation of products in secondary sales.

From the study it was found that the FMCG retailers expressed their opinion that consumers would not respond to the components like value of promotion, coincidence with another promotion, first use of promotion, Product awareness, confusing nature of the deal, execution of the promotion, premium or deal attractiveness, good correlation of other products and competition level. Thus the retailers' opinion on consumers' response to schemes alone were not considered for planning the trade scheme operations. But the same was found to be having variations with a different category of products.

Thus the retailers and manufacturers have to plan any sales promotion schemes based on the impulsing nature of products and schemes together considering the type of outlets and their capability to sell the products in their market.

CONCLUSION

In FMCG product categories retailers, preference of sales promotion schemes is an important task in budgeting for promotion schemes and allocating to retailers based on the location of outlets and retailer characteristics are challenging task for any manufacturers Among the product categories, Food & Beverages are having huge growth opportunities and have more brand switching nature of consumers with respect to available sales promotion schemes. Since Healthcare category products do not show any significant difference based on the existing trade schemes, another type of promotions should be adopted to influence health care customers So if the type of schemes, location, and type of retailers are studied before designing the sales promotion budget, then the sales promotion schemes will be more effective in influencing the consumers buying behavior . The sales promotion schemes need to be customized according to the product and retail characteristics to impulse consumer behavior.

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ARTIFICIAL INTELLIGENCE: BREATHING NEW LIFE INTO THE HEALTHCARE INDUSTRY AND MARKETING

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ABSTRACT
The implementation of Artificial Intelligence has disrupted the healthcare industry. One can chat with an AI-powered chatbot for medical diagnosis as against waiting for days for a 5 minutes doctor's appointment. At a larger scale, AI is being used extensively in pathology, neurology and cardiology to detect and treat diseases at an early stage. Personalised healthcare, another significant milestone in the healthcare industry, is soon predicted to become a reality with AI's backing. The paper also discusses the role Marketing plays in healthcare. Various applications of AI within the healthcare industry and marketing are discussed. The paper concludes by discussing the future predictions for the healthcare industry and marketing.

Keywords: Artificial Intelligence, Healthcare Industry, Marketing, Healthcare Marketing, E-Healthcare, Segmentation, Targeting, Positioning.

INTRODUCTION
The world is moving past what is known as the 'Information Age'. It is welcoming what some may call as the 'Automation' age, some the 'Experience' age and others the 'Maker' age. Whichever label one may identify it with, the progression of the human race towards an interconnected world is not something one would debate against. The world is becoming more and more of a Global Village day-by-day, rather minute-by-minute, in this accelerated era; which is our new reality.

Over the years, developments in the technology space have skyrocketed. The human race is now witnessing, experiencing and dealing with technologies like Artificial Intelligence, Blockchain, and the Internet of Things to name a few. The purpose of technology has always, more or less, been to support the operations and growth of other industries. If one flips the angle of perspective, one would notice that advancement in technology is excessively sought after with the sole aim of enabling advancement in other sectors. Thus, like all the previous technologies which were created to better the operations of various industries in the past, new developments in the field have been provoking profound effects across various other fields and industries globally.

Healthcare industry is one such industry undergoing immense progress due to its integration with Artificial Intelligence. Statistically, a CAGR of 40% is predicted for the healthcare AI market by 2021 along with a 50% reduction in treatment costs. (Frost & Sullivan, 2018) Understandably, AI is the predominant element behind the substantial growth rate of 40%. So, what exactly is Artificial Intelligence? Is it "a technology mimicking human beings"? "An artificial imitation of human cognitive functions"? "A problem-solving tool"? When one tries to box the definition of AI, one cannot fully understand what AI can do. By calling it a problem-solving tool, one would be missing out on AI's capability of performing predictions. To call AI "A system programmed to perform any required function with minimal human involvement" would be ideal as this definition does not deprive AI of its flexibility in terms of performance and application. Artificial Intelligence has remained the buzz word for years now. Every time it's in the news for something new, the world says, "Woah! AI could do that?". This can be attributed to AI's flexibility in terms of application which spurs creativity and innovation.

Another field that has been integrated with AI in recent times is Marketing. Various divisions like market research, market analytics, sales activities, and promotional activities are now implementing AI technology for efficiency.

With time, AI will continue to gain perpetual relevance in the healthcare industry and marketing by seamlessly integrating itself. It will help companies survive competition while spurring the growth of the industry. The healthcare industry and the field of marketing will witness tremendous shifts in their functionalities and capabilities by virtue of their inevitable integration with Artificial Intelligence.

This research paper intends to further analyse some of the key areas of relevance as stated below.

OBJECTIVES
1. To understand the role of AI in the Healthcare Industry.
2. To analyse AI's influence on Healthcare Marketing.
3. To briefly understand the future of Healthcare Industry and Marketing.

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RESEARCH METHODOLOGY

This research work encapsulates primary and secondary data. Industry insights were gathered through the form of in-depth interviews. Dr. Ranadheer Kumar - Strategy Consultant at Apollo Hospitals, Ms. Kainat Panjwani - Assistant Professor in Pharmacotherapeutics, and Mr. Mohammad Mukram - Marketing Manager at Lifetime Wellness Rx International Ltd. were interviewed. Journals, books, web posts and blogs were sourced as a form of secondary data. Infographics - Fig. 1, Fig. 2, Fig. 3, and Fig. 4 - have been designed by the authors based on secondary data sources.

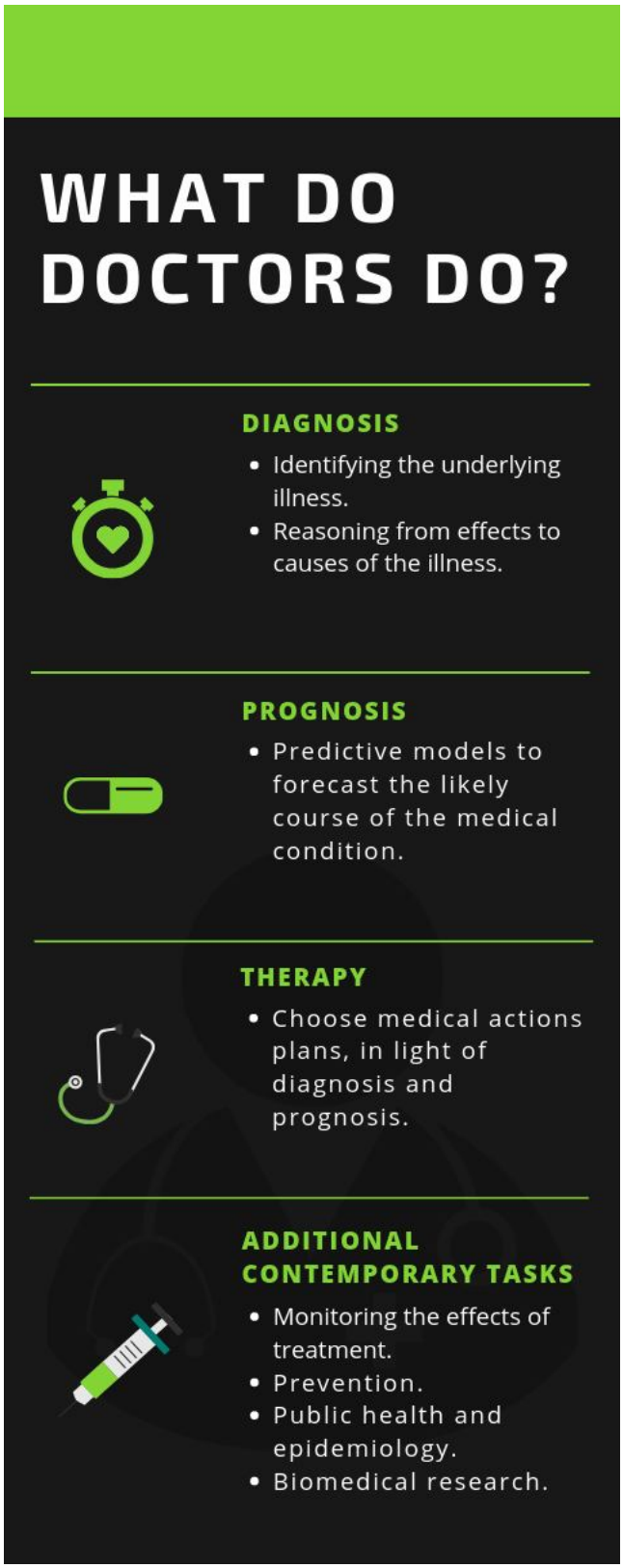
LITERATURE REVIEW

By virtue of increasing availability of data, AI is able to transform the healthcare industry with advanced analytics. Cancer, cardiology, and neurology are the most prominent areas of medicine in which AI is being implemented extensively. (Fei Jiang et al., 2017) Owing to the availability of large datasets and AI's ability to make good use of the same, an immense change in the methods of patient treatment is predicted. (Sumi, 2018) AI is an effective tool for Marketing and its prominence is increasing in the area of market research. (Greg, 2018) Marketing plays an irreplaceable role in the financial survival of healthcare organisations in the present competitive economy. With an increase in patients' involvement and escalating healthcare costs, physicians and healthcare organisations are forced to implement marketing strategies to increase customer retention and loyalty. (Christopher and Richard 2001) Health and Marketing are gaining a firm ground as a new research field. The number of papers on Health and Marketing submitted to marketing journals has been increasing rapidly over the last five years. Mainstream marketing conferences feature special sessions on health marketing. (Stefan, 2008)

AI IN HEALTHCARE INDUSTRY

Owing the exploding popularity growth of AI to its cost and quality advantages, the health AI market is projected to grow more than $10x^2$ by 2021. (Accenture) People commonly associate the healthcare industry with 'hospitals', overlooking nursing homes, hospices, physician practices, managed care organizations, rehabilitation centres, and other healthcare organisations. AI is not exclusively influencing 'hospitals', but the entire healthcare ecosystem by seeping into each one of the mentioned types of players in the industry. In view of the fact of AI's sophisticated performance and ability to strengthen efficiency, there is an increase in the implementation of it within the healthcare ecosystem. (PwC)

All this literature advocating that AI has a positive influence in healthcare, leaves one asking 'how is AI doing this?' To understand 'how' AI is revolutionising the healthcare industry, one should understand 'what' it is revolutionising. Therefore, the obvious question - "What do doctors do?" Fig. 1



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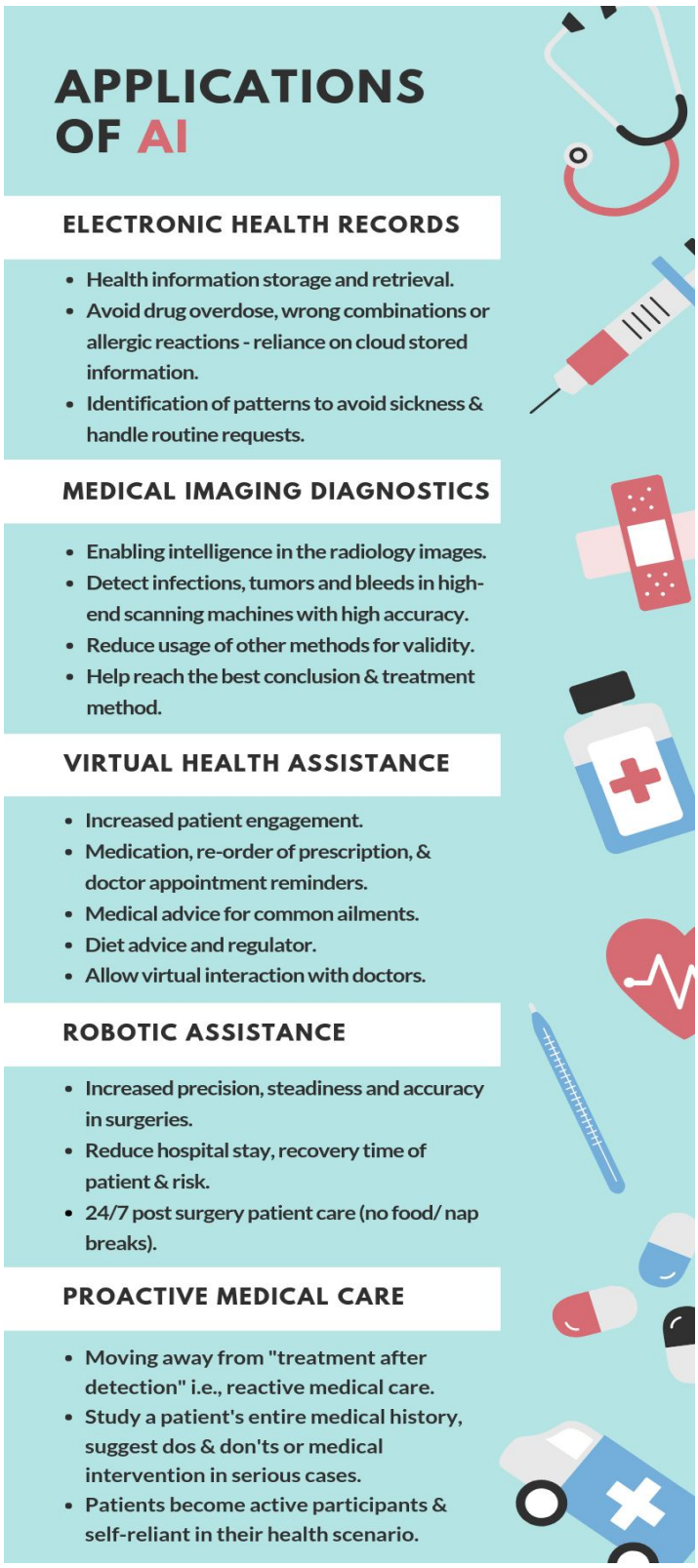
Recent developments in AI-healthcare

Previously, the trial and error method was the norm in the healthcare industry to study the effects of a drug. However, with Reverse Engineering & Forward Simulation (REFS) offered by GNS Healthcare, a patient's response to drug treatments can be forecasted by considering factors which influence the effects. The software refers to the database to find information and patterns in genomics and genetics found in medical claims, lab results, and electronic health records, among others. By understanding disease pathways better, new treatments can be devised. (GNS Healthcare)

The Pharm.ai project, launched by Insilico Medicine, employs generative adversarial networks (GAN), a branch of AI, along with reinforcement learning algorithms to discover a disease's biological origin. This AI method is implemented in areas of oncology, ageing, dermatology and, fibrosis. (Ayn, 2018)

Fig. 2



Rare diseases are those which affect fewer than 1 in 2000. Majority of the 7000+ rare diseases, many of which are from childhood, are not curable.

- AI makes more use of existing data, which is impossible for humans to process effectively, to target therapies for rare diseases with faster speed than ever before. If it takes a year for an average researcher to read 270 articles, AI can scan 50 million in minutes.
- Implementing AI for identifying patients for clinical trials, automating data collection and compilation of the Clinical Study Reports reduces the time for completing each CSR by 4-6 weeks and internal resource utilization costs by around 250 hours. (Dr. Andree 2018)

HEALTHCARE MARKETING AND AI: THE NEW PREDICTION EXPERT

Preconceived notions don't allow the human brain to view data as it exists. Moreover, a human brain functions within a set of limitations which result in decreased efficiency. At this point, Artificial Intelligence and Marketing fit like a puzzle. Primarily, AI does a better job than a human by saving time and secondly, it performs without bias. This means that by utilizing AI, marketers can make use of a more accurate representation of information.

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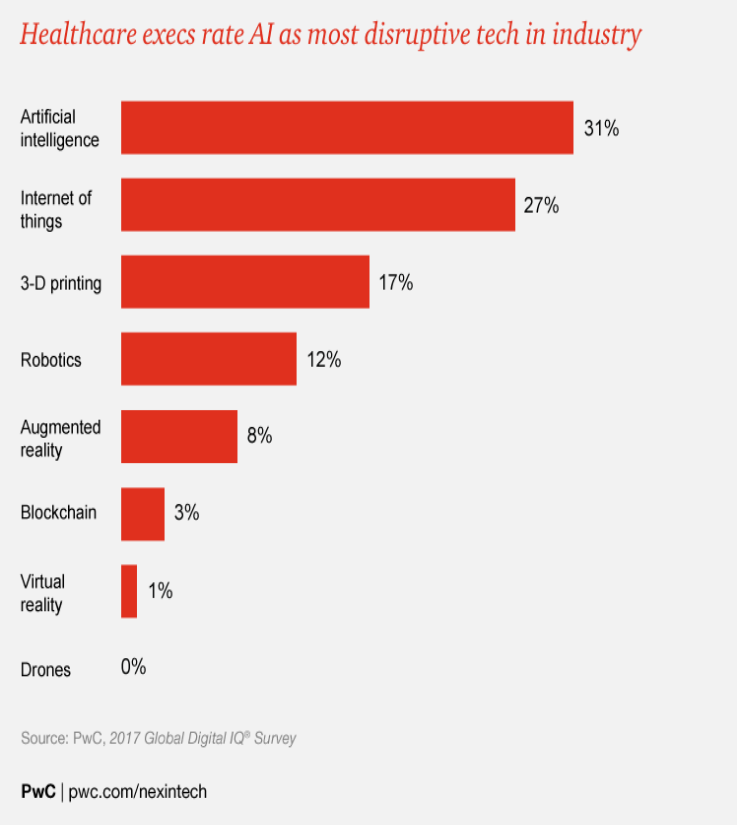
While 51% of marketers have already begun using AI, 27% intend to in the year 2019. AI has the highest expected growth amongst emerging technologies which marketers are adopting. (Adext, 2018) Interestingly, AI is considered the most disruptive technology compared to other technologies even in the healthcare industry. This disruption profoundly affects how marketing functions within the industry as well. (Brian, 2017)

Due to the prevailing conditions in the economy with rising insurance premiums and increasing medical expenses, patients are seeking lesser healthcare services. (Emma) They are highly watchful of their healthcare choices. (Carl, 2012) Furthermore, the proliferation of new organisations makes survival tougher in this tightened market. Therefore, to earn patient satisfaction and loyalty, and to remain competitive, healthcare organisations should implement marketing processes at the core of their operations.



Segmentation, Targeting and Position in Healthcare

Segmentation - In the healthcare industry, organisations need to be consumer driven for survival. Priori and post hoc are two methods of segmentation; while the former is structured before collecting data, the latter gains a structure from the data collected based on similarities in responses. (John, 2003) By integrating AI within post hoc method, the process of discovering patterns within responses to create homogenous groups speeds up. These groups can be based on geographic, demographic, attitudinal, product usage, decision process, or needs differences. Choosing a basis of segmentation, or merging two or more, is at a marketer's discretion. Older age group of patients as a segment offer new market opportunities but need-based segmentation has been picking up importance lately, to discover micro-segments. (Rizal, 2003) Organisations selling generic medicines should be mindful of the disparities in awareness and usage habits of the same in urban and rural areas. (Kuberudu, 2013) This is an example of geographic and product usage segmentation. By implementing AI, it is possible to map the journey of each customer's segment movement. Micro-segments and future migration from one segment to another can be predicted. Micro-segmentation helps organisations provide personalised care to patients. (Philip, 2018)

Targeting - Market research helps organisations understand which segments they want to serve. Application of data mining techniques on existing data about each segment will give them deep insights. By integrating AI with these techniques, automation of routine tasks is possible and marketers can benefit from efficient real-time analysis of customers. AI digs new information by asking intelligent questions as a response to the responses received to previous questions. (Amanda, 2017) The purpose of implementing AI in market research is to ensure efficiency, effectiveness, and enhanced results. (Absolutdata, 2017)

Positioning - Increasing regulations, mergers and acquisitions, and the proliferation of new products and brands are a few reasons why healthcare organisations need to differentiate themselves from other players. Today, the positioning of a healthcare brand determines its success. AI assists marketers to analyze the market's intricacies and potential, discovering loopholes and helping them strategize accordingly. It can also assess competitors' positions in the market and their potential future strategies. By understanding market needs, brand strengths, and competitors' weaknesses and possible actions, marketers can design strategies that drive results. (Mitch Duckler)

There was a time when advertising took organisations to the market, but with AI, potential customers are drawn towards the advertisements based on their actions online. Digital advertising has adopted AI completely; it can analyse users based on factors like their demographics and interests, and identify the most suitable audience for the brand.

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Active patients have begun reading health based journals and blogs to keep themselves updated. A lot of healthcare organisations are creating content online to capitalise on this opportunity and increase brand awareness. An AI-based software can write reports and news based on data and information, saving the organisation time and resources. AI also attracts readers, increasing traffic on websites. Organisations create

online communities for their patients to maintain customer engagement and loyalty.

Fig. 3

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KEY INSIGHTS FROM PRIMARY DATA

Dr. Ranadheer Kumar, Strategy Consultant at Apollo Hospitals

Patient Body Analysis, an AI-powered tool, is a testing procedure which understands a patient's body thoroughly, identifying what medicine and which level of dosage would be ideal making personalised medicine a reality. By implementing AI, the Apollo Life Studio, a medical gym, focuses on improving health holistically at an individual level by making personalised diet and exercise plans. 'Ask Apollo' is an AI-powered application which allows patients to book appointments or have an online doctor consultation. This option works brilliantly for those with busy schedules or those who frequently travel. A 24/7 access to professional help reduces the risks that come with self-medication. Internal market research identifies the most selling products along with those which are receiving positive feedback. Data about each drug and its effect on customers is also identified. AI discovers patterns in this data, converting it into useful information for both Apollo Pharmacy and Apollo Hospitals. The pharmacy is able to manage its inventory more efficiently by understanding the demand for products. Doctors are equipped with real-time knowledge of drugs' effects on patients and are able to prescribe the best medicine to their patients.

Ms. Kainat Panjwani, Assistant Professor in Pharmacotherapeutics

Ideally, doctors and clinical pharmacists should work together on creating a treatment plan for a patient. This ensures a collaboration of expertise with regard to the diagnosis of illnesses and determining the right medication for each of those, which comes from the doctors and the clinical pharmacists, respectively. Owing to the restrictive Indian Laws in the space of clinical pharmacy over the years, the healthcare industry overlooked pharmacists' proficiency in understanding the effects and prescribing the right dosage of drugs. Personalised medication, a predicted possibility with Artificial Intelligence, is forecasted to pave way for discovering new and more efficient drugs. Apart from this, integrating AI with individual therapy can result in effective dosage monitoring, thereby reducing dosing errors. That said, patients will persistently be exposed to the risk of system errors, increasing the chances of misunderstanding an illness, which may result in defective treatment and life-threatening consequences. Patients fear being treated by machines to varying extents by virtue of the lack of an emotional connection. AI may be trained to understand human emotions but it still has a long way to go before it is able to empathize with patients. One of the most influential factors in a patient's recovery is feeling positive and human interaction can impact a patient's mind and feelings, which a machine cannot replace, at least in the near future.

Mr. Muhammad Mukram, Marketing Manager at Lifetime Wellness Rx International Ltd. -

In the business of retail pharmacy, understanding consumer behaviour is crucial. Discounts influence the purchase choices of customers to a large extent. Some customers are rigid with their brand choices when it comes to prescribed medication. But in case of an emergency, customers would prefer proximity of a medical store over discounts and formulation of a tablet over a brand name. AI aids the process of understanding consumer behaviour by identifying patterns like these. Using AI in market research helps marketers gather market insights and understand the demand and supply levels, helping them with designing strategies to influence either of them to maintain balance. AI also influences the process of decision making by providing clarity and a variety of possible scenarios, helping the decision maker take calculated risks.

Marketing plays a more prominent role in preventive healthcare products than in curative products, i.e. prescribed medicines. About 60% of marketing efforts go towards the former, commonly referred to as generalised products.

If data is the new fuel, then customer delight is the new currency. One of the results from marketers' efforts to make profits is 'personalisation'. With customer information recorded on the systems, pharmacists are able to remind customers to refill their medication, offering to deliver medicines at their doorstep. While it helps in customer retention, it also helps in maintaining healthy customer relationships.

AI enabled Health Risk Analysis questionnaire is used to understand customers' mindsets and disposable income. AI detects the factors influencing customers' answers, giving more information than visible to the human eye. The same questionnaire which is filled by a single person can give two different perspectives, one to the healthcare professional and second to the marketer. If a customer responds to 'How many times do you eat outside?' with 'Almost every day', a doctor would take note of it in terms of bad eating habits or lifestyle choices, whereas a marketer would understand that this person could be a hostelite having comparatively less disposable income. This understanding helps a marketer identify the target customers more accurately and channel promotional strategies towards them.

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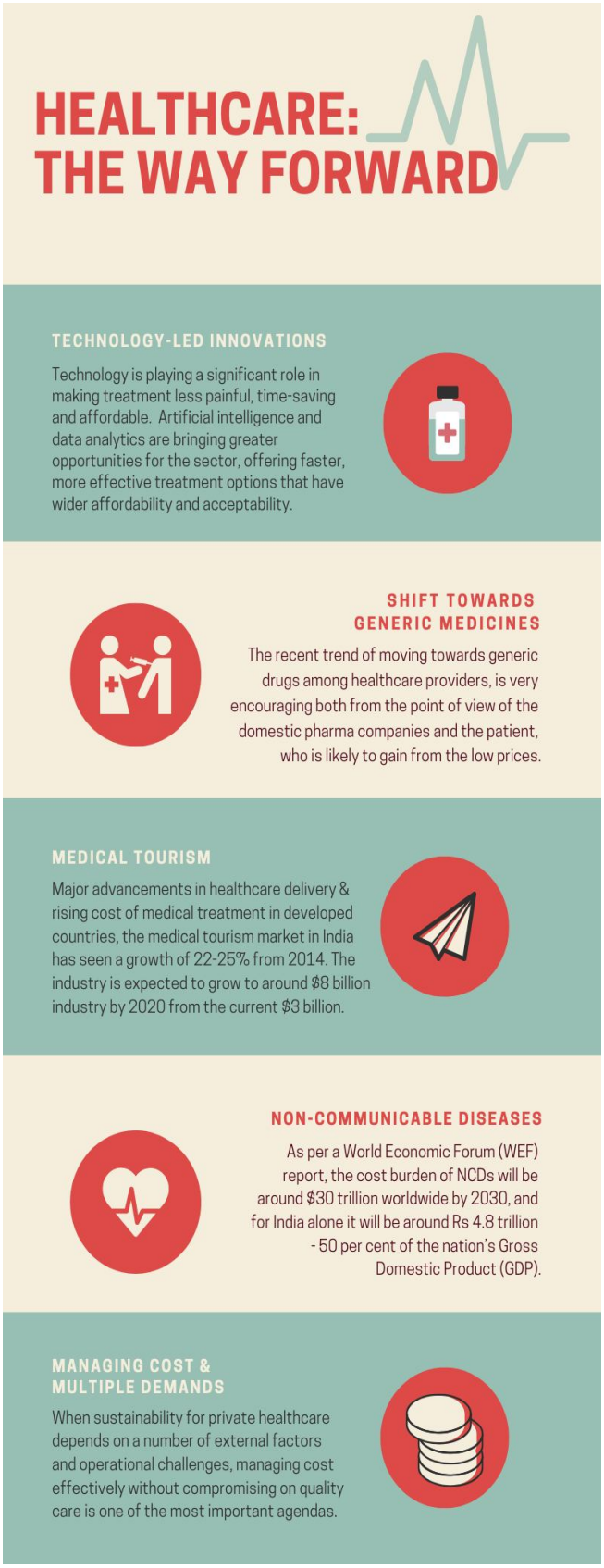

FUTURE WITH AI - PREDICTED

A combination of genomic data and AI for personalised medication can be witnessed in the coming years. Connected intelligence, IoT, smart homes with AI will make personalised care a reality. Widespread adoption of AI is forecasted after 2025, with cognitive applications integrated into nearly all processes. (PwC)

Marketing is now ensuring that every individual is receiving what they want, when they want, and in which channel they want by using AI to uncover individual content preferences, channels and timing of information. This will help personalised medication and automation of distribution of services. Adherence to medication is crucial for a patient's recovery. Though patients are aware of this, many still do not finish their medication course. AI will aid the process of understanding the personal reasons of individual patients for stopping medication and addressing those concerns. With the help of AI, along with

Fig. 4

Big Data, it will be easier for marketers to identify physicians, whose drug requirements are in accordance with the marketers' supply and all their promotional activities, such as customised messaging, will become more effective by reaching the right audience. (Dr. Andree, 2018)

COMMENTS AND SUGGESTIONS

1. Irrespective of the magnitude of changes, the underlying job of healthcare is to save lives and in such a job, precision and accuracy have to be ingrained in every task. There is a possibility for a wrong prediction by an algorithm, wherein AI fails at accuracy. Doctors should, therefore, make sure there are safety features and quality check measures to address such a scenario.
2. Statistically, a large percentage of people are not comfortable with the idea of being medically treated by machines. Neither are all doctors comfortable with consulting a machine before taking an action. While patients feel intimidated and doctors feel threatened, everyone loses focus on the fact that AI's abilities strictly function to the extent of the data provided. For that reason, there is always a possibility of an exceptional case which AI cannot solve and only medical experts can.
3. The rate at which AI is growing and improving people's lives is applaudable, but a very little percentage of people have the skill to use and benefit from these applications. Educational institutions should implement these 'soon-going-to-be-life-skills' within their syllabi. Healthcare organisations, themselves, can collaborate with educational institutions to organise conferences and workshops for all age-groups. More the number of people who know how to apply AI, faster its absorption and higher the profit figures for corporations.

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4. 'Easy data access' - a boon and bane of AI. However safe a system might be, hackers might find a way to get around it. Patients' data is always exposed to the risk of alteration and removal. Organisations should implement strong cybersecurity systems to protect patients' lives. Cybersecurity systems should also be integrated into marketing processes to avoid data breach and manipulation.
5. Healthcare industry is one of the most regulated and these governing laws might go through tremendous changes as a result of AI's implementation in the industry.
6. AI-powered chatbots are programmed to give medical advice about common ailments based on the information provided by patients. Patients are not experts in the field of medicine, so there is a chance of misrepresentation and misinterpretation of information. Educating patients and setting strict standards can solve this issue to an extent.

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A STUDY ON CONSUMER PERCEPTION TOWARDS AI ENABLED CHATBOTS IN BENGALURU

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INTRODUCTION

Chatting has now become the medium of communication for today's smartphone carrying generation. With messengers attracting the users, companies are trying to communicate with their customers via chatting. Chatbots integrated into messengers are carrying targeted customer communication in the form of text messages. Popular messaging platforms are coming up with APIs which allow chatbot development and integration within their messenger apps possible.

Chatbots are extremely changing the way customer service is provided in a variety of industries and opening up untethered potentials for continued growth. Today, though customers expect round the clock support, but they also expect that the support to be customized to their specific needs. Because of this in India too, the largest bank in India by Market capitalization, HDFC Bank Ltd has introduced India's first AI based chatbot called as, "EVA" – Electronic Virtual Assistant. The largest private bank in India, ICICI Bank Ltd has introduced a chatbot called as "ipal". The Indian Railways ticket booking and catering site, IRCTC has introduced a chatbot called as "DIVA".

While chatbots are clearly redesigning the role of customer service, the industry now recognizes that it can't do so without human collaboration. There are many studies that are conducted on the technical aspects of the Chatbots. But, a study focusing in the user perception of chatbots is limited. Hence, this study aims at understanding the customer perception on using a Chatbot in India.

OBJECTIVE

The following are the objectives of the study.

1. To find the factors that influence the customer perception towards chatbots.
2. To assess if there is any significant difference in the perception of the identified variables under study among the different age groups.
3. To study the relationship between accuracy and reliability of Chatbots.

RESEARCH METHOD

An exploratory study is conducted by collecting responses from the users of chatbots through a designed questionnaire. The questionnaire used a Likert scale. The responses are collected from 105 respondents in the city of Bengaluru. The collected data is analysed in SPSS.

KNOWLEDGE GAP

Mario Neururer, Stephan Schlögl , Luisa Brinkschulte and Aleksander Groth in their paper Perceptions on Authenticity in Chat Bots(2018) suggested that the agent authenticity or accuracy is one of the factors that support a better coexistence of artificial intelligence technology with its respective users. Asbjørn Følstad, Cecilie Bertinussen Nordheim and Cato Alexander Bjørkli 2018, discussed about how Chatbots are increasingly offered as an alternative source of customer service notifies that the user trust is very essential. Prof Adré Schreuder, Arné Schreuder and Jeannie van Wyk (né Schreuder) (2017) founded in their research that the awareness is a major factor in using such AI enabled chatbots or applications. Bladh, Oskar (2018) showed that virtual agents affect customer service to a large extent to have a profound impact on customer loyalty. But a study to assess the perception of a user of a chatbot is limited and hence this study attempted to study the perception of customers in Bengaluru city on chatbots.

ARTIFICIAL INTELLIGENCE & CHATBOTS

Techopedia.com defines Artificial intelligence (AI) as an area of computer science that emphasizes the creation of intelligent machines that work and react like humans. Science daily defines artificial intelligence (or AI) as "the study and design of intelligent agents" where an intelligent agent is a system that perceives its environment and takes actions which maximizes its chances of success. Expert systems.com defines a chatbot is an artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, websites, mobile apps or through the telephone. Huang et.al 2007, elaborates that a chatbot works by answering a question posed by the user, or making a comment, or initiating a new topic.

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Chatbots have been deployed on the Internet for the primary purpose of seeking information, site guidance, FAQ answering, and so on, in a strictly limited domain.

DATA ANALYSIS

Data Analysis is done in SPSS and the results are interpreted and discussed in the below:

1. To find the factors that influence the customer perception towards chatbots.

FACTOR ANALYSIS

Factor Analysis is done to identify the factors that determine the perception of the users on chatbots. The objective of factor analysis is dimension reduction to reduce the large set of correlated variables to few uncorrelated factor forming linear combinations of the variables. This helps to avoid redundancy.

KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy : 0.819

Approximate Chi Square : 582.907; Significance : 0.000

Here the KMO value is 0.819>0.6 which indicates the sample is good enough to carry a factor analysis. Bartlett's Test of Sphericity has null hypothesis H0: the 15 variables are uncorrelated. The test statistics value is equal to 582.907 with significance value<0.05. Hence, we reject the null hypothesis. This indicates the variables are suitable for Factor Analysis. The principal component analysis method of extraction is used. The Total Variance Explained table from SPSS shows that there are five factors that explains 63.669% of the variance of the dependent variable.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.488	36.586	36.586	5.488	36.586	36.586
2	1.662	11.083	47.669	1.662	11.083	47.669
3	1.244	8.294	55.962	1.244	8.294	55.962
4	1.156	7.707	63.669	1.156	7.707	63.669
5	.921	6.139	69.809			
6	.793	5.288	75.096			
7	.635	4.236	79.332			
8	.627	4.181	83.513			
9	.600	3.998	87.511			
10	.425	2.832	90.343			
11	.356	2.375	92.718			
12	.344	2.290	95.008			
13	.303	2.018	97.026			
14	.228	1.518	98.544			
15	.218	1.456	100.000			

Extraction Method: Principal Component Analysis.

The Rotated Component Matrix using Varimax Rotation from SPSS output is as below:

Rotated Component Matrix[a]

	Component			
	1	2	3	4
1. Chatbots are easy to access	.814			
2. The questions I ask the chatbot are often understood well by it	.733			
3. Chatbots are fast when processing my inquiries	.695			
4. I often feel the answers given by the chatbots are updated	.647			
5. The ability of the chatbots to process common speech is phenomenal	.540			
6. Chatbots never make mistakes when responding to my query		.728		
7. I fully rely on the information provided by the chatbot		.677		
8. I'm satisfied with the conversation that I have with chatbots always		.637		
9. The chatbots are aware of the context during the conversation		.636		
10.I always feel fulfilled after interacting with a chatbot		.572		

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11.I use chatbots whenever there is a need for any information			.711	
12.I often feel chatbots are operated by real humans			.666	
13.I trust the data is safe when I interact with a chatbot			.652	
14.I'm familiar with chatbots				.618
15.I prefer interacting with a chatbot rather than a human				.835
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 7 iterations.				

The factor analysis resulted in the identification of 4 factors as below:

Factor 1 – Accessibility

- Chatbots are easy to access
- The questions I ask the chatbot are often understood well by it
- Chatbots are fast when processing my inquiries
- I often feel the answers given by the chatbots are updated
- The ability of the chatbots to process common speech is phenomenal

Factor 2 - Accuracy of the answers

- Chatbots never make mistakes when responding to my query
- I fully rely on the information provided by the chatbot
- I'm satisfied with the conversation that I have with chatbots always
- The chatbots are aware of the context during the conversation
- I always feel fulfilled after interacting with a chatbot

Factor 3 – Reliable

- I use chatbots whenever there is a need for any information
- I often feel chatbots are operated by real humans
- I trust the data is safe when I interact with a chatbot

Factor 4 - Awareness

- I'm familiar with chatbots
- I prefer interacting with a chatbot rather than a human

Objective 2: To assess if there is any significant difference in the perception of the identified variables under study among the different age groups.

Ho: There is no significant difference in perception of the factors under study among the different age category.

H1: There is significant difference in perception of the factors under study among the different age category.

To test the above hypothesis One Anova test is performed in SPSS and the results are presented below:

		Sum of Squares	df	Mean Square	F	Sig.
Accessibility	Between Groups	4.636	3	1.545	2.879	.040
	Within Groups	50.986	95	.537		
	Total	55.622	98			
Reliability	Between Groups	10.613	3	3.538	4.467	.006
	Within Groups	75.245	95	.792		
	Total	85.859	98			
Awareness	Between Groups	4.485	3	1.495	1.245	.298
	Within Groups	115.242	96	1.200		
	Total	119.728	99			

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INTERPRETATION

- When Age and Accessibility are taken into consideration, the analysis shows that the p value is 0.04 < 0.05, hence we can say that there is a significant difference among the different age category on the perception of accessibility. Therefore, perception on the ease of accessibility of Chatbots varies across different categories of age groups.
- The p value obtained after running the ANOVA test for Age and Reliability of the answers is 0.006 < 0.05. The test shows that there is a significant difference in the perception on reliability among different age category. Therefore, the respondents' perception on reliability on Chatbots differs across various Age groups.
- An ANOVA test is run to check if there is any significant difference between the age group and the awareness towards chatbots. The p value obtained is 0.298 > 0.05. Hence, we can conclude that there is no significant difference in the awareness towards Chatbots across various Age groups.

Thus it is found that there is a significant difference in the perception of the ease of accessibility and the reliability of the chatbots among the different age categories. Hence, the chatbots are not universally perceived the same in-terms of accessibility and reliability of the chatbots. It is thus important to ensure that the chatbots meet the requirements of the different age groups of people while designing it.

Objective 3: To study the relationship between accuracy and reliability of Chatbots.

Correlation analysis is performed in SPSS to assess the relationship between the accuracy and the reliability factors of the Charbots and the results are presented below:

Significance : 0.000

Pearson Correlation : 0.555

The significance of 0.000<0.05, indicates that the null hypothesis should be rejected. Thus, it is found that there is a significant relationship between the accuracy and the reliability of the chatbots. The Pearson Correlation coefficient of 0.555 indicates that the two variables have a moderate and positive correlation. Hence, it can be concluded that the accuracy the reliability factors have a significant, moderate and a positive relationship.

Thus, it is found that the accuracy of the chatbots in providing the relevant information to the user is key in determining the reliability of chatbots for the user. The Chatbots should hence have a high level of accuracy to enable the user to rely on the responses of the Chatbots for all their queries.

TEST OF RELIABILITY

The scale that is made of 15 variables are analysed in SPSS for the reliability. The test resulted in a Cronbach's Alpha of 0.866 that confirms that the scale is very well reliable.

CONCLUSION

- The factor analysis that was used to analysis the collected data in SPSS resulted in the identification of four factors that determine the perception of customers on Chatbots viz, Accessibility, Accuracy, Reliable and Awareness. The chatbots developers should consider the above four factors while designing the chatbots to influence the perception of the user.
- The One way Aonova test performed on the collected data revealed that the there is a significant difference in the perception of the ease of accessibility and the reliability of the chatbots among the different age categories. It is thus important to ensure that the chatbots meet the requirements of the different age groups of people while designing it.
- The Correlation analysis performed on the collected data revealed that the accuracy the reliability factors have a significant, moderate and a positive relationship. The Chatbots should be developed with a high level of accuracy in their performance to enable the user to rely on the responses of the Chatbots for all their queries.

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HOW BLOCKCHAIN IS DISRUPTING HR

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ABSTRACT
Presently blockchain is typically known as the backbone technology after Bitcoin and is the newest and *furthermost intriguing technologies in the marketplace. It has the potential create processes more efficient, transparent, and secure[8] It provides a decentralized ledger which verifies and stores data while cuts out any middlemen. This technology will build more precise and effective approaches about the whole thing in HR.Thus Block chain is revolutionising the mode we interchange value online similar to the way internet revolutionised information exchanged. The current paper presents implications of blockchain on various HR functions.*

I) INTRODUCTION
Rapid development of the world and process of globalisation creates challenges and extraordinary pressures on enterprises. Human resources are the essential element of organisation's management practice thereby calculated value and significance of human resource is needed for development of enterprise. The advancements in information technology has become the dominant driving force for increasing developments of all segments of society. Thus, modern human resource management needs to combine IT with advanced HRM techniques to optimize management methods to enhance human resource management efficiency for attainment of primary competitive power of organization.[6]

Blockchain technology is widely debated now-a –days but possibly less commonly understood. The concept of block chain was originally stated by Satoshi Nakamoto in a paper titled "Bitcoin: A Peer to Peer Electronic cash system" published in 2008.[10]Technically , it is a distributed ledger organised into blocks which permits exchange of value securely and without getting tampered. Numerous banks and insurance organisations have made developments in field of block chain. In the high technology industry, blockchain has numerous applications like supply chain, digital identification, reward and loyalty programmes and HR background verification[1].

FEATURES OF BLOCK CHAIN
- Builds Trust: There is no need of two parties involved in business to know or trust each other for completing transactions.
- Protected personal data: The top level of financial system is also subjected to get hacked. Blockchain technology devises an enhanced security as there are no chances of shutting or closing of the system. The reason is that blockchain network is protected by a number of system called nodes and these approve the transaction on this network.
- Faster transactions: Banking systems can require a lot of time in settlement as they need to upgrade their systems. Blockchain technology can make settlement of transfer of money at faster rate which ultimately saves time of consumers.
- Quick and transparent decision–making : Access to information is possible at any time which leads to honest and quick decisions
- Decentralised platform: Decentralised platform enhances the power of storing assets in network with further access by internet. Thus effective instrument for decentralising web.

II) LITERATURE REVIEW
As stated by professionals at the HR Executive's 20th Annual HR Conference, blockchain technology will be a part of HR industry in the next 24 months, with companies like IBM and Microsoft making enormous investments in the technology.

Gartner report "Hype Cycle for Emerging Technologies 2016" placed blockchain greatly in relations of expectations. It specified blockchain technology has potential to jump-start a revolution or platform evolution by the next 6-10 years[4].

Gartner research (2016) stated freelancers will increase tremendously and hiring process requires new platforms to enable connecting freelancers with employers[5].

According to HR brief by Sullivan benefits (2018) blockchain technology with its potential and versatility may become a major component of HR industry in nearby future[9].

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As stated by EGI Mar Hreinsson in paper titled "The future of blockchain technology and cryptocurrencies" the impact of blockchain technology is comparable to impact of Internet itself.

As stated in a report by PWC -competition to seize the advantage with blockchain technology has started and if HR functions needs to collaborate with them[2].

As stated by World Economic Forum, 10 percent of world's GDP could be stored on blockchain by 2027[3].In the book "Blockchain Revolution", the author Don and Alex Tapscott claim that blockchain will be the tool to stripe out the middleman from businesses and compensate the makers and doers for creating value[7]. According to Vitalik Buterin forefather of blockchain Ethereum "Instead of laying the taxi driver out of a job, the technology puts Uber out of the job letting the taxi drivers work with customer."

Consultancy firm Bain and Company has anticipated that implementation of blockchain in monetary markets might save $15 billion and in yearly costs $35billion by superseding redundant and error prone processing approaches. In the meantime Gartner projections that by 2022 there will be blockchain business value $10 billion.

III) OBJECTIVES

- To identify challenges at workplace in human resource management.
- To find out how Blockchain technology can revamp HR process.

IV) METHODOLOGY

The present study used descriptive research design to assess use of blockchain technology on human resource management. Study is based on secondary data collection method. The data is collected from research journals, HR blogs and survey reports by various organisations, magazines and online sources.

V) CHALLENGES AT WORKPLACE

(i) Talent souring problems: Developing strong team is significant for any business. Therefore, problems faced by employers are finding good specialists and evaluating them objectively.

(ii) **Labour cost:** Organizations are remunerating around 15-25% of agreed fee to intermediaries which is costing them a lot. On the other hand contractors need to wait couple of months for getting paid. Thus, impacting both parties in business.

(iii) Fake Candidate profile: Employers are facing main hurdle in verifying information on candidates resume. Applicants provide wrong information about their places of work and education which leads to numerous issues during hiring process. Thus, arises the need to build unified system that will authenticate skills and level of experience possessed by employees.

(iv)Paying employees: Processing payroll for international employees is time consuming and lengthy process as there are numerous intermediaries like banks and third parties. Changes in exchange rates regularly are advantage taken by intermediaries.

VI) BLOCKCHAIN AND HRM

(a) Blockchain technology in payroll

Processing of payroll for overseas employees can happen at faster and less expensive manner through blockchain technology. By moving out the middlemen, payments may happen in hours than days. Therefore, from tracking payroll to allotting pay checks is managed efficiently with this technology

Blockchain solutions offer a quicker solution than prevailing models. Linking blockchain through mobile and cloud technology, Bitwage is focused on assisting overseas payments. Eventually employees are paid in their native currency.

(b) Blockchain technology with verified resumes

A report by HireRight, an organisation offering background and employment verification services, states that falsifications on resume by 86% of employers. A survey done by CareerBuilder, online job finding sites reports around 58% of employers trapped lie on resume.

Therefore organisations are looking forward to resolve discrepancies and enhance transparency addressing fraud in employee credentials. Industrialists are working with blockchain technology to offer in the future fraud proof resolution for certification.

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(c) Block chain in sourcing talent
Employers that can recruit on basis of verifiable credentials may source candidates those are unnoticed by other enterprises focusing on outmoded education and resumes. Thus, providing a competitive edge in recruiting from a limited talent group. Blockchain could open accessibility to PG accomplishments and thereby recruiters may be able to find required talent

(d) Blockchain for performance reviews
Blockchain robust approach to pay scales by way of definite salary raises for key skills or proficiencies those are at a premium in the marketplace, or else for assigning performance-based bonus in more quantifiable way. Thus, allowing organizations to understand the ROI for employees with certain skills.

(e) Blockchain to make career websites obsolete
As a replacement for an aspirant writing up a report of where they worked and what are their achievements, blockchain technology will store all their work history. Thus, transforming the entire hiring process. Also, possible that technology can store performance displays indicating employee promotion and reason for leaving organisation. Thus, allowing the employers to make better decision in terms of hiring strong performers.

(f) Blockchain for accurate tax payments
Payment of taxes for contract workers is complicated process. Its tedious process for both employers and employees as calculating from declared to estimate taxes is pain. Blockchain can help in these area as it is a fair accountable system which keeps record of all transactions. Thus, by keeping track of persons earning and resetting tax rates consequently. Thereby no need of saving every paper of expenses or waiting for entire year to file the tax.

(g) Blockchain and Smart contracts
Smart contracts can aid overcome several limitations of the recruitment process. They can restore faith of freelancers by avoiding delayed payments. With Blockchain technology smart contracts are implemented precisely as they are encoded. Employee receives sum once the work is completed or else the business will receive the amount back if the work is not completed.

All the stated applications are based on assumption and theory, and blockchain must overcome numerous obstacles along with major change in work related attitude of people.

CONCLUSION
High Tech organisations are installing blockchain for different enterprise settings. Though first movers stand to advance the maximum from the proficiencies of blockchain.Irrespective of the degree of progress, blockchain will surely have unavoidable influence on the way organisations work and HR experts should monitor it. Block chain technology do possess the supremacy to bring enormous changes in the businesses. Organisations can make the utmost of Blockchain's potential in various areas like hiring employees, managing and developing talent.

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OFFICE AUTOMATION SYSTEM AND TECHNOLOGY IN EDUCATIONAL INSTITUTIONS, KARNTAKA - A STUDY

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ABSTRACT
As the technology is changing the way office related work is done has also changed. With the advent of the computer the office management has become flexible and simple. Modern technology has assisted in setting right the flaws of the traditional method of doing office work. Office automation system is performing office work with the help of computers and internet connection. Office technology today has replaced the manual way of doing work with the help of computers and internet which is easy and simple to do work. Typewriters has been replaced by computer key board and printer, and email, to save the documents we have data storage, and in place of manual security guards we have CCTVs and so on. The work is successfully done with the help of online websites and local area networks. The world over and in India almost all the offices use automation. In the field of education in Karnataka the government first grade colleges too have adopted office automation system for doing day to day work. The main objective of office automation in this area is lack of sufficient qualified staff to look into the day to day affairs. The advantage of office automation system is paperless work and quick work in a short time. In the degree colleges, student admission, correspondence between the department and university, staff and classroom management, are the areas in which office automation technology is adopted. The products required for office automation is supplied by companies and in the light of this we can find development and employment creation in the nation.

Keywords: Automation, Communication, Computer

1. INTRODUCTION

The world over during the 21st century technology has undergone vast changes. Driverless driving of vehicles, Drone camera, finger print technology, chip ATM, transport connectivity, communication, industry, agriculture and in various other fields different technologies have been adopted. In the same way office is adopting technology. The office automation system is based on the personal computer and program. The OAS is useful and successful in performing office work and also in the business correspondence. If all the work has to be done without any manpower, then office automation system has to be adopted. In doing the office work, computers and internet is used, data, images, video is sent, office documentation is maintained, CC cameras are installed, accounting is managed by the office automation system. In traditional offices in case a correspondence has to be sent then either it had to be sent directly with the help of a personnel or through post. But today with the help of office automation system, using computers and internet email, documents, images, notices can be sent. In case two entities had to exchange money either they had to meet personally or they had to send or receive it through the banks. Today one can send or receive money sitting in the office with the help of Net banking or NEFT. In traditional typewriters one had to spend a minimum of 20 minutes to type a letter and if any mistakes were found it had to be done again. Today, with the help of computer and software like MS Word, MS Excel, power point and etc can be used for a single document. The mistakes can be easily rectified and any number of copies can be can be printed. With the use of technology in office, automation system has come into existence. Due to the advantages of automation today we find OAS adopted in offices.

Office automation system has come into existence in almost all the offices of the government first grade colleges in Karnataka. The correspondence between the department and the university is taking place through automation on a day to day basis. The department and the college has to exchange a number of information and the colleges has to update the department on issues asked for. The department sends the information to the colleges through websites and emails. This is helping in the success of the office work. The students to get admission and to pay fees had to stand in long ques. Today students can pay fees upon logging on to the website of the department. The problems faced by the students due to this has reduced. The colleges to make the payments due to the university through RTGS and office automation system. The five most important components in the office automation system are (1) electronic distributing; (2) electronic correspondence; (3) electronic joint effort; (4) picture preparing; and (5) office administration. The important aspect, the heart of the office automation system is the Local Area Network. With the help of LAN information, email, picture, images, voice and so on can be easily exchanged.

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2. REVIEW OF LITERATURE

In 1950, through electromechanical and electronic devices financial and other transactions were done through office automation. The traditional typewriters were replaced by electronic typewriters. During 1970-1980 the electronic typewriters played a prominent role in the office automation system. During 1982 IBMs PC, office automation system was its success and a milestone was accomplished by the firm with better business product. During 1992 with the incorporation of Microsoft came the new operating system. Today office automation system to a company is contributing to its success and simple and easy way of doing work. Office automation system means using of computer and internet in the place of human capital to a large extent. With the help of office automation, we are able to use less of human capital, going for paperless economy along with saving the time and cost in doing work. We can find a large number of studies on office automation system till today and research is done at national and international level. This research focuses on use of office automation by Karnataka government first grade college offices, students, faculty, university and department.

03. OBJECTIVES

The following are the objectives of the study with relation to office automation technology

01. To study about the traditional office and modern office with automation

02. The know the most popular technology used in office automation system

03. To analyze the benefits of office automation system for the students, faculty, university and department and the colleges

04. To study the problems faced by the society due to office automation system.

04. RESEARCH METHODOLOGY

Office automation system and technology in educational institution, Karnataka a study is a research related to the technology adopted in the offices of government first grade colleges. The research is based on secondary data. Karnataka has 418 first grade colleges and it is managed by the department of collegiate education website. Karnataka has many number of universities and most of them use automation system for student admission, examination and announcement of result. The study uses the information provided in the website of the department and the university, paper cuttings and related books.

05. HYPOTHESIS AND HYPOTHESIS TESTING

Office automation and technology and study has the following hypothesis

1. All the offices are adopting office automation system
2. With the adoption of technology, the office work is becoming simple and easy
3. Office automation is successful in the offices
4. Office automation offers many advantages

With relation to the research the hypothesis holds good. The government first grade colleges upon adopting the office automation system in the day to day work is functioning in an easy and simple manner. Faculty, students, department and university is reaping the benefits of office automation. With the advantages the disadvantages too come and it is the problem of e-wastage. The advantages and disadvantages are discussed later in the study

`06. Analysis and Interpretaion:

Many aspects are known from the study office automation system and technology in the offices of Karnataka government first grade colleges. The office work is easy and simple upon the adoption of computer and LAN. Most of the office work is internet based and the prominent among them is listed below.

a. Human Resource Management Systems

Every college is given an ID and password. To use the human resource management system website one should have the internet connection. The details from the date of reporting of an employee till the date of retirement is contained in the HRMS. It provides personal information, details of salary, increment and etc. In traditional method of doing work manual work was given importance and it was costly and time consuming affair. The head of the office had to draw money from the bank and then disburse salary. It was dangerous to carry huge amount. The office work has reduced to a greater extent with the adoption of HRMS. The salary, increment and other allowances are directly credited to the bank account of the employee. We can conclude that office automation system is most useful.

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b. Institution Management

The office administration today is full of office automation. Office administration work is very easy and simple. The commencement of college and class are managed through computer and app based calling bell system. The college bell rings at fixed time without human intervention. Before the adoption of the technology a person had to ring the bell at fixed time period. One had the apprehensions whether the appointed person does the work of ringing the bell at the fixed time, and this is being solved with the adoption of technology. There were no proper documents to record the incoming and outgoing time of employees for their work. Today we can find computer based biometric attendance system with face and finger print recognition. The login and logout time can be viewed with the help of mobile phone or computer with internet. The login and logout time can be saved and also can be sent to the person who requires it. There was no documentation for the visitors for their entry and exit. Today, with the installation of CC camera we can monitor the persons coming and going out of the institution with the help of mobile phone or on computer screen. One can monitor the activities of the institution easily with this office automation technology and one can also print and save the details for future reference.

b. Correspondence with University and Department

The contact and correspondence of the government, department and the university mostly are online. The university establishes correspondence with the affiliated colleges through online. The announcement, notices, programs, admission and exam related aspects of the university are done online. The university has created college login with ID and password is provided to college. Through the login the student admission and exams are monitored and controlled. The admission is approved upon providing admission details. The examination system is also reformed by most of the universities. The department of collegiate education communicates with the colleges through website and email. The department of collegiate education makes announcements through website and the required information is collected through web link URL from the colleges. The college time table, details of teaching and non-teaching staff, scholarship of students, edusat, gnanasangama, and so on is made known to the department with online data entry. The time and money is saved through adoption of technology.

c. Students Admission

The most important office function of a degree college is the admission process of the students. The traditional system of admission was not student friendly. The students had to fill the admission application given to them personally and attach the required documents for the purpose of admission. They had to wait until the merit list is announced and it was time consuming. Today with the help of MS word, MS Excel, email, images, NEFT and adoption of other technologies the students can visit the website and fill the admission form details and the details of which is available to the university as well as the colleges for which the student has opted admission and get into the admission process. The students get the admission details in his mobile phone immediately after the admission. The students need not stand in long ques for payment of the fees and can pay it online. Every student is given the login ID and password through which the admission, examination, result and internal marks can be viewed with the help of mobile phones. Because of adoption of office automation, the office manual work has reduced drastically and the stress on the office staff has also reduced. It is one of the advantage of office automation system.

d. Students Examination

With relation to the student examination work the college offices are using technology. The university academic calendar and examination timetable are announced in the website of the university. In the traditional method of functioning all this information were sent to the colleges through post which involved using of more number of papers and paying postage charges. One had the apprehension whether the post has reached its destination or not. Today with the adoption of office automation many changes have been brought into the functioning of the offices. In the traditional way of functioning of the office the students and staff members were put into lot of hardships. Exam details had to be filled in the sheets provided to them, stand in ques for paying fees in the colleges. Much manual work had to be done by the staff before the commencement and during exam process. The examination system too was not friendly. With the help of office automation, the office work today has become very easy, simple and less complicted. The seating arrangement of the students and their room numbers are readily available in the concerned university websites. Because of this the manual work has reduced to a greater extent. The exam results are announced upon evaluation of the answer sheets.

e. Edusat classes, virtual classes and gnana sangama

In extension of the office automation the degree colleges provide for virtual classes, edusat class and gnana sangama. The students can assess the study material through laptops and mobile phones. The department has

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uploaded the e-content to the virtual classes funded by RUSA. The department has recorded the subject content delivered by subject expert and the same is uploaded for the benefit of the degree students. The students upon coming to the college can use the Wi-Fi can log on to the virtual class app. The details of the virtual classes are sent from the college office to the department of collegiate education. Another important aspect of the automation is the edusat classes. Every month the calendar of events is displayed in the website regarding the classes conducted for the month. The class contents are delivered with the help of the set top box installed in the college. The online contents are delivered for the benefit of the students by subject experts. The students can view the edusat contents at the fixed time according to the time table.

In the same lines as the virtual class we have the gnana sangama program which is important. Having digital classes is one of the important steps taken by the department of collegiate education for the benefit of the students. The RUSA funded colleges are given laptops by the department of collegiate education. Faculty members select the topics for the benefit of the students and play them with the help of Wi-Fi based LCD projector screens. All the events happening in the college is viewed by the principal sitting in the chamber with the help of CC camera installed. The students' attendance is also recorded with the help of gnana sangama program.

7. FEW GUIDELINES OF OPERATE THE OFFICE AUTOMATION SYSTEM

To install and operate the office automation system few guidelines have to be followed and they are

1. The office which is interested in adopting OAS have to make a feasible study to see whether it is viable for them to adopt the same.
2. The employees have to be familiar with the use of office automation system and one have to always be careful with its use.
3. New technologies will be emerging in the OAS and business have to keep them updating whichever is useful to them for operations.
4. The adoption of office automation system should permit to access the data at any time and place, otherwise it will not be possible to use the system effectively.
5. One of the important aspects which have to be given prominence is safeguarding the data and updating the soft wares whenever necessary.

8. ADVANTAGES OF OFFICE AUTOMATION SYSTEM;

The adoption of office automation in colleges provides various benefits to the offices and are listed below.

a. The staff of the office are able to perform their duties quickly, get the information and also convey the queries in a hassle free manner.

b. The students and office staff have reaped major benefits of the office automation system. The student admission process has become quick, easy and simple. The office staff are less burdened with the work.

c. The data is easily saved and can be used as and when required, it can be viewed and with the help of LAN and internet the data can be forwarded to the persons requiring it.

d. The saved data is available at one place and it can be searched with the help of computers.

e. Safety and security of the data is enabled due to login ID and password.

f. The schedules can be viewed and used at a time by different people.

g. The stress on the top management has reduced and enables easy administration.

h. With the help of office automation, we are moving towards paperless economy and becoming environment friendly.

i. The office related decisions can be taken quickly and also announced quickly.

j. Adoption of office automation system is beneficial to all the stakeholders

9. DISADVANTAGES OF OFFICE AUTOMATION SYSTEM

a. Adoption of office automation system requires huge investment.

b. When there are innovations in the existing technologies then new technologies enter the offices and the old ones become obsolete and add to e-waste.

c. Office staff show less interest in day to day activities.

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d. Persons serving the institution from a long time have less or no knowledge of the current office automation system. Therefore, the work is delayed for some extent as they have to depend on others to get the work done.

e. The students are not concentrating on studies and always use their mobile phone for entertainment purposes.

f. Though the office automation system is saving a lot of time and effort it is not environment friendly as it is contributing to a lot of e-waste and is detrimental to the environment in the future.

10. CONCLUSION

With the modern era the way of functioning of the office is also seeing new ways of performing work. Technological innovations are undertaken for making simple the marketing, business and administration activities. The day to day work performed in the office are less complicated, and getting faster along with reducing the travelling issues and reducing cost. Each and every stake holder of the institution is reaping the benefit of the office automation system. Due to the adoption of the office automation system there is huge demand for the personal computers, smart phones and internet connections. We can conclude that the education system along with the office automation system is student friendly. Through there are certain disadvantages of office automation system the benefits outweigh them. Therefore, we can conclude that office automation system plays a prominent role in the modern era and one of the useful technology.

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DISRUPTIVE INNOVATION - EMERGING TECHNOLOGY IN MARKETS AND INDUSTRIES - A STUDY

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ABSTRACT
The concept of Disruptive Innovation was put forth by Clayton M. Christensen. Disruptive innovation is present in all the fields of the world. Disruptive innovation is found in the field of industry, agriculture, business, machines, internet, mobiles, TVs fridge, and so on. In the place of traditional products modern advanced technological products are available. The major aim of innovation is modernization. Disruptive means changing the older version of the products. Innovation means using of modern technology in the older version of the products and selling for the benefit of the consumers. The present business and is using internet for business and other activities. Consumers while buying the products are interested in buying those products which are better and easy to operate. Today a single product is catering to different uses of the customer. Earlier we had to buy printer, scanner, Xerox machine separately which was costly. Today we can find a single product which is catering to the different uses. Companies are producing and selling those products which satisfy the needs of the consumers. Consumer prefer modern and new products with updated technology. Due to the disruptive Innovation small and medium enterprises are closed down and is a great loss for the economy.

Keywords; Disruptive Innovation, Printer cum Scanner, Pen Drive, Consumers, Smart Phone Mobiles, Advantages, Disadvantages

1. INTRODUCTION

The most effective business idea in the 21st century is disruptive innovation. As technology grows companies and consumers move from older version of the products to the newer version of products. Disruptive innovation means adoption of technology by industries and markets. In companies and business to market the product, new technologies are adopted along with value added network. It is also using technology literacy in business. The concept of disruptive innovation was first coined by Clayton M. Christensen. The books which was authored by him are- "The Innovator's Solution", which was a follow up to his "The Innovators Dilemma" published in 1997. Disruptive innovation is defined in different ways. In the present study disruptive innovation is analyzed in the context of markets and industries and the way in which technology has undergone changes and its usefulness. Technology is present in every field.

Traditional products have been replaced by new products. Products like Calculator, telephone, printing machines, Wikipedia, website, cars, televisions, bikes and so on have undergone vast changes and in place of them internet based smart technology products are available. Because of disruptive innovation products with multiple uses are available. Due to the growth of technology we are able to sell products in the market with low cost and more profit to the consumers.

Using new technology in products in place of traditional products is called disruptive innovation. When Abraham Graham Bell invented telephone, for 100 million dollars of purchase of telephone one could communicate up to a distance of few meters. Today, we find that telephone has undergone vast changes and apart from communicating device it is also used for many purposes. Telephone was attached to cables in the beginning and today we find wireless devices. In place of telephone we find smart phones. The smart phones today come with calculator, telephone, internet, online marketing links, scanner, email, images, torch light, acts as a time piece, video and so on. By purchasing the smart phone one is relieved from purchasing separately, calculator, wrist watches, camera, video recorder and so on. At present companies and markets are cashing in on the disruptive innovations.

Disruptive innovation has the advantages of flooding the markets with innovative new products, providing the consumers with low cost products with more benefits, and a single product acting as multiple products and etc. Though disruptive innovation has many advantages, it may create monopoly market situations, and internet based products which are harmful to the environment. We can conclude that today's world is full of innovations and therefore it is one of the best business methods.

2. HISTORY AND DEVELOPMENT OF DISRUPTIVE INNOVATION

From the history we come to know that companies are trying hard and differently to market their products in the market. Schumpeter in 1942 first thought of adopting technology in the market. His thoughts are contained in

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the book creative destruction in capitalism, socialism and democracy. The thoughts about markets are written in the books Technology S-curve and Discontinuous innovation; the attackers advantage by McKinsey and Richard Foster. Handerson and Clark, had written the book Architectural Innovation in 1992 about the development in the market environment by adopting technologies. Christensen in 1991 in his book the innovator's challenge; understanding the influence of Market Environment on processes of Technology Development in the Rigid Disk Drive Industry has written about the importance of technology in market. Christensen in the year 1993 again wrote about the adoption on business technology in the book The Rigid Disk Drive Industry; a history of Commercial and Technological in Business. In 1996 Jean Marie Dru wrote the book Disruption; Overturning Conventions and shaking up the market place has written about the adoption of technology and the changes in the market. In 2001 Richard Foster and Sarah Kaplan has written about the methods followed by successful companies for success in the market in his writing Creative destruction; why companies that are built to last underperform the market and how to successfully transform them. The customers are interested to buy the products at less cost. Companies have to produce products after analyzing and understanding their behavior.

3. WHAT IS DISRUPTIVE INNOVATION AND MARKETING

Disruptive Innovation can be interpreted as some innovation that disturb something, or, in simple sentence, it is disruptive. Disruptive word in the economic context cannot be taken its meaning freely. In line with technological developments, disruptive in this context means that new technological innovations will disrupt the old technology. An innovation that creates new market by applying a different stage of values, which ultimately overtakes on existing market. The internet was disruptive because it was not an integration of a previous technology, while the laptop computer is not considered disruptive because it was an improvement on an existing technology.

Disruptive Innovation thought was developed by Business School Professor Clayton Christensen. According to him disruptive innovation as "a process by which a product or service takes root in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors." Disruption has always been a part of the business world, particularly as technology continues to evolve.

How does disruption differ from innovation? There are some crossovers between the two, but there are also differences. Just as all thumbs are fingers, but not all fingers are thumbs, all disrupters are innovators, but not all innovators are disruptors. Disruptors and innovators are similar in that they're both creating and making ideas, items, products or services. However, the main difference is that a disruptor doesn't just create something new or improve upon a process; they literally change the industry and alter the way we think, behave, and act about a certain idea, item, product, or service. Renowned expert in the world of disruption, Richard Branson, has said, "Disruption is all about risk-taking, trusting your intuition, and rejecting the way things are supposed to be. Disruption goes way beyond advertising; it forces you to think about where you want your brand to go and how to get there."

1. OBJECTIVES OF THE STUDY

The following are the objectives of the study

a. To study the areas which have seen innovation with the modernity

b. To understand the changes in the market and business with IOT

c. To know the use of technology in the field where goods are introduced in the market

d. To analyze the usefulness and disadvantages by disruptive innovation

e. To give suggestions for the problems faced by businesses through disruptive innovation

2. HYPOTHESIS

a. The products produced by the companies are disruptive

b. Consumers are attracted towards products which use modern technology

c. A single product has multiple benefits

d. Earlier products are exiting the market due to disruptive innovation 6. Methodology;

Disruptive Innovation - Emerging Technology in Markets and Industries A Study is based on secondary data. The data was collected from relevant books, newspapers, and brochures.

7. Some examples of Innovation

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a. Companies and its Pen Drive:

Earlier we were saving the documents, images and other information in the computer using floppy and CDs. Prominently we were using 8, 5.25, 3.5 floppy disc drive and CDs. Through these saving devices we were able to save only a limited data. Today there are many companies which have grown due to the innovation in technology in the field of data management. From the following we can learn the top 5 companies which are popular in India in the field of pen drives and their adopted technology

Best 2019	Transcend JetFlash 350 Pen Drive	XP715W USB Pen Drive	SanDisk Ultra USB 3.0 Pen Drive	Kingston Data Traveler SE9 USB Pen Drive	Sony USM8W/BS Pen Drive
Pros	The Cap protects the connector for the USB flash drive from oxidation and dirt	A miniature compact metal body allows use a USB flash drive as a keychain	Features an exclusive software to store and back the important data	The reliable case of this drive allows to carry it around wherever you go	Exclusive flash drive design makes this sony pen drive, stylish and beautiful
Capacity	32 GB	16 GB	16, 32, 64, 128 GB	8 GB	8 GB
Reading and Writing	Reading: 15Mb/s Writing: 11Mb/s	Reading:70Mb/s Writing: 20 Mb/s	Reading: up to 100Mb/s Writing: up to 40 Mb/s	Reading:20Mb/s Writing: 5 Mb/s	Reading:20Mb/s Writing: 11 Mb/s
USB Standard	USB 2.0	USB 3.0	USB 3.0	USB 2.0	USB 2.0
Protection	Password Protection	Durable metal housing	SanDisk Secure Access	Durable metal housing	Durable metal housing
Guarantee	Limited lifetime	2 years	5 years	5 years	2 years

From the above table it is evident that in India the most produced and sold pen drives come from transcend. The most popular pen drives the world over and the third place occupied by it in India is scandisk. These companies are seeing a lot of demand and marketing activities due to the fact that they are adopting new technology and offering various services for the benefit of the users. The traditional products are giving way for modern technology based products. Today the pen drives come with 4,8,16,32 and 132GB. It is convenient to save the data to a pen drive and use it as and when and also where ever it is required. Markets are offering the consumers with the products of their choice.

a. Printer cum Scanner

In the place of typing stencil and stencil machine, traditional typewriters today we can see the popular printer cum scanner. Due to the adoption of the modern technology stencil and stencil machines have exited from the market long ago. The traditional typewriter was difficult to operate and was costly. One had to purchase the printer and scanner separately. Today we can find the all in one printer, scanner and Xerox machines. The earlier printing machines had to be operated manually and had to physically work for each copy of Xerox. Today we can have both the color and black and white copies as many as we want one we feed the number of copies and press ok. Today we can take a print with the help of computer, mobile and Tabs. Today the market has printers which can give you a copy in few seconds. The following tables gives the details of the printers and scanners which the consumers prefer of different companies.

Company Name	**Epson L210**	**HP Laserjet M 1005**	**Samsung ML 2161**	**Canon Pixma E400**	**Ricoh SP210SU**
Printer type	Inkjet Printing	Laser printer	Laser Printer	Inkjet Printer	Laser Printer
Print Resolution	5760x1440 max dpi	600x600 dpi	1200x1200 dpi	4800x600 dpi	1200x600dpi

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Print/USB speed	High speed 2.0 connection	High-speed USB 2.0	Maximum print speed of 20 ppm	USB 2.0 connection	16 ppm
Paper support	A4 and envelops	Paper, envelops, card stock, labels	Paper, envelops, card stock	Paper and envelops	A4, A5, B5, B6
Printer weight	6.22 kg	8.2 kg	5.31 kg	4.5 kg	

The top 5 companies in the field of printers all over the world during 2018-19 are given in the table. Epson company is most popular among the consumers in the market. It is providing a better service at low cost. HP occupies the second place in the market followed by Ricoh in the fifth place. All in one printers are more demanded and one can see the disruptive innovation in the printers. The market is demanding the fastest and smart printers and companies are always waiting to fulfil the demands of the market and introducing printers with new technology.

b. Smart mobile phones

The most preferred and favorite products of people all over the world is smart mobile phones. From landline we got walkie talkie, from keypad mobiles to smart mobile phones a drastic innovation has happened in the field of communication devices. The cable phones are today wireless. Video recorder, cord post, CD player, music systems, photos, phones, walkie talkie and various other traditional products are out of the marker after the entry of the smart phones. In place of all these traditional individual products a single mobile phone is used. Today smart phone apart from acting as a communication device is also used as a scanner, printer, camera, video recorder, music player, speakers, a saving device of documents, for messages, WhatsApp, for interacting with social media accounts and so on in one smart phone. The consumers are getting the benefits of the innovations in the technology. Smart phones can be connected to TVs, LCD projectors, printers and get the required benefit. With the help of smart phone and with the help of the google map we can easily reach the destination without any one's help. One of the prominent reasons for the popularity of the mobile phones are the disruptive innovation

Company Name	IPHONE XS MAX	GOOGLE PIXEL 3 XL	HUAWEI MATE 20 PRO	ONEPLUS 6T	SAMSUNG GALAXY NOTE 9
Performance	Hexa core	Octa core	Octa core	Octa core	Octa core
Display	6.5" (16.51cm)	6.3" (16cm)	6.39"(16.23cm)	6.41"(16.18cm)	6.4" (16.26cm)
Storage	64 GB	64 GB	128 GB	128GB	128GB
Camera	12MP+12MP	12.2MP	40MP+20MP+8MP	16MP+20MP	12MP+12Mp
Battery	3174 mAh	3430 mAh	4200 mAh	3780 mAh	4000 mAh
Ram	4 GB	4 GB	6 GB	6 GB	6 GB

The above table shows the most popular android smart phones all over the world and the technologies adopted by them during 2018-19. The most demanded smart phone in the market is IPhone adopting new technologies and entering new boundaries of the market. The fifth place is occupied by Samsung. The phone providing the broad screen is the Iphone. Samsung has increased the internal storage to 128 gb with better battery and backup. Huawei has the MAH with battery backup, print and backup camera capacity. In India the most demanded smart phone is Samsung

Top 5 best- selling smartphone brands in the world

Sl. No.	Vendor	4Q17 Unites	4Q17 Market Share
01	Samsung	74026.6	18.2%
02	Apple	73175.2	17.9%
03	Huawei	43887.0	10.8%
04	Xiaomi	28187.8	6.9%
05	Google Pixel	27930	6.4%

From the above table it is evident that Samsung mobiles are used by 18.2% of people around the world. The second place is occupied by Apple company with 17.9%, followed by Huawei, Xiaomi and Google occupying

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the fifth place. Consumers prefer those mobile phone which come with new technology and advanced features. Today's world is ruled by technology. Iphone 6 is used by 220 million people around the world. In the same way Nokia 5230 is used by 150 million people, Galaxy 4 S by 80 million people, Iphone 7 by 78 million and GalaxyS3 by 70 million people. These phone come with better technology and are attracting more and more consumers with better features.

7. BENEFITS OF DISRUPTIVE INNOVATION

Disruptive innovation is a very wide and composite subject. The importance of the disruptive innovation has already been discussed. The benefits of disruptive innovation are as follows.

a. The consumers are benefitted from the disruptive innovation. The companies are producing low cost products which offer multiple uses. Therefore, the demand for products in the markets also increase.

b. The consumers have plenty of choices in the market. The earlier products were limited to a single requirement. Today a single product offers multiple uses.

c. Due to new innovation new demand is created in the market for the products. The technology is also adopted by others. Products undergo technological changes or new technology brings new products.

d. The market is competitive and innovation is encouraged. Companies adopt new technology and face competition. The basic television has undergone vast changes. The LCD and LED televisions has chased away the tape recorder, radio, video player, and so on. The consumers are more benefitted from adoption of new technology and competition in the market.

e. The job opportunities have increased due to the adoption of technology and disruptive innovation in the market. Employment is generated and the standard of living has increased along with better bargaining power of the employees.

f. The economic conditions of the country are growing due to disruptive innovations. Disruptive technologies according to Schumpeter's theory will increase productivity due to efficiency. As the production is increased, demand and consumption is also increased due to which the economic activity grows and contributes to the growth of the country.

8. DISADVANTAGES OF DISRUPTIVE INNOVATION

There are many disadvantages of disruptive innovation and they are as follows

a. Due to innovations in the market on a day to day basis in the adoption of technology the earlier products have no use. The unused products are piling up. For example, a car purchased a year ago and the car available in the market today has many differences in technology today. The older version products cannot adopt the new technology and therefore the consumers are confused lots.

b. When new technology is adopted usually the products are of higher value. The consumers may back foot due to increased prices.

c. The small scale industries are on the verge of closure. The number of people loosing employment is increasing and leading to unemployment.

d. Disruptive innovation is related to technology and the production of products with older technology has stopped and it is leading to e-wastage and is detrimental to the environment of the world as a whole.

9. CONCLUSION

The most important topic in the world as on today is disruptive innovation. Innovation cannot be neglected by any one. Innovation floods the market with new and creative products. The goods are produced and marketed based on the demand and consumer expectations. The internet based technology is the easy way of doing things and provides quick results. Based on the disadvantages of the disruptive innovation it cannot be discarded, because it is dangerous to the market. New innovations are required and order of the day. Innovations is necessary in all the fields. New ways have to be found to deal with the old and discarded product.

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RAMADAN EFFECT IN THE RETURNS AND VOLATILITY OF SHARIAH COMPLIANT STOCKS IN INDIA

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ABSTRACT

This paper attempts to investigate the existence of Ramadan effect, a calendar anomaly in the returns and volatility of shariah compliant stocks of India using TGARCH model. Daily time series data of closing price of Nifty500 Shariah and Nifty Shariah25 indices for the past 12 Ramadan months, from 2007 to 2018, were collected and analyzed.

The results substantiate that the calendar anomaly was present in the selected indices. There were two major conclusions derived from the analysis. The mean returns during the Ramadan period were significantly lower than the mean returns of pre and post Ramadan period. There was also a significant decrease in the volatility during the Ramadan period. Hence, it can be inferred that Ramadan effect is present in the Shariah compliant stocks of the Indian equity market.

Keywords: EMH, Ramadan Effect, Anomaly, ADF Test, TGARCH Models.

1. INTRODUCTION

The Efficient Market Hypothesis (EMH) is a vital component of the modern investment theory. Fama describes efficient market as "A market with large number of rational individuals, with a goal of profit maximization, avidly competing with each other and attempting to predict future market prices of individual securities, and where all relevant information is almost freely available to all investors. The security prices quickly adjust to the new information, as readily that is available." (Fama, 1970).

Financial market anomaly refers to any circumstance in which the performance of a stock or a portfolio varies from the postulates of EMH (Silver, 2011). Financial market anomalies can be primarily classified into three categories i.e. Calendar or Seasonal anomaly, Technical anomaly and Fundamental anomaly.

The weak form of EMH, which proposes that markets efficiently incorporate the impact of past prices on current market price (Marcus, Bodie, & Kane, 2011) and no sort of analysis can be employed to predict future prices to make abnormal returns, is contradicted by calendar anomalies (Boudreaux, 1995). Calendar anomalies testify that technical analysis can be utilized to identify seasonal patterns in stock returns.

Ramadan Effect is a calendar anomaly, which refers to the seasonality in returns of stocks during the Ramadan lunar month. A simple timing strategy based on technical analysis can be used to earn abnormal returns and thereby opposes the weak form of EMH.

The Islamic population in India accounts for 14.23% of the total population (Census Report, 2011), making Ramadan a widely observed phenomenon in India. Thus, it becomes relevant to analyze the effect on the equity market during the lunar month of Ramadan due to a shift in investor psychology, investor mood and sentiments.

2. REVIEW OF LITERATURE

(Chotigeat & Pandey, 2005) investigated and proved the presence of seasonality in stock returns in SENSEX and EMAS (Kuala Lumpur Stock Exchange) index. (Patel, 2008) analysed BSE 500 and NSE 500, and diagnosed the presence of two separate calendar effects, a November-December effect and a March to May effect. (Archana, Safeer, & Kevin, 2014) stated that Turn of the Month Effect and Turn of the Year Effect were minimally visible in the Indian equity market but, not statistically proven for the analysed period. Whereas, (Chandra, 2009) established that Turn of the Month Effect and Time of the Month Effect is present in BSE-SENSEX; statistically significant values were observed for both the effects. (Kumar S. , 2017) investigated for the presence of January Effect, Day of the Week Effect and Turn of the Month Effect and concluded by stating that such anomalies will eventually disappear from the market with progress in information technology and systematized currency markets operational round the clock, ultimately reducing the cost of information. Similarly, (Caporale & Zakirova, 2017) reported that all anomalies disappear if transaction costs are taken into account. Thus, suggesting that no investor can make abnormal profits by any means.

(Agrawal & Tandon, 1994) examined five seasonal patterns i.e. Month of the Year Effect, Turn of the Month Effect, Holiday/December end Effect, Day of the Week Effect and Friday the thirteenth Superstition Effect in Eighteen Countries. They reported the presence of Day of the Week Effect in nine out of eighteen countries,

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Turn of the Month Effect in fourteen countries. The Month of the Year Effect was also found in fourteen countries. (Mitra & Khan, 2014) investigated the Day of the Week Effect in NSE Nifty 50 and found no such anomaly in all but one model in which the index exhibits Wednesday effect on intraday return of the index. Whereas, (Kaushik, 2017) scrutinized for presence of Day of the Week Effect on returns of BSE Smallcap, Midcap and Largecap indices of Indian capital market using GARCH model and confirmed the presence of Day of the Week effect only in BSE Smallcap.

(Patel, 2014) and (Qureshi & Hunjra, 2015) contradict the presence of anomalies in Indian and Pakistani stock markets respectively and state that their analysis is consistent with the efficient market theory. Whereas, (Sharma, Mittal, & Khurana, 2014) confirmed the presence of the Month of the Year anomaly in the Indian equity markets. Additionally, (Kumar & Jawa, 2016) and (Gupta, 2017) also confirm that December Effect is present in the Indian stock markets, thereby implying the presence of informational inefficiency in Indian stock markets.

(Ariel, 1990) investigated the pattern of daily stock returns on trading days preceding the holidays so as to analyze whether trading days prior to holiday would give high returns. The outcome of this study confirmed that returns on the trading day prior to holidays are significantly high and equal to nine to fourteen times of the returns accruing on other days. Whereas**,** (Marrett & Worthington, 2007) applied a Regression based approach to study holiday effect in the Australian daily stock returns at three different levels and the results showed significant pre-holiday effect in terms of returns. It is also observed that the returns for the retail industry stocks are high compared to other industries on the trading day prior to holidays.

(Sonjaya & Wahyudi, 2016) and (Alawadhi, Bash , & Jamaani, 2017) test the persistence of Ramadan Effect in Muslim-majority countries and discover that only a minority of these countries experience a significant presence of such an anomaly. They also suggest that other factors such as prompt risk-taking behavior and enhanced social interaction among investors might also impact stock market returns. Additionally, (Tan & Ozlem, 2018) analyse the effect of Ramadan on the stock exchanges of 16 Muslim-majority countries. The study divides Ramadan into three 10-day periods covering the 30-day period of Ramadan and employs Dummy Variable Regression Model to assess the impact of Ramadan. The results confirm that 13 out of the 16 countries experience positive returns during Ramadan. However, results for only one country are statistically significant.

Albeit, many researches have been conducted to examine the persistence of anomalies in the Indian equity market, there is no study about the effects of Ramadan on the Indian equity market. Hence, it becomes viable to study the effect of such anomaly in the Indian equity market and analyze if any abnormal returns can be generated by trading on strategies based on this anomaly.

3. OBJECTIVES

1. To inquire the presence of calendar anomaly in the returns of the selected indices during the Ramadan months.
2. To inquire the presence of calendar anomaly in the volatility of the selected indices during the Ramadan months.

4. METHODOLOGY

4.1 Data Selection

To analyze if the Ramadan Effect is present in the Indian equity market, the following two indices have been selected to represent Shariah compliant stocks listed in NSE. Taqwaa Advisory & Shariah Investment Solution (TASIS) has entered into an agreement with NSE Indices Limited so as to provide for Shariah compliance screens which can then be utilized to filter stocks for Shariah compliance on basis of certain Business and Financial norms. (NSE Indices)

1. NIFTY500 Shariah – Represents stocks of Nifty500 screened for Shariah compliance, the resulting compliant stocks closely track the performance of the parent index.
2. NIFTY Shariah25 – Represents fixed number (i.e. 25) of Shariah compliant shares, unlike the Nifty500 Shariah which has fluctuating number of constituents.

The dates for the lunar months of Ramadan over the past 12 years according to the Gregorian calendar are represented in Table 1.

Table 1

Year	Ramadan period	Year	Ramadan period
2007	13th Sept to 12th Oct	2013	9th July to 7th Aug

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2008	2nd Sept to 1st Oct	2014	29th June to 28th July
2009	22nd Aug to 20th Sept	2015	18th June to 17th July
2010	11th Aug to 9th Sept	2016	7th June to 6th July
2011	1st Aug to 30th Aug	2017	27th May to 25th June
2012	20th July to 18th Aug	2018	16th May to 14th June

Source: National Portal of India

The data collected spans from 2007 to 2018 (for Nifty Shariah25 from its base date i.e. 1st January 2009 onwards). The data was further filtered so as to pertain to the Ramadan quarter of the year i.e. one month prior to Ramadan, the Ramadan month and the Post Ramadan month. Such filtration of data would help to accurately analyze the data for presence of anomalies that might occur during the lunar month of Ramadan.

4.2 Data Analysis

To study the Ramadan Effect in the returns of the selected indices, returns were calculated as per the following formula:

$$R_t = \log(P_t) - \log(P_{(t-1)}) \quad (1)$$

Where R_t is the daily return of selected indices at time t. P_t denotes the closing price of the index at time period t, and $P_{(t-1)}$ denotes the closing price of the index at time period t-1. For analyzing the data, Augmented Dickey-Fuller test, TGARCH Model and ARCH LM Test were used.

5. Empirical Results

Augmented Dickey-Fuller (ADF) Unit Root test was applied to the returns of the selected indices. Non-stationary data leads to spurious results, therefore it becomes mandatory to perform this test in order to analyze the stationarity of data before any further analysis (Dickey & Fuller, 1979). The null hypothesis (H_0) of this test is that the chosen time series data has a unit root. The H_0 was rejected for all the chosen indices as the respective P-values were lower than 0.01, which proves that returns of the chosen indices were stationary at level.

5.1 Estimation of TGARCH Model

After stationarity test, TGARCH model was estimated to examine the presence of market anomalies in the index returns. The following TGARCH model was used:

$$R_t = \beta_0 + \beta_1 Ramadan + \varepsilon_t \quad (2)$$

$$\sigma_t^2 = \omega + \beta\sigma_{t-1}^2 + \alpha\varepsilon_{t-1}^2 + \gamma(\varepsilon_{t-1}^2)(I_{t-1}) + \theta Ramadan \quad (3)$$

In the equation (2), R_t denotes the returns of the chosen index. β_0 represents the constant. Dummy variable for the Ramadan period was introduced in the mean equation of the regression model, to investigate the presence of any anomaly in the mean returns.

In equation (3), ω refers to the constant of the variance equation, $\beta\sigma_{t-1}^2$ is the GARCH term which estimates the magnitude of clustering effect in the conditional volatility of the chosen index returns. $\alpha\varepsilon_{t-1}^2$ is the ARCH term which estimates the presence and magnitude of ARCH effect in the estimated conditional variance. $\gamma(\varepsilon_{t-1}^2)(I_{t-1})$ is the asymmetric term, where $I_{t-1} = \{(1 \text{ if } \varepsilon_{t-1} < 0) \text{ and } (0 \text{ if } \varepsilon_{t-1} \geq 0\}$. Asymmetric term measures the magnitude of asymmetric effect in the conditional variance of the chosen index return. Negative innovation, generally leads to a higher next period volatility compared to positive innovation. This feature is known as Asymmetric effect (Ding, Granger, & Engle, 1993). $\theta Ramadan$ denotes dummy variable for Ramadan lunar month introduced in the variance equation. The estimated TGARCH model coefficients with associated z statistics and P values are shown in Table 2.

ARCH LM test was applied to investigate the presence of ARCH type of heteroskedasticity in the residuals of the TGARCH model. The H_0 for the ARCH LM test is that residuals of the model do not suffer from ARCH type of heteroskedasticity. The results of the ARCH LM test are presented along with model estimations in Table 2.

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Table 2						
TGARCH Model						
	Dependent Variable- Nifty 500 Shariah			**Dependent Variable- Nifty Shariah25**		
Variables	**Coeff**	**z-stat**	**Prob.**	**Coeff**	**z-stat**	**Prob.**
Mean Equation						
C	0.002641	6.252734	0.0000	0.002369	3.940819	0.0001
Ramadan	-0.003273**	-10.77293	0.0000	-0.002737*	-1.852566	0.0639
AR term	-0.119485	-6.214534	0.0000	-0.100154	-2.182639	0.0291
Variance Equation						
C	3.40E-05	10.28420	0.0000	1.28E-05	4.299258	0.0000
ARCH term	-0.010262	-8.708906	0.0000	-0.009726	-11.55540	0.0000
GARCH term	0.654026	40.42234	0.0000	0.885335	37.02621	0.0000
Asymmetry term	1.434661	9.427763	0.0000	0.172948	5.294190	0.0000
ARCH LM Test						
		R-Squared	Prob.		R-Squared	Prob.
		0.048744	0.8256		0.006069	0.9380

**Significance at 5% level, *Significance at 10% level

The TGARCH models for Nifty 500 Shariah and Nifty Shariah25 were estimated by introducing AR (15) term and AR (16) term respectively in the mean equation of the model in order to correct the autocorrelation present in residuals of the mean equation. Autocorrelation in residuals would make the estimated test statistics and P-values less reliable (Bhattacharya, Sarkar, & Mukhopadhyay, 2003).

The estimated ARCH terms for the TGARCH model of Nifty 500 Shariah and Nifty Shariah25 indices were significant at 5% level. The estimated GARCH terms for the TGARCH model of Nifty 500 Shariah and Nifty Shariah25 indices were significant at 5% level. This result can be interpreted that the conditional volatility of the chosen indices has strong clustering feature which would result in persistence of volatility.

The estimated Asymmetric term for the TGARCH model of Nifty 500 Shariah and Nifty Shariah25 indices were significant at 5% level. The coefficient of the Asymmetric term was positive indicating that good news or positive innovation increases the volatility of the next time period compared to bad news.

The estimated coefficient of the dummy variable representing the Ramadan period for Nifty 500 Shariah was significant at 5% level whereas for Nifty Shariah25, coefficients were significant at 10% level. This indicates that statistically significant negative returns were observed during the Ramadan period for Nifty 500 Shariah and Nifty Shariah25. If the market returns are significantly lower for the lunar month of Ramadan it is considered as a calendar anomaly. Presence of this calendar anomaly would make it possible for the investors to earn abnormal profits by exploiting this anomaly.

The p-values for the test statistic of ARCH LM test were insignificant at 5% level for both indices indicating that the residuals are free from ARCH type of heteroskedasticity, which proves that TGARCH model is a good fit for the chosen indices.

To further understand the impact of Ramadan on the volatility of chosen indices, dummy variable for the lunar month of Ramadan was introduced in the variance equation of the TGARCH model and the results are presented in Table 3.

Table 3						
Variance equation- Impact on Volatility						
	Nifty 500 Shariah			**Nifty Shariah25**		
	Coeff	**z-stat**	**Prob.**	**Coeff**	**z-stat**	**Prob.**
C	3.86E-05	17.62400	0.0000	2.57E-05	7.541557	0.0000
ARCH term	-0.011467	-37.70002	0.0000	-0.009715	-9.498767	0.0000
GARCH term	0.672460	41.64723	0.0000	0.864894	43.71953	0.0000
Asymmetry term	1.746422	9.116415	0.0000	0.147017	6.250636	0.0000
Ramadan	-1.10E-05**	-8.218700	0.0000	-2.64E-05**	-10.10596	0.0000

**Significance at 5% level

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Although coefficients for Nifty 500 Shariah and Nifty Shariah25 indices were statistically significant at 5% level, indicating a fall in volatility.

These results can be interpreted that the market anomalies were present in stock market return and also have a minor yet significant impact on volatility of Nifty 500 Shariah and Nifty Shariah25.

6. CONCLUSION

This study examined the presence of Ramadan effect (Calendar anomaly) in the returns and volatility of shariah compliant stocks of Indian stock market. Two stock market indices were chosen for the study to represent shariah compliant stocks of the Indian equity market. Strong clustering and asymmetric effect were found for all the chosen indices, which suggests that the stock market volatility of Shariah Indices is highly clustered and this would lead to high persistence in volatility. The results also support the fact that the returns and volatility were lower during Ramadan in selected Indices during the study period. This in turn leads us to deduce that the calendar anomaly is present in shariah compliant stocks of Indian equity market. The reason for such an anomaly could be psycho religious factors and investment allocation strategy of investor.

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CUSTOMERS' INTENTION TOWARDS ONLINE SHOPPING: AN EMPIRICAL STUDY

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ABSTRACT
Online shopping is an exponentially growing industry and its reach have far exceeded that of an offline store. The researcher has taken this study to understand the intention of its customer to shop online. The researcher identified that not all the visitors of these websites are actual shoppers of this website but merely use this website as a platform to search for information have an understanding of the product and reviews. This study intended to identify factors that lead to the intention of customers to shop online. For this purpose, the researcher used descriptive study. A well-structured questionnaire was prepared and circulated among the population, and the results were analyzed using various statistical tools. The factors considered for the study are Perceptional Behaviour, Attitude, Desired Consequence and Subjective Norms. It is found that Perceptional Behaviour plays an important role in the customers' intention of online shopping.

Keywords: Online Shopping, Offline Store, Customer Intention, Subjective Norms

1. INTRODUCTION
E-commerce has grown over the years and has given rise to a new store almost every day. The number of physical stores which making their presence felt in the online space are increasing exponentially. The online medium of performing business has proven to be advantageous not just to the consumer but also to businesses because of their large reach of products to almost all parts of the world (Cockburn, C., Wilson, T.D., 1996). Online shopping offers almost free information, unlimited time of understanding and evaluation of products, physical description of the products, and customizing opportunities. With the advancement of technology and virtual reality being used the online giants are investing in technology that aids the customer to understand how the products will look on them (Brengman, M et.al., 2005). Online shopping has become a trend everywhere; everyone looks for an online store for a quick information source.

Kim, J., Fiore, A. M., & Lee, H. H. (2007) in their research paper discusses online store perception which is directly related to the how each individual sees the online from their own expectation. The expectations of consumer change every time they visit the store as the visit is to meet a certain need, when the needs are met they are disappointed, leading to loosing of a possible future consumer. Firms have to make sure to meet the consumer demand and to achieve that satisfaction the firms have to constantly update their service and even the way they present the product information has to be customized to a great extent. For the same purpose, larger firms make use of Artificial Intelligence and Machine Learning to improve the product display and thus increasing the overall company website reach. Use of AI and Machine Learning in online sales website not only helps in displaying the product it all helps in finding the forecast of what each visitor might purchase and present them in a desirable fashion to maximize the visibility and make sure that the right product reaches the right consumer at the right time. This makes the online store an even more desirable way of doing business.

2. REVIEW OF LITERATURE
This study is conducted considering the factors Intention to purchase online, Attitude towards online e-commerce, Perceptual behaviour, desired consequence, Subjective Norms.

2.1 Intention to purchase online
Man Kit Chang, Waiman Cheung (2004) have identified 45 factors that have a direct effect on the intention to shop online, of which the researcher has taken 5 major factors which have an influence on the process namely Demographics, perceptual behaviour, attitude towards online shopping, desired consequence and subjective norms being the major variable of the study having a direct or indirect on the intention of the consumers as the study states.

Brown, M., Pope, N., & Voges, K. (2003) in their study have identified that the consumers who purchase products online are primarily convenience-oriented shoppers. Internet users generally enjoy the shopping process and are prepared to engage in comparison-shopping to find the best bargains as the price of the products are relatively cheaper and lead to intent to shop online. It is also understood that online shopping is proving effective for economic shoppers.Lee, G. G., & Lin, H. F. (2005) in their study shows that the purchase intention is based on the overall service quality and customer satisfaction and also further by design of the website, reliability, responsiveness, Trust and Personalization and show that adequate web design increase the overall customer satisfaction.

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Goldsmith, R. E. *et.al.* (2002) on his research tries to explain and predict the intent to shop online and considers that the factor of intent to shop online to be a highly unstable hence goes to attain a predictive form in his study as there is an increase in the number of online shopping users over the years making this as a dependent factor in the analysis and comes to a conclusion that innovativeness and use of technology increases the number.

2.2 Perceptional Behavior

Lee, G. G., & Lin, H. F. (2005) in their study shows perceptual behaviour of the respondents are mainly due to the lack of insights towards the customer requirement. By analysis, it was determined that the customer support provided by the online shop have a positive influence on overall service quality provided by the websites.

Collins-Dodd, C., & Lindley, T. (2003) suggests that the non-public labels have an influence on the shopping for behaviour and their perception of the brands. it's quoted that the patron believes that the non-public completes holding the higher price for cash however hold bit lower quality to it of a national brand.

2.3 Attitude towards online shopping

Everard, A., & Galletta, D. F. (2005) in their study talks about the trust factors which shows that it holds an impact on the shopping behaviour, trust factor includes uncertainty and risk involved during the shopping. Hence in their study, they have considered the factor of trust and credibility and these factors are highly sensitive and not particular bust shows a need to understand the variable

Jusoh, Z. M., & Ling, G. H. (2012) in the study goes to explain the relationship between the factors that are expected to have an effect on attitude towards online shopping ANOVA test conducted in the study shows that income, e-commerce experience, product perception, service have an effect on the attitude of online shopping.

McCole, P., Ramsey, E., & Williams, J. (2010) explains in their study that trust factor, have an effect on attitude towards online shopping. And also goes on to say that attitude towards online shopping is also dependents on the internet, vendor and trust in the third party. And by their analysis its also shown that trust in a vendor, trust in the Internet and trust in third parties show a positive impact on the attitude towards online shopping.

Hassanein, K., & Head, M. (2007) have explained with the help of a model that attitude can be directly affected by trust, perceived usefulness and enjoyment and indirectly affected by perceived ease to use and perceived social presence. And also says that attitude is chosen as the endogenous construct rather than behavioural intention. The attitude towards the website purchasing and returning to the virtual store it relatively volatile.

2.4 Desired consequence

Hassanein, K., & Head, M. (2007) in their study explains the factor of enjoyment which acts as a variable governing the intention to purchase or shop online. The enjoyment of any process is very much important and it can be understood that just as the enjoyment of shopping physically this also holds good for virtual shopping, along with enjoyment factor the social performance of the website is also important, the service provided by the virtual shop is equally important when it comes to desired consequence.

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002) in their study states the important of products desired by the customer and goes on to states that the online vendors should have a proper understanding of the customers requirement and the desire for specific need and suggest to improve methods of increasing customer satisfaction through providing the customer with adequate products, product description which include the pictures showing the dimensions of the product.

Overby, J. W., & Lee, E. J. (2006) Talks about the desired value a customer is looking forward in the service offered by the online retailer, they further classified values into utilitarian value and hedonic value and was proved in the hypothesis that utilitarian value has a stronger role than that of hedonic value.

2.5 Subjective Norms

Everard, A., & Galletta, D. F. (2005) show that the presentation flaws that are subjective norms have an effect on the customer, although the presentation and feel of the online website are subjective to each individual it also has an impact on the intention to shop online. They go on to suggest ways to improve the website design which include other websites and books which are published on the same hence it shows the importance to study this factor.

Kim, H. B., Kim, T. T., & Shin, S. W. (2009) talks about the subjective norms that affect the purchase intention of the customers, in their model it is shown that there is the relationship between the subjective norm and intention to purchase and use and also intention to reuse. And also goes on to prove that subject norms have a positive impact on both.

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3. OBJECTIVES OF THE STUDY

The objectives of this study are to find the factors that influence customer intention towards online shopping and to find the most influencing factor.

4. RESEARCH METHODOLOGY

This study is a descriptive study where the survey is collected from the general public who purchase products online. Simple Random Sampling without replacement is used in this study. Both primary data and secondary data were used. A pilot study is made with 30 investors. Reliability test is made to check whether the instrument is reliable. Reliability of the instrument is checked using Cronbach's alpha. It is found that Cronbach's alpha is 0.724 which is well above the threshold value of 0.6. This shows that the research instrument is reliable. The sample size and target respondents where carefully selected and was verified if they shop online to eliminate the chance of irrelevancy. The data is collected through a well-structured questionnaire. The questionnaire was circulated to 900 people. 316 people responded, in that 16 were rejected due to the errors. Hence 300 questionnaires were taken for analysis. Thus the sample size of the study is 300.

In the questionnaire, each respondent was asked to provide some demographic details such as age, gender, educational qualification. The Perceptional behaviour variables include respondents comparing price, searching information, collecting reviews, acceptance of multiple suppliers. The attitude variable includes Safety, Brand Loyalty, Suggestion, Review Forum. The Desired Consequence variable include cheap prices, good review, Information Provided, deep discount, adequate product description, mode payments. The Subjective norms variable include internet banking, debit/credit cards, cash on delivery as modes of payment, suggestions leading to an additional purchase, website design. Dependent Variable being intention to purchase which include the following factors using shopping variable to purchase, need for the product, satisfy a personal need.

The tools used for Data analysis are Percentage analysis, Mean and linear regression. The Data collected are analyzed using the statistical software SPSS 21.0.

5. RESULTS & DISCUSSIONS

This section presents a descriptive and inferential statistical analysis of the factors shaping customer intention towards online shopping using statistical tools namely frequency analysis, simple mean analysis, regression analysis and results are represented in tabular forms.

5.1 Demographic Profile of Respondents

The following is the demographic profile of the respondents.

Table-1: Demographic Profile of the respondents

Demographic Profile	Frequency	Percentage
Gender of the Respondents		
Male	216	72%
Female	84	28%
Age Group of the Respondents		
12-21	45	15%
22-28	165	55%
29-35	48	16%
36-45	36	12%
Above 45	6	2%
Educational Qualification of the Respondents		
No Formal Education	6	2%
High School	18	6%
Graduate	117	39%
Post Graduate	138	46%
Above Post Graduations	21	7%

Source: Primary data

The above table shows the demographic profile of the sample of 300 respondents. It shows that the majority of the respondents are male with most of them in the age group of 22 to 28 years of age with post-graduation as the educational qualification.

5.2 Ranking of factors under study

The table 2 below shows the ranking of the factors under study.

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Table-2: Ranking of Factors under study

Sl. No.	Factors	Mean
1	Perceptional Behavior	3.69
2	Attitude	3.42
3	Desired Consequence	3.42
4	Subjective Norms	3.25

Source: Primary data

Statements under each factor are measured by five-point Likert Scale with value 1 for 'Strongly Disagree', 2 for 'Disagree', value 3 for 'Neutral', 4 for 'Agree' and value 5 for 'Strongly Agree'. Then the average of statements under each variable is calculated which is shown in the above table. The mean values show that 'Perceptional Behavior' is 3.9 which is the highest followed by 'Attitude' and 'Desired Consequence'. This clearly states that the perception of customers related to online shopping plays a vital role in shaping their intention.

5.3 Influence of Perceptional Behavior on Customer Intention towards Online Shopping

The Influence of Perceptional Behavior on Customer Intention towards Online Shopping is analyzed using linear regression. The following table portrays the model summary.

Table-3: Model summary of factor Perceptional Behavior

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.718[a]	0.515	0.510	0.59138
a. Predictors: (Constant), Perceptional Behavior				
b. Dependent Variable: Intention to Purchase				

Source: Primary data

This table provides the R and R^2 value. The R-value is 0.718, which represents a simple correlation. It indicates a high degree of correlation. The R^2 value indicates 0.515 of the dependent variable, "Intention to Purchase", can be explained by the independent variable, "Perceptional Behavior ".

Table-3.1: Analysis of variance

Model		Sum of Squares	Mean Square	F	Sig.
1	Regression	35.651	35.651	101.940	0.000
	Residual	33.574	0.350	-	-
a. Dependent Variable: Intention to Purchase					
b. Predictors: (Constant), Perceptional Behavior					

Source: Primary data

This table indicates that the regression model predicts the outcome variable significantly well. Here, $p < 0.0005$, which is less than 0.05, and indicates that, overall, the model applied can statistically significantly predict the outcome variable.

Table-3.2: Coefficient of a model for Perceptional Behavior

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.893	0.261	-	3.418	0.001
	Perceptional Behavior	0.696	0.069	0.718	10.097	0.000
a. Dependent Variable: Intention to Purchase						

Source: Primary data

The above table 4.17.2 shows Coefficients, it provides us with information on the predictor variable. It provides the information needed to predict Intention to purchase from perceptional behaviour, contributes significantly to the model, we can present the regression equation as:

Intention to purchase = 0.893 + 0.696(Perceptional Behavior)

The above regression equation of Intention to purchase reveals the independent variables Perceptional Behavior has a positive impact on Intention to purchase.

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5.4 Influence of Attitude on Customer Intention towards Online Shopping

The Influence of Attitude on Customer Intention towards Online Shopping is analyzed using linear regression. The following table portrays the model summary.

Table-4: Model summary of factor Attitude

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.643	0.414	0.408	0.6446
a. Predictors: (Constant), Attitude				
b. Dependent Variable: Intention to shop online				

Source: Primary data

This table provides the R and R^2 value. The R-value is 0.643, which represents a simple correlation. It indicates a high degree of correlation. The R^2 value indicates 0.414 of the dependent variable, "Intention to Purchase ", can be explained by the independent variable, "Attitude towards Online Shopping ".

Table-4.1: Analysis of variance

Model		Sum of Squares	Mean Square	F	Sig.
1	Regression	28.488	28.488	68.552	.000
	Residual	40.309	.416	-	-
a. Dependent Variable: Intention to Purchase					
b. Predictors: (Constant), Attitude Towards Online Shopping					

Source: Primary data

This table indicates that the regression model predicts the outcome variable significantly well. Here, $p< 0.0005$, which is less than 0.05, and indicates that, overall, the model applied can statistically significantly predict the outcome variable.

Table-4.2: Coefficient of a model for Attitude

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.903	.315	-	2.865	.005
	Attitude	.746	.090	.643	8.280	.000
a. Dependent Variable: Intention to shop online						

Source: Primary data

The above table shows Coefficients, provides us with information on the predictor variable. It provides the information needed to predict Intention to purchase from Attitude, contributes significantly to the model, we can present the regression equation as:

Intention to purchase = 0.903 + 0.746(Attitude)

The above regression equation of Intention to purchase reveals the independent variables Attitude has a positive impact on Intention to purchase.

5.5 Impact of Desired Consequence on Online Shopping

The Impact of Desired Consequence on Online Shopping is analyzed using linear regression. The following table portrays the model summary.

Table-5: Model summary of factor Desired Consequence

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.712	0.507	0.502	0.588
a. Predictors: (Constant), Desired Consequence				
b. Dependent Variable: Intention to shop online				

Source: Primary data

This table provides the R and R^2 value. The R-value is 0.712, which represents a simple correlation. It indicates a high degree of correlation. The R^2 value indicates 0.507 of the dependent variable, "Intention to Purchase", can be explained by the independent variable, "Desired Consequence ".

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Table-5.1: Analysis of variance Desired Consequence

Model		Sum of Squares	Mean Square	F	Sig.
1	Regression	34.514	34.514	99.679	0.000
	Residual	33.587	0.346	-	-
a. Dependent Variable: Intention to shop online					
b. Predictors: (Constant), Desired Consequence					

Source: Primary data

This table indicates that the regression model predicts the outcome variable significantly well. Here, $p< 0.0005$, which is less than 0.05, and indicates that, overall, the model applied can statistically significantly predict the outcome variable.

Table-5.2: Coefficient of model for Desired Consequence

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.548	0.297	-	1.843	0.068
	Desired Consequence	0.850	0.085	0.712	9.984	0.000
a. Dependent Variable: Intention to shop online						

Source: Primary data

The above table shows Coefficients, provides us with information on the predictor variable. It provides the information needed to predict Intention to purchase from Desired Consequence, contributes significantly to the model, we can present the regression equation as:

Intention to purchase = 0.548 + 0.297(Desired Consequence)

The above regression equation of Intention to purchase reveals the independent variables Desired Consequence has a positive impact on Intention to purchase.

5.6 Impact of Subjective Norms on Customer Intention towards Online Shopping

The Impact of Subjective Norms on Customer Intention towards Online Shopping is analyzed using linear regression. The following table portrays the model summary.

Table-6: Model summary of factor Subjective Norms

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.571	0.327	0.320	0.694
a. Predictors: (Constant), Subjective Norms				
b. Dependent Variable: Intention to shop online				

Source: Primary data

This table provides the R and R^2 value. The R-value is 0.571, which represents a simple correlation. It indicates a high degree of correlation. The R^2 value indicates that only 0.327 of the dependent variable, "Intention to Purchase", can be explained by the independent variable, "Subjective Norms".

Table-6.1: Analysis of variance Subjective Norms

Model		Sum of Squares	Mean Square	F	Sig.
1	Regression	22.701	22.701	47.037	0.000
	Residual	46.814	0.483	-	-
a. Dependent Variable: Intention to shop online					
b. Predictors: (Constant), Subjective Norms					

Source: Primary data

This table indicates that the regression model predicts the outcome variable significantly well. Here, $p< 0.0005$, which is less than 0.05, and indicates that, overall, the model applied can statistically significantly predict the outcome variable.

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Table-6.2: Coefficient of a model for Subjective Norms

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.958	0.372	-	2.573	0.012
	Subjective Norms	0.771	0.112	0.571	6.858	0.000
a. Dependent Variable: Intention to shop online						

Source: Primary data

The above table shows Coefficients, provides us with information on the predictor variable. It provides the information needed to predict Intention to purchase from Subjective Norms, contributes significantly to the model, we can present the regression equation as:

Intention to purchase = 0.958 + 0.771(Subjective Norms)

The above regression equation of Intention to purchase reveals the independent variables Subjective Norms has a positive impact on Intention to purchase.

6. FINDINGS

This part of the paper discusses the finding from the data analysed. The factors considered for the study are Perceptional Behaviour, Attitude, Desired Consequence and Subjective Norms. It is found that all these factors have a significant impact on customers intention to do online shopping. The following are the findings from the study.

In this study male to female gender ratio of the respondents were 18:7. In the case of age group 55% of the respondents are in an age group of 22-28 with the educational qualification of the respondents, 46% of the respondents are Post-Graduate, 39% of the respondents are Graduate, 7% of the respondents are above Post Graduation and 6% of the respondents where High School only 2% of the respondents had no formal education. Ranking of factors shows that 'Perceptional Behavior' is ranked first followed by 'Attitude Towards Online Shopping' and Desired Consequence. The results of regression models prove that all the factors under study namely Perceptional Behaviour, Attitude Towards Online Shopping, Desired Consequence and Subjective Norms influence the customers' intention towards online shopping.

7. SUGGESTIONS

The following are the suggestions based on the findings from the study.

- The online retailers may consider to provide much faster delivery and return policy to its customers.
- The website design can be considered to improve to capture customer attention.
- Online retailers may introduce a new type of methods like dash buttons and quick payment to help their customer to take the nest utilization of technological advancement.
- The services could be improved by the use of AI and Machine Learning to provide customers with almost updation of products.

8. CONCLUSION

In order to study the intention to purchase online, the effort was taken to understand other dimensions of intention for shopping online. A better understanding of the dimensions of the intent to shop online by the customer will greatly benefit its promotion and help in the transition to a society more heavily involved in electronic commerce. The factors considered for the study are Perceptional Behaviour, Attitude Towards Online Shopping, Desired Consequence and Subjective Norms. The presence of all four factors affects customer intention to shop online which is proven by the regression models. It is found that Perceptional Behaviour plays an important role in the customers' intention of online shopping.

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AI IN DIGITAL MARKETING

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ABSTRACT
Artificial intelligence (AI) is the role of changing technology from something useful to something essential. AI is the part of computer science which deals with symbolic, non-algorithmic methods of solving problems. And also it has concern with advanced designing intelligent computer systems. It performs tasks like learning, perception, recognizing communication, translations, decision making. AI has its impact on some areas and some of them are medical, automobile, education, robotics, financial, gaming, entertainment, marketing and many more. AI plays a role in marketing which reduces manual work. The importance of artificial intelligence in marketing brings advance technology and it helps to attract customer in the market. The future goals of artificial intelligence in marketing brings marketers and customers closer in upcoming years. The AI in digital marketing collects and analysis about the user data and solve all the issues of customer as well.

Keywords: Artificial intelligence, tasks performing, impact, digital marketing, future goals

FULL PAPER
SYNOPSIS

- ✓ Introduction
- ✓ AI in marketing
- ✓ Favored position of AI in digital marketing
- ✓ Stumbling block of AI in digital marketing
- ✓ Benefits in AI in digital marketing
- ✓ Future benefits of AI
- ✓ Conclusion

INTRODUCTION

The digital marketing is defined by the usage of internet with the help of advanced technologies which gives more convenience to the peoples. The 1st digital marketing framework has been started from 2000, we have crossed 3 digital framework. We have entered into fourth digital marketing framework. Some of the umbrellas of digital marketing are digital marketing, many social media websites, email marketing, online brochures, search engines, display advertisements, company's websites, basic blog publishing and so on. Digital marketers plays a role brand awareness and lead generation through all the digital channels. The digital marketers concentrate on Key Performance Indicator (KPI) to measure the company's performance among each other. The most important information about the digital marketing is in any industry can able to work for any type of business.

Artificial Intelligence brings advanced changes to the digital and innovated generation. The basic AI is helps in reactive machines, limited memory, theory of mind, and self-awareness. AI in digital marketing brings machine vision, machine languages, natural language processing (NLP), Robotics and etc. The importance of AI in digital marketing, pros and cons of AI, future goals of AI will be explained in this research paper.

1. AI in the field of marketing

AI is the part of computer science technology that helps in creating advanced creation in technology of machines which reduces work for the humans. The activities like recognition speech, learning, planning, problem solving, reasoning, perception, knowledge, ability to manipulate and so on. Robotics is also major field of AI. There are some companies which takes part in Artificial Intelligence, and some of them are salesforce.com (CRM) and Microsoft (MSFT), Hortonworks (HDP) has partnership with IBM.

GOOGLE (**GOOGL)**, Amazon.com **(AMZN)**, IBM and Microsoft **(MSFT)** are pushing into AI-as-a-service.

AI current analysis and strategy in digital marketing

Digital marketing covers all the facets of online marketing which includes content marketing, video marketing, email marketing, search engine marketing, and other digital formats. Artificial intelligence brought up easier

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way for peoples to perform their tasks without spending extra time. AI is becoming an important robust tool in the digital marketing industry. Some of them are

1. Usage of AI-powered chatbots to improve UX.
2. Voice search queries. (For example: google has started its blog on google assistant which has expressed in conversational language, not the typical keywords.)
3. Leverage the power of AI to generate personalized content for marketing.
4. Simple predictive marketing.
5. Personalised user experience.

AI starts shaping the digital marketing industry after entering into the industry. It is automatic selection of a dynamic price optimization. "AI CAN DO THE REST FOR YOU"

2. Favored Position of AI in Digital Marketing

- AI would have a low error rate when compared to the humans, it has incredible precision, accuracy, and speed.
- The user can able to skip the prediction of type, ask, search, and do. The users can easily access assistants and or direct various actions.
- With the help of Artificial Intelligence, the user can able to detect fraud in card-based systems, and may have more advance systems in future.
- Reduces the working of humans instead the usage of avatars or robots were increased.
- The peoples can able to think and work practically and scientifically without any emotional errors.
- The robots or avatars and other electronic machines don't need any rest, sleep, takes break as they don't get tired though they work longer.

3. Stumbling Blocks of AI in Digital Marketing

- The first and foremost one is the EXPENSES which accrued in digital marketing will be higher to repair or build it.
- Though the robotic machines reduce work load and also it gives more advanced knowledge, but the time and cost of producing the robotic machines is higher.
- They can't able to work outside the organisation.
- Machines can easily destruct the process or mission, if put into wrong hand, that is the basic and common fear of users.
- We can able to see the sudden growth of smart phones in the world, this is causing addiction to that and peoples are losing their conscious.
- AI as robots or avatars can be able to supersede humans, enslaving us in the world.

4. Benefits of artificial intelligence in marketing

- 360o = customer view in marketers' vision.
- Can know about the data and reveal maturity of each customer.
- Best business print in accounts.
- Prevent revenue loss.
- Rise in automation technology
- Fair distribution created by machines.
- Voice search
- Quality over quantity

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5. AI in future

In today's world, AI has great impact of life in the form of smart devices, chat box, self-driving cars, online shopping, google assistants and so on. In future, all the technology will increase twice as now.

For example

- Smart phones – while launching they don't have any security lock for mobile. Later they brought up pin, password and etc. Then they brought finger print, now they have launched face recognition.

FUTURE: they can bring voice lock like google assistants.

- Boards in education places: First they were using black board, then they brought up green board, then now the brought smart boards with working on it.
- Self-driving cars to automatic driving cars.
- Food ordering through online, purchasing products will be in more advanced.
- Transparent watches, mobiles may be launch in upcoming years.

CONCLUSION

The digital marketing has a great future in this world, this brings all the advanced technology to the society for the customers convenience. It saves time and easy way to access. The digital marketing used to improve the impact of small brands. The importance of digital marketing is way more than traditional. In the coming years, the digital marketers have to analyse compulsory to know the knowledge about the customers experience.

OUR FUTURE IS DEPEND ON THE DIGITAL MARKETING

Now-a-days, all the companies have more competitors which runs towards the success. They all are using the techniques in digital way.

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GOODS AND SERVICES TAX (GST) AND ITS IMPACT ON SMALL AND MEDIUM ENTERPRISES: A STUDY OF COOCH BEHAR IN WEST BENGAL

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ABSTRACT
The introduction of Goods and Service Tax (GST)in India is considered to be the biggest tax reforms. GST is considered to remove all the glitches of the prior tax system but since its proposal it has received mixed reviews from businesses, authorities and researchers. With such a broad and comprehensive tax base, it has left massive impact on the SMEs of Indian economy. Thus this study focuses on the perceived and actual impact of GST on SMEs particularly in West Bengal. The existing literature shows that the perceived impact is being influenced by three factors-demographic factors, level of knowledge and subjective norms. But the results indicates that level of knowledge, educational level and years of experience has significant relation with the perceived impact whereas the subjective norms and other demographic factors does not hold any influence on the perceived impact. In addition, the study investigates that ease of doing business, average monthly sales, profitability and investment has increased after the GST implementation. The finding provides a sounded implication to the policy makers to come with better policies in order to have a better impact on the SMEs. Moreover the paper also contributes to have a better understanding of GST on businesses.

Keywords: Goods and Services, Small and medium enterprises, perceived impact, JEL Classification: H2, H5

1. INTRODUCTION

GST is the biggest indirect tax reforms in India. It is considered to remove all the glitches of the prior tax system i.e VAT.GST is a well accepted model in many countries. There are basically two different systems followed-unified GST and dual GST. The implementation of GST was first carried out in France in 1954.GST is believed to unify the economy under one particular system which will absorb all different indirect tax into one unified system. Currently GST is followed by 140 countries including India. In India, the GST was about to introduced in April,2010 itself but due to political turmoil, the implementation got postponed to April,2010(Rajkumar,2009).Later under NDA government, the bill got passed both in lower and upper house with slight amendments in GST bill. And finally, Goods and Service Tax was implemented on 1st July, 2017 by the Govt. of India.

In India, dual system of GST is followed where there is CGST and SGST.CGST has replaced all the indirect tax of central government like central excise duty, central custom duty, etc whereas SGST has absorbed all the state-based indirect taxes like state excise duty, state purchase tax, etc,. There is also a third component of GST, that is, IGST which takes into account the interstate transaction of goods and services. The idea of IGST is to ensure that GST is a consumption-based taxation system where the tax should be received by the state who is consuming it instead of producer state. In short, GST is a destination based indirect tax system.GST is based five-tax lab structure. The different GST tax slabs are 0%,5%,12%,18% and 28% where it is applicable to various sector and businesses(Central Board of Indirect Taxes and Customs,2018)

Therefore, GST is a comprehensive tax system where tax is imposed at each stage of production. It ensures to remove the cascading effect which was heavily borne by the producers under VAT system. The exclusiveness of GST comes with the fact that it is an indirect tax system which takes into consideration both the goods and services transactions. That is, GST is an indirect tax system which is levied on the sale of not only goods but also the services and the seller of can claim the amount which he has paid while purchasing that goods and services under the input tax credit system (Rajiv, 2008).

It is stated that under the GST system, the ease of doing business will be increased as the business can claim the extra tax paid by input tax credit system. The tax is levied equally between the involved actors i.e., the manufacturer, the whole seller, the retailer and the consumer, all have to pay their own share of tax of which they are liable to pay to the government through the indirect taxation system. In addition, GST is more transparent system due to its more inclination towards the computerised control mechanism. This in turn enables the producers as well as the consumers to acknowledge the proportion of tax they are paying for every transaction.

With such a new broad and comprehensive tax-base system, it has definitely affected the various sectors of Indian economy may be to different extent. And Small and Medium Enterprises(SMEs) are no exception in this

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regard.GST is a step taken by the Government of India which is assumed to be more simple as compared to the previous taxation system. One can't ignore the fact that positive impacts will be accompanied by the negative impacts on SMEs. SMEs in India are a major sector which is growing in nature where there is frequent entry and exit, thus the GST implementation must have great impacts on this sector. CRISIL publishes a report which states there are 42.50 million SMEs both registered and unregistered in India which is 95% of the total industrial units in the country. SMEs are the key drivers of the growing economy. SMEs contribute 45% of India's total manufacturing output which accounts to employ around 40% of its workforce and it is assumed to contribute to 22% of its India's GDP by 2020(EY ASSOCHAM India,2014).

With the passage of GST Bill in India, it has brought many changes to the taxation system. SMEs are one of those sectors which have felt a huge impact due to implementation of GST.

This paper tends to explain the impact of GST on SMEs particularly the perceived impact and also the actual impact of GST, particularly those SMEs in Cooch Behar, West Bengal.

2. LITERATURE REVIEW

The literature review is arranged thematically on the basis of Perceived Impact and Actual Impact

2.1 Perceived impact

The Theory of Reasoned Action (TRA) is being used vividly by many researchers. Bidin (2014)used this theory and stated that subjective norms and attitude influence the manufacturers' intention to comply with GST. Even Ching, Kasipillai. J and Sarkar.A(2018) used TRA implied that peer-group influence play a major role in facilitating the transition to a new GST system. Shamsuddin.A(2016) took 3 factors into consideration-level of knowledge and subjective norms have significant relationships with perceived impacts of SMEs towards GST. Ling,S.C and Osman.A(2016) empirically investigated that consumers willingness to comply and accept the new indirect tax reform will decrease if GST causes the prices of goods and services to rise. Shamsudin.A (2014) with the help of Mann-Whitney U and Kruskat-Walk Test found that there is a significant relationship between the level of awareness and educational level. Palil and Ibrahim(2011) used ANOVA test and found that respondents were worried about their purchasing power parity which is mainly due less information. They gave their view that government should spread awareness in order to convince consumers. Even the study by Rajni.S and Hussain (2018) found that there is a lack of understanding among traders towards GST.

The literature on GST especially on empirical ground is relative scarce. However, on theoretical aspect, there is ample numbers of study. Emran and Stiglits(2005) argue that GST may be inferior to tariffs in the presence of an informal sector. Thus, the question of whether the GST has enhanced the efficiency of the economy can be answered with an empirical one.

2.2 Actual impact

GST, in itself is a very broad concept which requires an extensive literature review. Sehrawat and Dhanda(2015) presented an overview of GST and focussed on how the idea of GST emerged in India. Vasanthgopal(2011) predicted that GST can provide reduction of 50% of cost on various development areas including SMEs. It is estimated that implementation of GST would reduce the overall prices of all manufacturing sector between 1.22% and 2.53%(Thirteen Finance Commission,2009).On the contrary Zhou and Tam(2013) said that the immediate impact will be lower short-term growth as the household adjust gradually their consumption behaviour. They even have opined that GST has the potential to harm the growth if it is implemented without complementary reform to the public sector spending. On the other hand, White and Dickson(2008) gave their view that relief can be provided to the poor using some effective support tools that GST exemption.GST and SMEs are of great concern for the social science researchers. Verma and Khandelwal(2018) is in a view that government has implemented GST with a long-term vision but it has increased the technology dependency of every enterprise which has become a great challenge for SMEs. In addition, Confederation of Indian Industry(2015) states that the burden of lower threshold will significantly impact the SMEs' working capital, though GST will lead to expansion of MSME market. Moreover, Mawuli(2014) founded that there are some SMEs that register but do not submit the GST returns for their input tax credits. These SMEs carry a GST burden that undermines their viability or expansion. The studies show that there are various areas and questions which are not well understood regarding GST. However the paper 'A Brief Guide To GST For MSMEs' published by FISME and sponsored by SIDBI(2017) presents the basic framework of GST and know how about its stakeholders. It explains every possible queries in Q&A format concerning the MSME in respect of GST.

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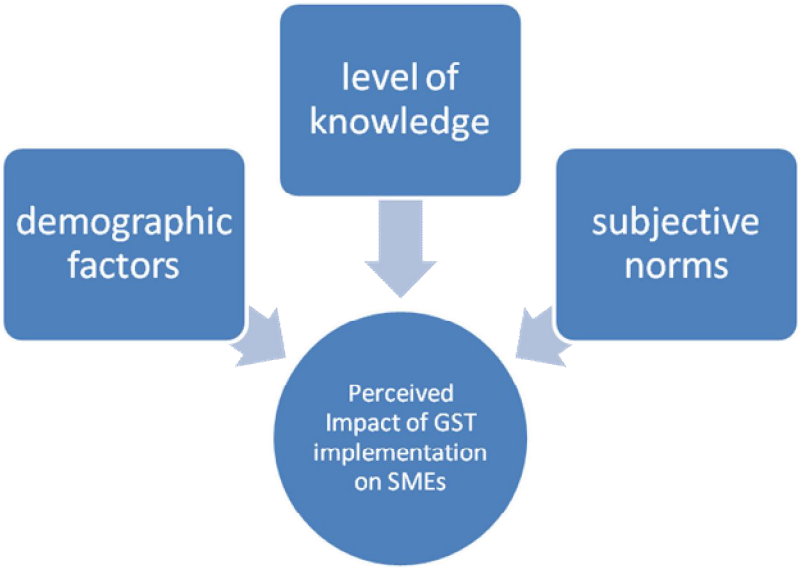
3. THEORETICAL BACKGROUND

The existing literature suggests the most relevant theory relevant to the study is Theory of Reasoned Action (TRA) used in social psychology. The Theory of Reasoned Action has managed to find its scope in economics as well. The Theory of Reasoned Action was propounded by Fishbein and Ajzen in 1975.The model tries to link the actual behaviour with the behavioural intention which in turn is influenced by attitude towards behaviour and subjective norms. The theory can be put into equations as follows:

Behavioural Intention=Attitude +Subjective Norms.

Where, Attitude is determined by beliefs, existing knowledge and power of evaluation. Subjective norms are determined by external factors like family, peers, institutions, etc.

In context of taxation, the Theory of Reasoned Action is not the replica of how it was propounded but a modified version of TRA.TRA basically focuses on the behavioural intention which is a precedent of actual behaviour. But in reference with taxation, firstly it is more important to understand the determining factor of behavioural intention in order to acknowledge the taxpayer's behaviour (Hannon & Violette,1996).Secondly, in context of taxation, it is more important to narrow down the attitude factor. That is, one need to understand the attitude of taxpayers towards the tax system(Bidin.Zainal,Faridahwati and Zainuddin.2014).Particularly in GST, one's attitude can be clearly determined by one's level of knowledge towards this new tax regime. Thus, behavioural intention is replaced by Perceived Impact of GST which is basically the taxpayer's perception. And attitude is modified by the level of knowledge (Shamsuddin.A,2016).Thirdly, demographic factors like years of experience, type of business, educational level has found to have some influence on the perceived impact. Therefore, this study used a modified version of TRA.



(Shamsuddin.A,2016)

- Perceived Impact refers to the perception of the ease of difficulty of the particular effect(Shamsuddin.A,2016).It is related to the factors which leads to a particular impact. Perceived impact in this study describes the perception about GST among SME after it was implemented. The perceived impact can be measured in terms of a)cost of doing business b)business performance c)business competitiveness
- Demographic factors-it includes educational level, years of experience, type of business, years of establishment. These are the unique characteristics of each sample which in turn can have an impact on perceived impact.
- Level of knowledge-It is an important factor as if taxpayers have a better understanding they can take more rational decisions.
- Subjective norms-refers to those external factors which can influence one perception about any particular effect like friends, family, media, political institutions etc,.

4. FOCUS OF THE STUDY

GST is implemented with the intention of achieving long-term benefits and the full benefit is supposed to show in the long-run. But it has been more than 1.5 years of GST and a study of the implication of GST on SMEs is

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much needed.GST in itself is a very new approach in Indian context and there are few empirical analysis been carried out in India in context of GST implementation, especially with respect to SMEs. In the given context this study is an attempt to understand the effect of GST.

5. RESEARCH OBJECTIVE

- To understand the perceived impact of GST among SMEs and to identify the most relevant factor related to the perceived impact.
- To analyse the actual impact of GST on the businesses of SMEs.

6. OPERATIONALISATION

The key constructs of the study are as follows

- Perceived Impact -It is related to the factors which leads to a particular impact. Perceived impact in this study describes the perception about GST among SME after it was implemented. The perceived impact is measured in terms of a)cost of doing business b)business performance c)business competitiveness
- Demographic factors-it includes, type of business, years of establishment, educational level and years of experience of the respondent. These are the unique characteristics of each sample which in turn can have an impact on perceived impact.
- Level of knowledge-It is an important factor as if taxpayers have a better understanding they can take more rational decisions.
- Subjective norms-refers to those external factors which can influence one perception about any particular effect like friends, family, media, political institutions etc,.
- Actual impact- And in order to know the actual impact of GST on their particular business question related to average monthly sales, profitability, production, investment, employment, ease of doing business and ease of tax compliance is being asked with reference to their individual business.

7. HYPOTHESIS

1) H0: There is no significant relationship between the demographic factors and perceived impact of GST on SMEs.

H1: There is a significant relationship between the demographic factors and perceived impact of GST on SMEs.

2) H0: There is no significant relationship between level of knowledge and perceived impact of GST on SMEs.

H2: There is significant relationship between level of knowledge and perceived impact of GST on SMEs.

3) H0: There is no significant relationship between subjective norms and perceived impact of GST on SMEs.

H3: There is a significant relationship between subjective norms and perceived impact of GST on SMEs.

8. METHODS

Type of study

The study uses mixed method i.e., both qualitative and quantitative analysis.Data source is mainly primary data collection using structured questionnaire.

Data source-Primary data collected with the help of structured questionnaire

Sampling method-Purposive sampling

Sampling size-28

According to WBIIDC, there are 72 industrial units with approximately 2400 persons being employed. Out of 72 units, the sample size for the study is 28 which 38% of the total population.

Area of study

The research area chosen is West Bengal. West Bengal has secured first rank in terms of number of SMEs with 56,69,814 units(Economic times,2018). Among all districts of West Bengal, Cooch Behar is the specific area of study. Cooch Behar which was characterised by industrially backward area has shown some massive growth over some past years. It is the centre of industrial units which has the highest number of units among the districts of North Bengal. Cooch Behar is seemed to have grown not only in terms of quantity but also quality of industrial units. It has secured a remarkable place in terms of industrial units in Eastern India. These units contribute largely to the growth of overall SMEs of West Bengal.

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Chakchaka Growth Centre is the heart of Industrial activities in the Cooch Behar district. The respondents were identified from Chakchaka Growth Centre unit and from them more samples were identified and interviewed during structured questionnaire. There is no specific industry chosen but the prominent firms in the area are being preferred. The area is known to have businesses like jute industry, ricemills, food processing and others.

Tools of analysis-Descriptive statistics and Spearman's correlation.
The study uses descriptive analysis in order to have a comprehensive understanding about the impact of GST on SMEs. In order to know the association between variables correlation analysis was used in the study. The questionnaire was in the form of likert scale which indicates a qualitative study. Moreover the demographic factors are also qualitative in nature. Thus Spearman's correlation was the most preferred form of correlation analysis in the study. The Spearman' correlation analysis helps to know whether there is an association between variables.

To analyse the data likert scale is being used with five point scale where 1=strongly disagree/nil,2=disagree/very little,3=neither agree or disagree,4=agree/almost & 5=strongly agree/full.

9. RESULTS

A)Perceived impact of GST on SMEs

Perceived impact (IMP) is measured in terms of demographic factors, level of knowledge (LOK) and subjective norms(SN) are the independent variables.The descriptive statistics for the perceived impact is given in Table 1.

Table-1: Descriptive statistics of Perceived Impact

LOK		***SN***	***IMP***
Mean	3.420635	2.514285714	3.607143
Standard Error	0.09362	0.07009334	0.113795
Median	3.555556	2.6	3.666667
Mode	3.888889	2.6	4
Standard Deviation	0.49539	0.370899094	0.602147
Sample Variance	0.245411	0.137566138	0.362581
Kurtosis	-0.15316	0.233207246	0.666623
Skewness	-0.9571	0.310137145	0.489606
Range	1.777778	1.6	2.666667
Minimum	2.333333	1.8	2.333333
Maximum	4.111111	3.4	5
Sum	95.77778	70.4	101
Count	28	28	28

Source: Field Survey, 2018

It can be inferred from Table 1 the mean of IMP is 3.607143 which depicts that SMEs have positive perception regarding GST. The mean of LOK is greater than that of SN which indicates that people have better level of knowledge as compared to the subjective norm factors. The greater median of LOK is also more than SN which also supports the fact that the level of knowledge has greater weightage than that of subjective norms.

Correlation

Test of correlation is done in order to know the association between the variables. The following table shows the correlation between dependent variable (IMP) and independent variable (LOK&SN).

Table-2:Spearman'scorrelation between IMP and LOK&SN.

Spearman's correlation		**IMP**	**SN**	**LOK**
IMP	Correlation coefficient	1.000	-.217	.663**
	Sig(2-tailed)	.	.268	.000
	N	28	28	28
SN	Correlation coefficient	-.217	1.000	-.188
	Sig(2-tailed)	.268	.	.337
	N	28	28	28
LOK	Correlation coefficient	**.663****	-.188	1.000
	Sig(2-tailed)	.000	.337	.
	N	28	28	28

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**Correlation significant at 0.01 level (2-tailed)
Source: Field Survey, 2018

Table 2 shows the correlation co-efficient between IMP and LOK is 0.663 that is, there is positive correlation between IMP and LOK.As the p-value<0.01, we reject our null hypothesis and tend to accept our alternative hypothesis. Therefore the correlation between IMP and LOK is positively significant at 1% level of significance. This is consistent with the study of Mohani(2003) which demonstrates that level of knowledge provides better understanding regarding GST to the taxpayers. On the other hand, the correlation coefficient between IMP and SN is -.217 that is, they are seemed to have a negative correlation. And as p-value>0.01,it is inferred that there is no significant correlation between IMP and SN at 1% level of significance. This finding is in contrast to the study of Shamsuddin(2016) where subjective norms was significant.Table 3 depicts the correlation between IMP and demographic factors:

Table-3: Spearman's Correlation between IMP and demographic factors

Spearman's correlation		IMP	Education	Years of establishment	Years of experience	Type of business	No. of employees
IMP	Correlation coefficient	1.000	.865**	.290	.764**	.070	-.207
	Sig(2-tailed)	.	.000	.135	.000	.724	.290
	N	28	28	28	28	28	28
Education	Correlation coefficient	**.865****	1.000	.463*	.863**	.210	-.165
	Sig(2-tailed)	0.000	.	.013	.000	.283	.405
	N	28	28	28	28	28	28
Years of establishment	Correlation coefficient	.290	.463*	1.000	.313	.198	.024
	Sig(2-tailed)	.135	.013	.	.105	.313	.903
	N	28	28	28	28	28	28
Years of experience	Correlation coefficient	**.764****	.863**	.313	1.000	.118	-.072
	Sig(2-tailed)	.000	.000	.105	.	.550	.715
	N	28	28	28	28	28	28
Type of business	Correlation coefficient	.070	.210	.198	.118	1.000	.152
	Sig(2-tailed)	.724	.283	.313	.550	.	.440
	N	28	28	28	28	28	28
No. of employees	Correlation coefficient	-.207	-.164	.024	-.072	.152	1.000
	Sig(2-tailed)	.290	.405	.903	.715	.440	.
	N	28	28	28	28	28	28

**.Correlation significant at 0.01 level of significance (2-tailed)
*.Correlation significant at 0.05 level of significance(2-tailed)
Source: Field Survey, 2018

Table 3 shows the correlation between IMP and the demographic factors like education, years of establishment, years of experience, type of business and number of employees. It shows that the correlation between IMP and years of experience is significant at 1% as the p-value<0.01 i.e., both these variables show significant association with the perceived impact. This is in line with the finding of Amanuddin(2014) who stated that education plays a significant role in building the perception with respect to the implementation of GST. However the correlation between IMP and education shows a strong positive correlation of 0.865 and with level

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of experience is 0.764 which shows a contradiction with the results of Shamsuddin(2016) in which he found a weak correlation between IMP and education and no significant association between IMP and years of experience.

B) ActualImpact of GST on SME business

The actual impact of GST on business has been measured in terms of average monthly sales, profitability, production, investment, employment and ease of doing business. Table 4 shows the actual impact of GST on businesses.

Table-4: Actual impact of GST on SME businesses.

	Increased	Decreased	Neutral
Average monthly sales	57%	14%	29%
Profitability	57%	32%	11%
Production	43%	32%	25%
Investment	54%	36%	10%
Employment	28%	11%	61%
Ease of doing business	75%	18%	7%
Tax compliance	61%	39%	0%

Source: Field Survey,2018

From Table 4 it can be inferred that after the GST implantation, there is an improvement in the average monthly sales, profitability, investment and ease of doing business. The highest impact has been in terms ease of doing business that is,75% felt that the ease of doing business has actually increased. On the other hand, it can be seen that the impact on employment is very low and the production level is seen to have increased but to an extent of only 43%.However the tax compliance has brought some astonishment by its figures. It is seen that only 39% of the businesses have felt the reduction of tax compliance, rest are in a view that it has rather increased.

10. SUMMARY AND CONCLUSION

The study is done to understand the perceived and actual impact of GST among SMEs in Cooch Behar. The findings indicates that SMEs are optimistic about GST .The study suggest that out of the three independent variables, the level of knowledge has the strongest correlation with the perceived impact. It means the level of knowledge serves as an important factor in order to influence the perception of the taxpayers and help them making more rational choice. However, the subjective norms seems to have no correlation with the perceived impact. And lastly out of five demographic factors only education and years of experience has an association with the perceived impact. This broad objective suggest that thepositivity regarding GST is increased with higher level of knowledge, higher education and higher experience in the business in SMEs particularly in Cooch Behar, West Bengal. The study also dealt with the actual impact of GST which indicates that ease of doing business, average monthly sales, profitability and investment has shown improvements with GST implementation in SME business. But production, employment and tax compliance has not met the expectations of SMEs in Cooch Behar.

11. POLICY IMPLICATIONS

The following policy implications can be drawn from the findings.

There are few policy implications which the study suggests. Some of them are as follows.
i) Government should organise more awareness program as this will help to increase the level of knowledge among taxpayers. The everyday changes in GST may leave the SMEs in confusion thus awareness program is much needed on a regular basis. Even a slight change in the tax regime can have large impact on the SME business thus they should be updated from time to time.

ii) There should be more surveys carried by the government so as to know the condition of SMEs after GST is implemented.

iii) Proper measures should be taken to reduce the cost of tax compliance.

LIMITATION OF THE STUDY

One of the major limitations of the study was the time constraint.With the given time constraint only a small number of SMEs were taken into account.Secondly,there might be other factors which affected the perceived impact among SMEs with respect to GST but only three identified variables were being taken into account.Moreover the data collection procedure was not an easy process.The owners were not comfortable in sharing their answers.Inaddition,the ongoing changes in every two days with respect to GST made the whole

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process bit difficult.Lastly it was restricted to the specific area that is Coochbehar and the results might vary with the other sample area.Thus it is recommended to carry similar studies in other part of India as well so as to have a more generalised conclusion.

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FAKE NEWS: NO BRAND IS SAFE, BOLLYWOOD TOO

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ABSTRACT
Gone are the days when we used to believe each & every news or piece of information appearing in media, electronic or print both. With the arrival of social media almost anyone can be a news creator and anyone can be a reporter. What is tough now is to distinguish between real news (a fact) and news which is fake. Fake News, a term popularized by U.S. President Donald Trump, was titled "Word of the Year" by Collins dictionary in year 2017 due to its extensive use around the world and this paper tries to explore it's after effects and how a brand/organization of any field can be affected by a story about it which is not true & is baseless. Even Hindi films are not safe; a controversy based on rumors can severely hamper its box office performance.

Keywords: Fake News, Social media, Collins dictionary etc.

INTRODUCTION
Until recently (say 5-6 years ago), the favourite mode of news and information consumption were newspapers and the news channels. However, in the current times (say 2019), on being asked about the source of news and information, it isn't surprising to hear Twitter being quoted as a reliable & favourable medium. Twitter, Facebook, WhatsApp and other online social media channels are what we look towards to stay updated and informed about the current affairs. We sometimes forget that any social media channel consists majorly of user generated content. This content is created with intent to garner maximum visibility, likes, comments, etc. Quite a few brands resort to unethical techniques to push their content just to make their campaign go viral. A popular technique in this regard is to create 'fake news' for instant popularity or click baits for instant gratification. This practice has led quite a few sources of fake news to mushroom. These fake news items, when compared to genuine news are a lot tougher to verify or trace back to their origin.

Fake news can be referred to as a type of yellow journalism or propaganda that includes deliberate misinformation or hoaxes spread through traditional print and electronic news media or online social media. It is written, posted or published with the intention to mislead in order to damage an organization, agency, entity, or person, and/or gain financially or politically, often with sensational, exaggerated and/or patently false headlines that grab eyeballs easily. Fake news can also be referred to as news articles that are intentionally and verifiably false, and may have the ability to mislead readers. Social media is the lifeblood or breeding ground of fake news. It facilitates publishers to disseminate viral fake news to masses in most efficient & effective manner. In the era of Twitter, Facebook, WhatsApp anyone can be a content generator or reporter and a picture on social media may carry the same or more weight than extensively researched articles. This kind of news item often employs eye-catching headlines or entirely fabricated news stories to increase readership, online sharing, internet click revenue and circulation in case of newspapers. Fake news items are promoted in such a fashion that they appear to be spread by others. Fake stories distributed are structured to influence or manipulate readers' opinions on a certain topic towards certain objectives. For example, by manipulating the balance of how a particular topic is reported (whether that concerns politics, foreign affairs, or something more commercial), the views on that topic can be altered. This can be done either with inaccurate information or with accurate ones twisted to favor a particular thought or side. And while many of us have become good at spotting the fakes, there are far too many who are not. There is a serious need to fight this plague.

India is now both Facebook's and WhatsApp's one of the largest consumer base. Over 241 million Indians are on Facebook while WhatsApp has over 200 million Indian users. From photo shopped photos and doctored videos to false and incendiary claims about particular communities or religious groups, sensationalist predictions of natural calamities, death rumors, and bogus medical advice can be the content of a fake news story. Even the IT cell of Bhartiya Janata Party, India's ruling political party, under Prime Minister Narendra Modi, has long been widely alleged to participate in the fake news game.

RECENT EXAMPLES OF FAKE NEWS IN INDIA
1. **New currency notes have a GPS chip to detect black money**

When PM Narendra Modi announced the withdrawal of old Rs 1,000 and Rs 500 notes on November 8, 2016 then in less than an hour rumours started circulating on WhatsApp of a nano geo-positioning system (GPS) tracking device embedded in the new Rs 2,000 currency notes. This chip, the messages said, would alert

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regulatory authorities if black money was hoarded. The nano-GPS chip does not need any power source, the forward said, according to this Firstpost report. It further added that it just acts as a signal reflector. When a Satellite sends a signal requesting location the NGC (Next Generation Satellite Antenna Controller) reflects back the signal from the location, giving precise location coordinates, and the serial number of the currency is sent back to the satellite, this way every chip-embedded currency can be easily tracked & located even if it is kept up to 120 meters below ground level. The NGC can't be tampered with or removed without damaging the currency note. Mobile currency-scanner apps emerged claiming the app can scan new notes and have these authenticated by Reserve Bank of India, according to this Firstpost report.

RBI had clarified the new notes contained security features such as latent images, colored strip security threads, watermarks etc, but they did not have a chip installed, according to The Hindu report.

2. **SpiceJet's Ajay Singh to take control of NDTV(#NDTVSOLD)**

There was hash tag #NDTVSOLD misleading all the users in September 2017 that SpiceJet co-founder owner Ajay Singh was going to hold controlling stake of 40% while Prannoy and Radhika Roy (Founders) will hold 20% in NDTV. NDTV Limited had to explain Bombay Stock Exchange that the promoters of the company had not entered into any agreement for sale of their stake in the Company to any person. This was in response to a clarification sought by the Bombay Stock Exchange relating to a report in The Indian Express reporting that "SpiceJet's Ajay Singh set to take control of NDTV" on September 23, 2017. When asked about the NDTV deal a SpiceJet official said, "It's absolutely false and baseless."

NDTV

September 22, 2017

BSE Limited,
25th Floor, Phiroze Jeejeebhoy Towers,
Dalal Street,
Mumbai-400001

Kind Attn.: Remedios D'costa, Deputy Manager, On-line Surveillance

Dear Remedios,

With reference to your letter seeking clarification on the news item appearing on www.moneycontrol.com, we wish to inform you that the promoters of the Company have not entered into any agreement for sale of their stake in the Company to any person.

The Company is mindful of its obligations under Clause 30 of the Listing Regulations and shall promptly intimate you of any event required which is required to be disclosed under the said Regulations.

We hope that the above clarifies the matter raised in your aforesaid letter.

Thanking you,

Yours faithfully,

For New Delhi Television Limited

Navneet Raghuvanshi
Company Secretary

NEW DELHI TELEVISION LTD. 207, Okhla Industrial Estate-III NEW DELHI-20

new delhi television limited, 207, okhla industrial estate ph-III, new delhi - 110 020, india. tel: (91-11) 4157 7777, 2644 6666 fax: 2923 1740 www.ndtv.com
e-mail: corporate@ndtv.com, CIN: L92111DL1988PLC033099

3. Padmavat (i) Row

When it comes to fake news then even Bollywood films are not untouched. The Karni Sena(Shri Rajput Karni Sena)claimed the film Padmavat(original title Padmavati changed to Padmavat after protest) distorted facts and hurt their sentiments and pride — the queen shown dancing without a *ghoonghat* (veil), allegations of an

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intimate dream scene between her and the villain of the piece, Mughal emperor Allauddin Khilji. Sanjay Leela Bhansali had clarified that the two characters didn't feature together even in one scene. He said on record that Rajputs would be proud of the film after watching but his voice was suppressed by a fake news or rumour which claimed there was an intimate dream sequence in the film between Padmavati & Allauddin Khilji. A few weeks ago from the scheduled release Karni Sena called for a ban on the film, threatened to burn down cinemas and called a countrywide bandh on December 1, the film's original date of release. Rajasthan, Uttar Pradesh, Madhya Pradesh, Gujarat and Punjab decided to hold the screening of the film, even as it was waiting for certification from the Central Board of Film Certification (CBFC).

The row over 'Padmaavat' took an unexpected turn with one of the fringe Karni Sena groups voicing its support for the release, claiming that the courage and sacrifice of Rajputs have been showcased beautifully in the film. A letter signed by Shri Rashtriya Rajput Karni Sena's national vice-president Yogendra Singh Katar and Sena's Maharashtra coordinator Jeevan Singh was handed over to concerned production house (Bhansali Production), claiming that they didn't have objection over the release.

In February 2018, a letter signed by Shri Rashtriya Rajput Karni Sena's national vice-president Yogendra Singh Katar and Sena's Maharashtra coordinator Jeevan Singh was handed over to Bhansali production, claiming that they did not have any objection over screening the movie now. "As advised by the organization president, Sukhdev Singh Gogamedi, we watched the film. The film is based on and dedicated to the great Rani Padmini. Since it has nothing objectionable, we are withdrawing our protest and assuring you co-operation and support for the movie's screening in Rajasthan, Gujarat and Madhya Pradesh," the letter said.

Katar said they saw the movie and did not find anything wrong or defamatory in the movie. So, they decided to withdraw their agitation against the movie and would allow its release in Gujarat and Rajasthan.

Opposition by Rajputs and failure of government in various states of the country, prompting many exhibitors to refrain from screening the film for fear of damage to their properties, definitely took its toll on the film's business. Although it got released in Madhya Pradesh after a few months after the protest was withdrawn but it missed on the business generated due to its initial buzz i.e. when the film is hot in the market, public is ready to pay higher admission rates as well. Despite court orders in favour of release and assurance of police protection Rs. 150 budget film Padmavat did not release in Rajasthan, the state in which major part of the film is shot. At least Rs. 20-30 crores revenue was lost only from Rajasthan.

WHO GENERATES FAKE NEWS

Fake news articles originate on several types of websites. For example, some sites are started entirely to print intentionally fabricated and misleading stories. Separate investigations by BuzzFeed and the Guardian explained that more than 100 websites posting fake news were run by teenagers in the small town of Veles, Macedonia. A website endingthefed.com, that was responsible for four of the ten most popular misleading news stories on Facebook, was run by a 24-year-old man from Romania. A US company called Disinfomedia is the promoter of many fake news sites, including nationalreport.net, USAToday.com.co, and WashingtonPost.com.co. Its owner claims to employ between 20 and 25 writers. Another US-based producer, Paul Horner, ran a successful fake news site called National Report for years before the election. Among his most widely circulated stories was a 2013 report that President Obama used his own money to keep open a Muslim museum during the shutdown of federal government. When elections were on Horner generated a large number of mainly pro-Trump stories. In India, two of the most active fake news sites are www.hindutva.info & www.postcard.news. The names of these sites are often carefully selected to resemble those of legitimate news organizations. These sites print a mix between factual articles, often with a partisan slant, along with some false articles. Websites supplying fake stories (news) tend to be short-lived generally. These fake stories can be shared n number of times via social media i.e. Twitter, Facebook & WhatsApp etc.

Producers of fake news are firms with three distinguishing characteristics. First, they make no investment for accurate reporting and fact checking, so their underlying signals are uncorrelated with the true state.

Second, they do not attempt to build a long-term reputation for quality or credibility but rather maximize the short term profits from attracting clicks in an initial period. But loosely speaking, we can imagine that such organizations attract demand because consumers cannot distinguish them from higher-quality media outlets, and also because their reports are designed to deliver psychological utility to consumers on either the left or right of the political spectrum.

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PURPOSE OF SPREADING FAKE NEWS

First is pecuniary: news articles that go viral on social media have the power to generate significant advertising revenue when users click to the original site. This appears to have been the main motivation for most of the producers whose identities have been revealed. The teenagers in Veles, for example, produced stories favoring both President Trump and Bill Clinton that earned them millions of dollars. Paul Horner generated pro-Trump stories for profit, despite claiming to be personally opposed to him.

The second motivation is ideological. Some fake news providers seek to advance candidates they favor. The Romanian man who ran endingthefed.com, for example, claims that he started the site mainly to help Donald Trump's campaign. Third, to favour own brand and/or tarnish a rival brand. Brands approach popular bloggers to review their products for the benefit of prospective consumers and to make it more visible & attractive in media. This too has turned into a money-making arrangement, so the reviews may be falsified or biased. This is of particular importance as a huge number of consumers make their buying decisions based on the reviews available online. The consumers too are getting used to this now. Extensive brand promotions or PR activities actually is beginning to affect them negatively as they perceive a trickery on the brand's part. Some of the consumers can, in fact, call this bluff and initiate negative campaigns for these brands thus tarnishing the brand reputation putting a question mark on their credibility & authenticity. On the other hand, rivalry among brands or individuals or groups can be a reason to start a fake news campaign bringing some negative reputation to the victim.

REASONS FOR FAKE NEWS GAINING PROMINENCE

1. No regulator in social media platform as we have in Print or Television media.
2. Internet has given access to everyone to post whatever they want and thus create a trend in fake news spreading like wildfire.
3. Everyone is in hurry to Like/Comment/Share rather than checking the authenticity of the news.

IMPACT

- Even if the news turns out to be fake, its impact is real and potentially far-reaching.
- #NDTVSOLD & fake news regarding NDTV in The Indian Express (September 23, 2017) and moneycontrol.com (September 22, 2017) created a panic among the actual stake holders and its regular viewers. Share of New Delhi Television (BSE 0.44 %) hit upper circuit of Rs 53.10 on 22-09-2017 after a media report said that founder and owner of SpiceJet(BSE -0.91 %) Ajay Singh has picked up majority stake in the news channel. NDTV stocks advanced 4.94 % to Rs 53.10, while SpiceJet was trading 1.92% down at Rs 142.75 around 9.30 am (IST), eventually closing Friday's (September 22, 2017) session at Rs 53.10, up 4.94 per cent.
- The abundance of fake stories during the U.S. presidential elections raised concerns about their serious impact on election results.
- Fake news sparks panic, raise conflicts and contentions among society.

SUGGESTIONS (SOLUTION)

Facts have a way of coming out to the public. It is imperative that you stay upfront about your mistakes as it further strengthens your credibility. In case any fake news makes way to the media, it is always a good idea to clarify your position succinctly. The other way is to build a sound goodwill for your brand/organization, rendering the negative hype ineffective. The fake news is often created by fringe media publications. It is important to know where your consumers are going to get their information. Building a healthy relationship with reputed media houses and publications gives you an opportunity to defend yourself. Some of the following measures can be beneficial:

1. Media houses and social media companies must take a moral responsibility to ensure that they do not misrepresent the facts to their audiences**.**
2. People should gather news and information from verified news outlets and sources.
3. If a brand is being tarnished via fake news then the brand must give clarification to the authorities and general public as soon as possible. The victim must win the trust back.
4. Fact checking websites like www.altnews.com, www.smhoaxlayer.com & www. storyful.com should be promoted and people should log in to these websites to check what they have found that a certain story in media is fake or genuine.

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5. Effective and modern legislations should be brought to effectively tackle fake news in modern platforms of Internet and social media.
6. To implement the laws, a strong monitoring system, technological and skilled human resources must be put in place.
7. Social media and news organizations must regulate their content through rigorous internal editorial and advertising standards.
8. Awareness campaigns on legal and social consequences of fake news.
9. Investing in fact-checking tools and processes that prevent the spread of hate and fake news on the internet
10. It's the people, the general public, who have to take responsibility of caring, loving and developing society and stop spreading fake news, apart from the media houses.

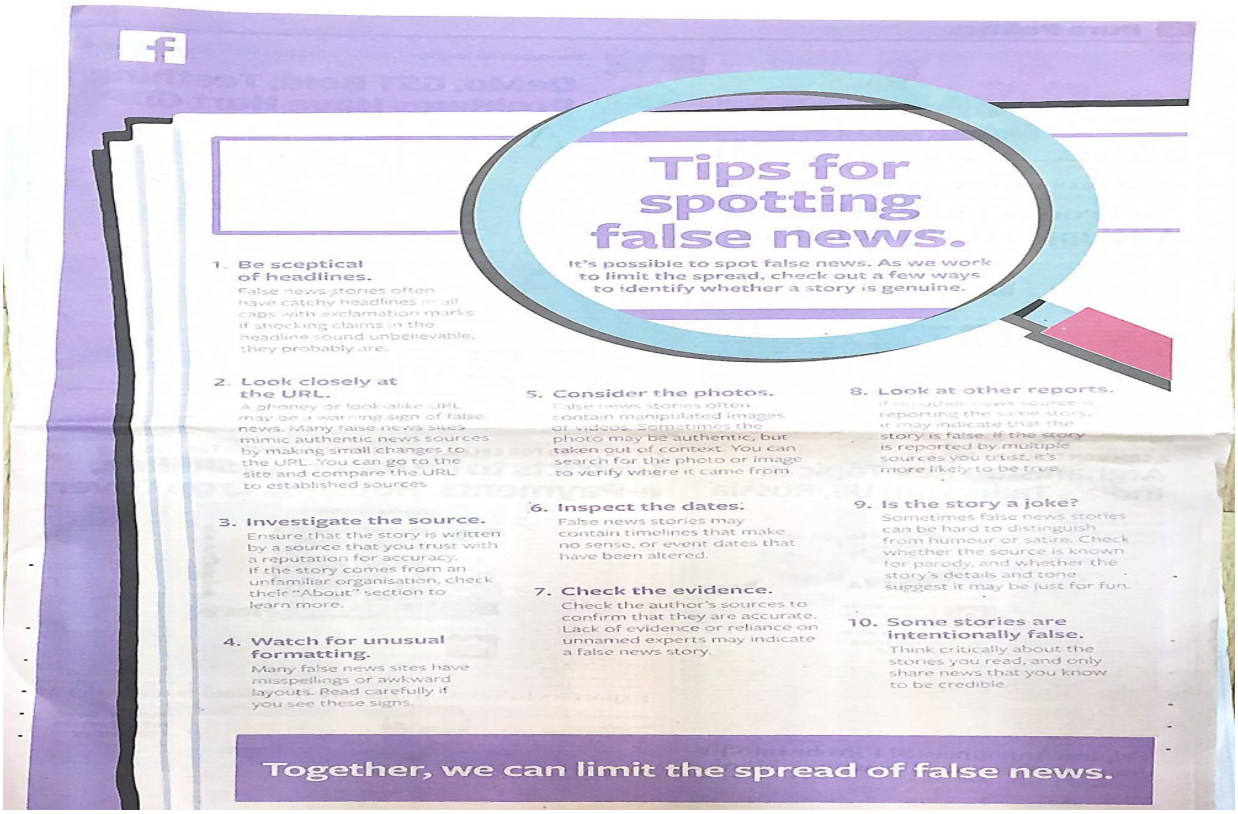

Image courtesy: The Times of India (New Delhi edition)

CONCLUSION

When there are so many television channels, established, upcoming, struggling and on verge of closing, so many newspapers looking for attention and moreover, the biggest supporter of fake news, the social media it's always logical to be take your time for fact checking rather than instantly believing on any sensational news headline. Every Breaking News may not be factual, and on the other hand some facts may not reach you. Yes, even that is also a reality. Credibility of mainstream media has definitely gone down in recent past. Not only products, services or companies but Hindi Films too are not untouched, a Rs. 150 crores budget film Padmavat lost at least Rs. 40-50 crores at the box office due to the controversy created by fake news. So, use your brain, have patience, don't get panicked if you come across something sensational. Remember, news is knowledge, but that news has to be genuine, based on facts.

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CHANGING ROLE OF HUMAN RESOURCE MANAGEMENT FROM THE PERSPECTIVE OF GIG ECONOMY

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ABSTRACT

The new generation "Digital identity" employee's expectations from the organization surpasses, in all levels to step up the career ladder with emphasis to improve the productivity. The millennials are living in a fast-paced virtual world driven by enormous information in hand. In the current scenario, the digital workforce should be dealt with a different Human Capital Strategy. The trend is the transformational management of 'humanware' with the advent of new technology at all levels. The Organizations' worldwide are incorporating all measures to optimize their workforce output with appropriate employee engagement methods. There is a wide difference in the management of HR of former times related to the present scenario and it necessitate to implement the modern HR tools. The challenges of work force management include talent acquisition, recruitment, data management including security of the data of the employees and customers, performance management etc. These labor-intensive tasks are complex for the Human Resource Officers globally to solve especially when the workforce multitudes as the business expands. The new technology shifts in the business ecosystem to manage the digital employee includes the Block Chain technology, data sciences-driven talent assessment, HR analytics, SaaS HR technology, Biohacking, HR Chatbots, HR accounting etc.

The emergence of technologies such as Artificial Intelligence, Automation, Robotics, Digitalization paves the way for the transition of the HR management practices of the firms to scale up the processes to new approach. The implementation of technological landscape of cloud based HCM and ERP boosted the efficiency of the HR professionals as to cope up with the profuse reports generated in the organizations worldwide with the cloud technology for operational efficiency. This study analyzes how the Digital technology fits into organizations with focus on the transition of the HR functions to integrate digitization.

Keywords: Opportunities with Industry 4.0, HRM technology, Blockchain, Gig Economy, Digitisation, Talent acquisition for Industry 4.0

INDUSTRY 4.0 & GLOBALIZED WORLD

The introduction of Industry 4.0 by the German Federal Government is to develop a strong economy of the future projects with incorporation of high-tech strategy to be the innovative leader. The Industry 4.0 will affect many areas, most remarkably in workers' education and skills from the Human Resource view point with emphasis on Technical assistance as to support humans for solving urgent problems on short notice. Though the cyber-physical communication has been in progress, the interaction with humans will still be the focus of the new work time models.

The deployment of digital technologies had revolutionized the techniques in which the organizations functions worldwide. The clutch of Industry 4.0 embracing the digital world necessitates the intervention of HR technologies to perform superior for the better ROI on employee engagement. HCM, Human capital management in the cloud space has been opted by many organizations for quick personnel data accessibility and workforce management.

BLOCK CHAIN AS AN EFFECTIVE HRM TECHNOLOGICAL SUPPORT

The 'Block chain' is a decentralized technology, by design, that lets digital information and data to be safely distributed without being stored in a single central database, thus allowing the talent access in a more profound way. The introduction of Blockchain by many firms in recruitment, payroll, benefits administration, streamlining contracts, training and development, employee retention is helping the HR professionals to overcome the struggles, still it is not catching up as due to the lack of awareness and it is in an infant stage. This blockchain technology supports the companies to have access to precise candidates which will reduce the dependence on external agencies such as LinkedIn, Job portals etc. This is slowly been introduced in Indian Companies, especially for shaping up the future to manage the human resources by overcoming the challenges which they face today. The employers should be made aware of the potential of new blockchain solutions for HR processes and should analyze the benefits which compensate the cost of adoption of the new technology. Both employee and employer will be in control of their data and information in the block-chain enabled job market. The blockchain will leverage the business operations especially in the process of storing voluminous records of data which will support the HR functions such as managing workforce productivity, digital feedback

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analytics and engagement tools. For this large amount of database management and data mining, technologies are required for which the blockchain contributes significantly.

RECRUITMENT IN THE DIGITAL WORLD

E-Recruitment through social media sites and the job sites including the company websites reduced the geographical barrier of an individual to apply for a vacancy in the global job market. The employee records verification, (academic credits including certifications training courses attended, employment records including professional achievements) monitoring skill development and learning are cumbersome activities to perform in organizations with more workforce required in the HR department. The innovative trends in the performance management and employee engagement with the support of effective HR tools are enabling the business to scale up to newer heights with digitization.

Presently, the HR software's are developed with tools to support innumerable workforce reports which includes reports on payroll, staffing, performance appraisal, Training & Development etc. The Applicant tracking system ease out the time-consuming task of recruitment. This software platform also offers to create custom reports which can be generated on a routine basis. The report data can be presented in charts and graphs that can be printed and downloaded in other formats. Sage Business Cloud People had been set up for driving the workforce across cultures with multiple languages, currencies, and country-specific holidays which helps HR manager to manage global workforces.

TECHNOLOGY'S INFLUENCE ON HR FUNCTIONS

As the world of work is changing, recruiters need to adapt strategies and skills to meet expediently the challenge of resources especially of niche skill sets with relevant industry experience for specialist roles. This new challenge has to depend on the emerging technology-based practices to search for the talent pools in today's world of shifting demographics. There is a paradigm shift to venture in to new fields for recruitment as the workforce demand switched from the traditional space to virtual space. The talent hunt for expertise is normally filled with consultancy-based approach on the requirement which is able to implement with the emergence of the app-based web platforms. The upsurge in the 'micro-learning platforms' like LinkedIn Learning, Udacity, Udemy and Coursera had augmented the HR technology in recruitment and talent hunt. Even the small, medium and large firms embrace the technology to streamline human resource management which depends on the extend of usage. The large companies have adopted Web Based technologies which depends on the large volume of data to handle which integrates other functional departments as well. There are numerous firms which offer customized HRIS and HRMS software application packages to ease out the voluminous HR work of data collection, storage, retrieval and reports generation. The other companies which enable the smooth adaption of ERP in to their systems had confirmed that they could save 25% of their work schedule as to concentrate on strategic approach of Human resource practices. The Companies worldwide which have achieved advanced levels of digitization, companies want to invest about 5% of their revenue annually on digitization for business excellence.

"Just in time" skills for the Gig economy

The Gig economy is an open market with opportunities given to employees for short period, based on tasks which they can contribute to their best and these tasks are done based on the requirements by the employers'. The concept was originated due to unemployed market where the citizens opted for tasks for generation of revenue for short-term engagements. The organizations incline toward this sort of workforce as they need not be obliged to stretch out advantages which will undoubtedly give for a perpetual worker dependent on specific directions which order for such payments. The organizations grade to enlist specialists and furthermore slant towards employee leasing, independent contractors to satisfy the occupations which can be on an impromptu or on a possibility premise. This kind of framework, challenges the conventional economy of all-day specialists who search for permanent jobs in the organizations.

The world is drifting towards the Gig trend and India also stepping towards this new trend of hiring resources especially as consultants or Outsourcing firms. The new platforms to crowdsource small jobs and the expertise depends on the Gig economy as it is for task-based requirement. The demerits of the Gig economy are that it creates roadblock towards career development and offers *Challenges for a lifetime* career.

The work from home flexibility which many employees are otherwise enjoying in the current organizational settings had paved way for the Gig economy nature of jobs. This helps the firms to cut costs on the compensation and also to use their services more effectively. The Gig economy definitely use technology which will improve time and cost efficiency. (source: report of Team lease). This trend of hiring temporary employees by the employers leads to the availability of resources in cost effective which will hamper the employee's career

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growth as majority of them cannot move to the next line in the career ladder due to the short-term nature of the Gig nature as it is time and need based.

FACTORS CONTRIBUTING TOWARDS GIG ECONOMY

The employers also have a wider range of work-ready candidates pool to choose from as they don't have to hire someone based on the constraints of to choose any employee from nearby location. Furthermore, PCs have created to the point that they can replace the occupations individuals recently held. Most occasions, businesses can't stand to procure full-time employees, so they enlist low profile or transient workers to deal with busier occasions or explicit tasks. In favor of the employer, individuals frequently discover they have to move around or take numerous situations to manage the cost of the way of life they need. People also tend to change careers many times throughout their lives, so the gig economy is the reflection of this occurring on a large scale.

SAAS FOR HUMAN RESOURCES MANAGEMENT

Saas for Human Resources stands for the HR software distributed in a cloud computing environment. The Saas ERP Applications consists of all HR components which provides a wide-ranging aspects of HR activity, from applicant tracking to performance management. The finest Saas HRMS (Human Resource Management Systems) are extremely customizable, with more flexible approach and with minimum cost and includes the state-of -the art elements of the HR processes. The advantage for HR employees are that it offers various Saas HR applications which are really beneficial for the HR staff to function in the HR department. The Saas HRM has the leverage of real time access of employee information which enables to manage more efficiently than the traditional model. This Cloud based computing model of delivery provides many benefits over On-premises HRM software solutions and provides a major cost cutting edge with the self-service web interfaces. It enhances the efficiency of the HR staff as many processes of data inputs can be automated through self-service web interfaces.

HUMAN – TECHNOLOGY ASSOCIATIONS IN THE DIGITAL AGE – BIOHACKING

Biohacking denotes to the application of IT hacks to biological systems – most prominently, the human body, especially by implanting microchips to your body to monitor your actions and thereby to enhance the efficiency. This implantation to change the genetic makeup is raising alarm

As the tools of technology can completely drive the society with a wider gap of inequality and conflict.

CONCLUSION

In the digitized world, as it is likely that our identity is in distress, which includes our privacy, that will reflect on all the businesses and communications, which will have an impact on the human resource of the organizations. Hence, all the stakeholders should discuss new ways on innovative governance which will be the future of technology and society. The Technology should ease out the complex functions in a more systematic method to improve the overall organizational efficiency.

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THE FEASIBILITY OF SOCIAL MEDIA MARKETING FOR MARKETERS AND ARTISTS AND ITS IMPACT ON CONSUMERS

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ABSTRACT
The purpose of the study was to identify a relationship between social media marketing through artists and consumer buying behaviour, if any. The focus was on feasibility to marketers and the medium i.e. social media artists, its impact on consumers. Data were collected through questionnaires and quantitative as well as descriptive analysis was applied. It was found that a significant relationship exists between a social media personality endorsing a product and the consumers buying the same. There is potential for marketers to explore this medium as currently it is beneficial to all parties involved, as seen in this and previous research.

INTRODUCTION
In the recent trends seen in marketing, with respect to India, we observe a twin- development; growth of entrepreneurs and start-ups on one hand, and growth of local art forms, small artists and various social media platforms that help a talent reach millions. This has led to a development of social media marketing, not just through direct advertisements and use of big data, but also **indirect marketing** wherein companies collaborate with small celebrities and reach millions, to considerable effect. The viability and whether these methods prove strategically effective are, however, questionable.

The popularity of such marketing, currently, is commendable. In recent times, the need for mobile phones by each and every person has led to access to social media applications like Facebook, Twitter, Instagram, WhatsApp and so on; through which brands are advertised and/or endorsed in the most creative ways. Studying this will be helpful for businesses to assess their gain and exploit the consumers and customers. For instance, consumers can be the children who use the products bought by their parents, who will be customers who purchase the products.

A marketer will want to know the feasibility of social media marketing to increase their productivity and market value through lowered costs. A social media artist will want to attract more consumers through their high following in their channels and endorse the marketers' brands. These social media artists impact consumers directly or indirectly, in their purchasing decisions, frequency of product usage and brand loyalty aspects.

Hence the very foundation of this research was established from all these perspectives.

LITERATURE REVIEW
A whirlwind of digitalisation, networking and internet use in the last decade has affected all spheres of life. The buzzword in the midst of all this, social media, is also an ideal ground to reach millions at once. Product placement, aggressive advertising and even non-profit marketing is done through social media, in fields such as medicine (G Radu, 2017). This new platform has certain key factors, such as emotional connect, time management, extreme caution and constant change. It is a fast game, with low cost, surprisingly high results and clearly high (reputational) risk (ARCA, 2012).

Compared to online marketing and digital marketing, using a social media artist places a person to connect with between a consumer and a marketer. Consumers tend to trust them more than celebrity endorsers as social media is more personal, authentic and relatable. It acts more like word-of-mouth marketing, in fact (Maoyan, 2014) . Social media use by an average person is almost addictive, and can easily drive behaviour. With the right mix of loyalty and incentive, almost any product can be sold to a consumer off social media (Shenbagamurthy, 2016).

From a social media person's point of view, this type of endorsement can go both ways, similar to the marketer. On one hand, their skills can be combined with the marketers financing to achieve a win-win situation for both. In fact, it might help them with more followers and the marketer with brand loyalty (Lisette De Vries, 2012). So far, this developing marketing idea seems to be mostly beneficial to most parties involved. The key is right management and control of the vast reach social media marketing provides.

Dangers are also part of this approach such as exploitation of artists through unpaid deals, magnified impacts of minor issues and even loss of investment in technology if an idea fails to take off (Hajli, 2014). The exact feasibility to a marketer, how marketers see this medium, benefits to the social media artists and overall impact on an average consumer are yet to be discussed. The occurrence of this phenomenon in the Indian context and

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its implications are also unknown, so far. However, the fact remains that social media is being heavily used and will be a game-changer in the near future. (Glucksman, 2017)

STATEMENT OF THE PROBLEM

The existing literature shows studies across the world, spread over multiple social media platforms. There is a research gap when it comes to India and newer, emerging social media platforms such as Instagram and Youtube. Also, a research considering multiple perspectives to the same concept has not been made. This research addressed the feasibility of social media marketing to marketers and artists, and its impact on consumers.

OBJECTIVES

1. To document the motivational factors that drives social media artists to involve in indirect marketing of products through their social media space
2. To assess the perceived effectiveness and efficiency of indirect social media marketing through social media influencers for the marketer
3. To analyse the relationship of such indirect marketing with the consumer purchase behaviour

RESEARCH METHODOLOGY

Data was collected through three questionnaires. One questionnaire was circulated among social media artists. Another questionnaire was distributed to analyse consumer responses. A third questionnaire was sent across to marketers. This was done to identify flow of information and management of such marketing. All data sources were primary. Also, convenient sampling was followed.

The analysis of data was done through quantitative analysis for consumer data namely Chi square through CrossTabs using IBM-SPSS software. Descriptive analysis was adopted for marketer and social media artist responses.

SCOPE OF THE STUDY

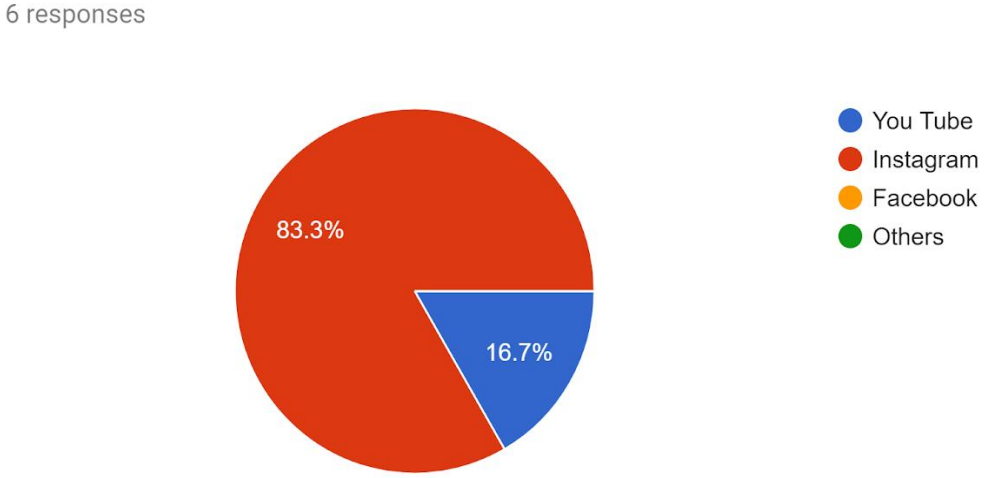
The consumer and social media artist respondents for this study are mainly between age group of 15-30 years, across income levels. The three companies contacted have a global, national and local reach respectively, and an age span of 25 to 100 +years. The responses were predominantly from Bangalore. The results of this study are applicable to all parties the consumer product industry considering the growing use of social media as a viable platform for marketing.

ANALYSIS AND FINDINGS

I) Feasibility to social media Artists

The questionnaire was sent to artists who have popularity at both regional and national level. The total responses retrieved were six, out of which the responses were received to the extent of 50% from male and 50% female social media artists. It was found that most of them (nearly 33.33%) are in the age of 21 years and rest of them are evenly spread across the age bracket of 19-29 years. The other findings were:-

❖ 83.35 of them were found to use **Instagram** as their medium of communication to endorse the products to the consumers and the rest were using **Youtube.** It is interesting to note that none of the artists used mediums like Facebook or Twitter which were considered to be one of the most important tool of social media marketing in the studies or research conducted during the time 2010-2015.



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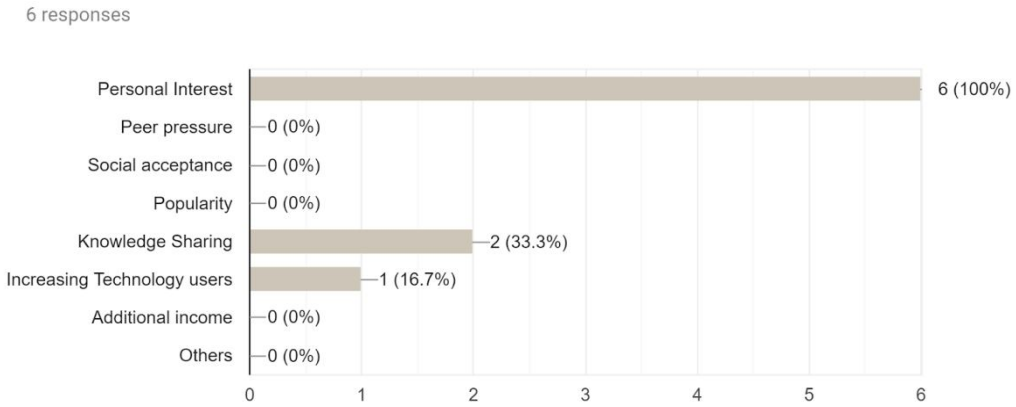
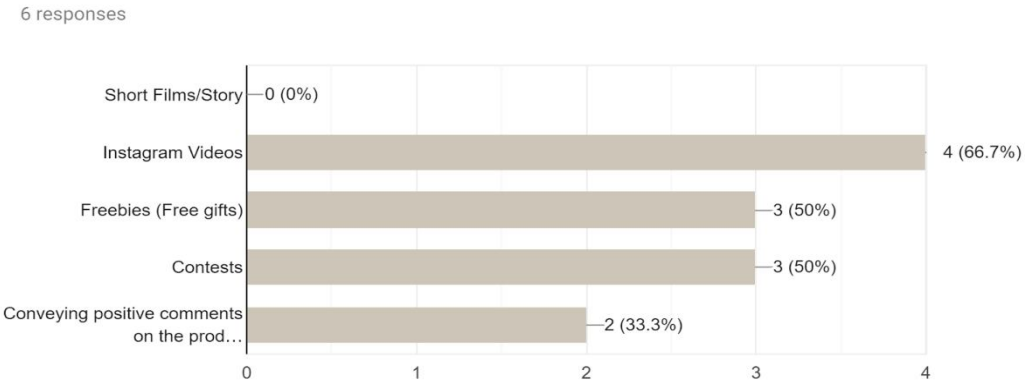
- The study revealed that the field of education is not related to their current job of being a social media artist. It revealed their interest of being an entrepreneur rather than working for a monotonous job.
- The motivational factors that has driven the artists into the social media handle were predominantly out of their personal interest and the other accompanying factors were the increasing technology users and for the purpose of knowledge sharing.



- Though all the media artists from whom the responses were recorded were artists who involved in the promotion of products, it was surprisingly shown that almost 66.7% of them were not paid for such endorsements.
- It further shows that 66% of such artists have signed a contract with the company for such endorsement, specifically those who were paid.
- The most popular form of promotional technique that are used by these artists are Instagram videos, giving free gifts, conducting contests and conveying positive comments about the product. This creates a curiosity amongst the consumers to use the product.



- It was found that these artists further act as a point of contact to communicate with the marketers for future purchase decisions.
- Before endorsing such products, almost 83% of the population sample agreed that they were given complete information about the product.
- The study revealed that the consumers do not unsubscribe the social media artist's channel even if they are dissatisfied with the products that were endorsed by them.
- It can be concluded that such product promotions, which are taken up by artists do not super cede or divert them from the original content ideas in social media space, rather the promotion becomes a part of their usual media content.

II) Feasibility to marketers

The marketers contacted provide a range of products, mainly consumer goods such as accessories and lifestyle products. All three marketers, namely Swatch, Titan and Al Sham used social media marketing. Previously, they followed traditional means such as hoardings, TV commercials, magazines, newspapers and radio advertisements. The source of identifying social media marketing as a medium was equally spread across competitors, internal research, external reports and consumer feedback.

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The findings were

- ❖ The marketers mostly target high income youngsters between the age group of 15-28 years.
- ❖ The unanimous factor for selecting a social media artist is followers
- ❖ Incentives are mostly discount codes and subscriber giveaways
- ❖ All contracts with such artists were for a year or less
- ❖ Cost of marketing is comparatively lower
- ❖ Surprisingly, marketers see this as a long term strategy and not a temporary plan
- ❖ Objectives of these marketers for using social media marketing are split up between market expansion, product launches, cost cutting and customer relationship management.

III) Impact on the consumers

Table 1.0 gives a perspective on division of people following/not following social media artists and purchase/non purchase of products influenced by them. Invalid responses were due to respondents not having ever used a product endorsed by a social media artist.

Table 1.0

Following Social media Celebrities/Artists * Influenced purchase of the product(s) that have been promoted by social media artists Crosstabulation					
		Influenced purchase of the product(s) that have been promoted by social media artists			Total
		Yes	No	Invalid	
Following Social media Celebrities/Artists	Yes	11	30	34	75
	No	5	11	64	80
Total		16	41	98	155

There were totally 155 respondents for this part of the analysis. A quantitative analysis using IBM-SPSS software was conducted. Keeping 'following a social media artist' as an independent variable, the following findings were arrived at.

Table 1.1

Dependent Variable	Cross Tabs- Pearson Chi Square Significance
Influenced Product Purchase	0.000
Use of such Product	0.000

Since the P value is 000 for Pearson Chi Square, there is a significant relationship between social media following and influenced purchase as well as social media following and use of products promoted by social media artists.

An open ended question was provided to get deeper understanding on such influence on social media marketing and has been summarised as follows - People follow them for the reason that they are likable for their skills, talents and acting. One of the respondents feels that some celebrities as well as industrialists are genuine and will not indulge in unethical promotions. They also feel that these artists have a higher credibility in terms of their following which are in large numbers. Another respondent, from a tech-savvy perspective, feels that unboxing videos provide better reference when purchasing an electronic gadget; which social media artists often put up as posts. They also believe that the products advertised by them are the products that they prefer, so they perceive it to be of good quality.

CONCLUSION

As far as the social media artists are concerned, it is found to be feasible for them to endorse such products offered by the company, especially the paid artists. But as far as India is concerned, the process is still found to be in its nascent stage of development. This could probably be a profitable avenue for budding entrepreneurs to try and explore social media marketing. Both global and domestic marketers consider this type of product endorsement through social media artists as an effective long term strategy and find it to be a cost effective measure of promotion.

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From the consumer front, it is evident from the findings that there is a substantial relationship between the social media following and the influence that the artists have on consumers' buying decisions. There is a relationship between social media following and the usage of products that are endorsed by social media artists.

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A SURVEY ON CYBER SECURITY AWARENESS AMONGST THE SELECTED COLLEGE STUDENTS IN KARNATAKA

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ABSTRACT

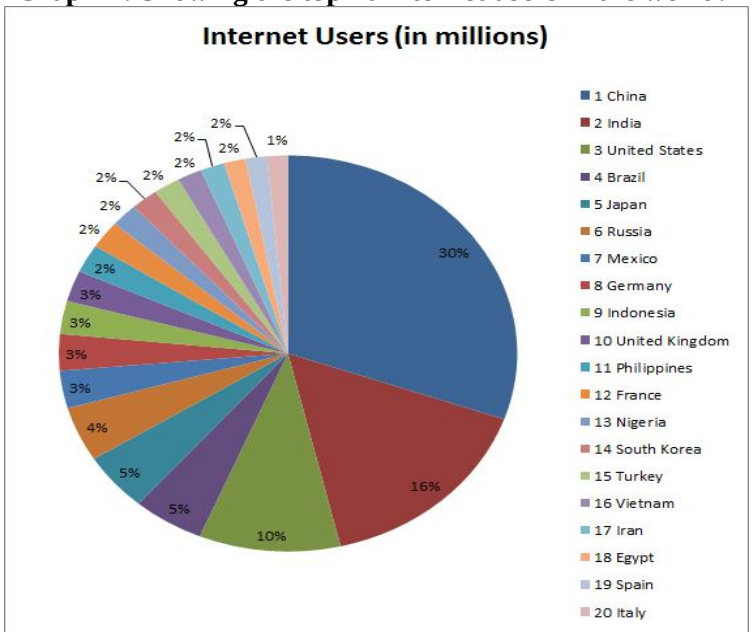
Healthy growth of a country is being driven by innovation & newer technologies but the safeguard to ensure safety of services and products is seeing slow progress at present there is an imperative need to conduit the gap, the aim of the study is to create awareness of cyber security amongst the ongoing college students in selected colleges of Karnataka by following various threats in security among the users of internet. In recent times cybercrime is an enormous challenge in all areas including identity & access management, identity & governance, administration & data loss prevention. To prevent from the victim of cybercrime everyone must know about their own security & safety measures to be adapted. A well-structured opinion poll assessment method has been applied to analyze to what extent the students are aware in the range of cyber-security. This survey will be piloted in the major towns of Karnataka by focusing on innumerable security related threats such as E-mail, ransom ware, social engineering, malware, viruses, digital payments, phishing, fake advertisement, windows popup and other few new attacks in the internet this investigation mainly tries to examine the college students consciousness about the various security issues & challenges involved, some suggestions are set forth to overcome these issues.

Keywords: E-mail, ransomware,social engineering, malware, viruses, digital payments, phishing, fake advertisement ,popup windows, BYOD, cyber security awareness, cyber security in education, student internet usage.

1. INTRODUCTION

"Cyber firms loses around 10.3 million to cyber theft", "china accuses US for fabricating facts with hacking charges", US customers sue Marriott after data breach affected 500 million guests", "startup step in to plug gaps in India cyber security shield" is being One of the furthermost challenging essentials of cyber security is the persistently sprouting nature of security risks. According to Forbes magazine, the worldwide cyber security market has been projected to spread around to 170 billion by 2020. This speedy growth of market is being operated by an assortment of knowledge & technology drifts, comprising the offensive of creativity with ever-evolving security chucks, which are identical BYOD besides IOT, theses all changes are due to the speedy embracing based on computing with cloud applications & additional assignments, which are outspreading need for security which are beyond the old-fashioned data center and tough facts & figures fortification directives, such as European Union's General Data Protection Regulation (EUGDPR) and the National Institute of Security Technology (NIST) Framework. Below graph reveals the top 20 countries internet users:-

Graph-1: Showing the top 20 internet users in the world:-



(Source:https://www.worldatlas.com/articles/the-20-countries-with-the-most-internet-users.html)

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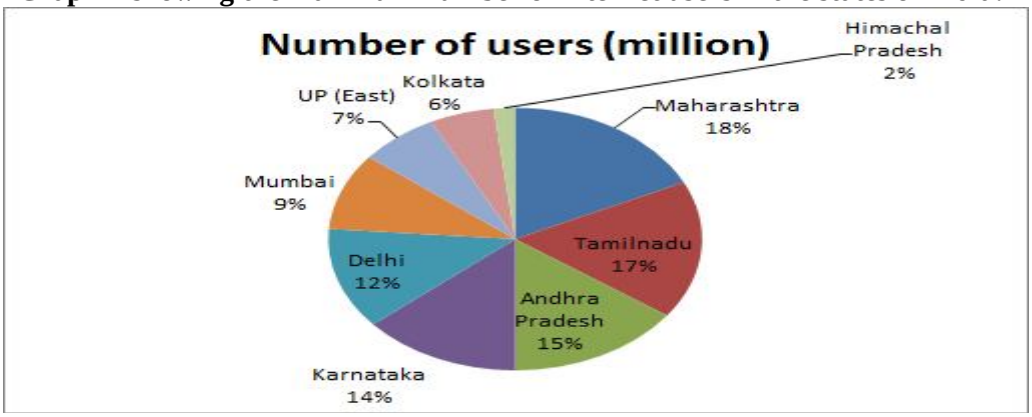
Now a day protecting the integrity and confidentiality of the information in the system of complex network is important and challenging most of the people who are connected to these networks are students. Curiosity and negative mindset of the students may be the primary reasons for students to be mainly involved in cyber-crimes. Many a time's students are ignorant or few times are un-aware of the repercussions of cyber-crime. Girls are the utmost found sufferers of cyber-crime. Many survey reports that many academies, institutions and university do not show the cyber-attacks proportions with many of hacking attempts on to the information systems. Meanwhile major sufferers are those who are using social networking sites and bank account details which are at the higher risk, at present most of the educational institution/schools and colleges are facing risk of losing valued intellectual property and their research documents such as patents awarded to the professors and students and also the personal information about the pupils ,staff, faculty members because of the sophisticated occurrence of hacking attacks on the institutions on higher education the need for the day is to create an awareness for cyber security which has to be increased heavily at present.

The NCRB released its recent annual crime related information bulletin according to it report, there were nearly 12,317 cybercrime cases in 2016 which has been recorded in various situations This records around 6% rise as compared to the year 2015.UP state, with 2,639 cases has been reported as the highest number of cases related to cybercrime around 21.4% of the total cases that were booked, followed by Maharashtra state with 19.3% or 2,380 cases and our state Karnataka with 8.9% or nearly 1,101 cases in the year 2016.

Today internet technology has been used extensively for all aspects in everyone's day to day life. People are started to connect with their peer groups, friends & family establish business and they bank online (digital payments) and many other services which involves like virtual health care and education, video call etc. so the connection with the technology have been increased .however being constantly connecting origins increasing risks which all of us are facing threats related to cyber against dangerous set-up and budget as individuals cyber security risk can directly generate pressures to investers, individuality and especially for privacy. To report on the issues of cyber-security there is a urgent need for some awareness programme to educate the internet users of current generations. Now a days computers and internet technology has become critical resources in everyday work and studies. This survey/study will help to analyze cyber security awareness amongst the college students in Karnataka and tries to enlighten students to be prepared for the upcoming challenges that are prevalent in cyber security.

Graph-2 showing the maximum number of internet users in the states of India:-



(https://www.thehindubusinessline.com/info-tech/maharashtra-tops-list-of-internet-subscribers-in-india/article9367201.ece)

2. OBJECTIVES OF THE STUDY

- To study the significance of cyber security and its consequence in the current scenario.
- To study the level of awareness about the cyber-security amongst the college students in Karnataka.
- To study the causes and effect of cyber-security to the emerging nations like India.
- To study the recent trend in cyber-security.

3. METHODOLOGY

Survey method has been used to collect the feedback from the respondents through online questionnaire method. Here a set of well-structured questions are prepared & distributed to a huge number of participants. The participants are being selected using samples of targeted population for this purpose. The following sequence reveals the architecture of the survey research.

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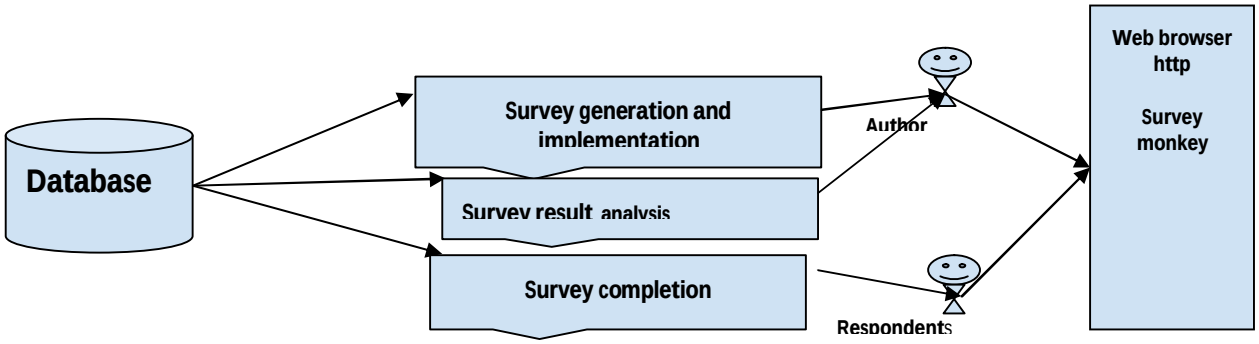

The populations are the entire cluster of college students those who are fascinated to examine. The sample is a subcategory of inhabitants that it is the authentic number of investigation. In my survey i have aimed to conduct survey overall Karnataka as population and have fixed sample size dimensions of 500 students in five major towns that are randomly taken each city having 100 students. The following table shows the population and the sample size of my survey research.

Table-1: Number of sample size

CITIES	SAMPLE SIZE (500 STUDENTS)
BANGALORE	100
MYSORE	100
SHIMOGA	100
DHARWAD	100
TUMKUR	100

Basically the Survey questions are being framed based on various parameters related to the cyber security issues like E-mail, Trojan horse, phishing, forged advertisement, popup windows, online payments and other related attacks using the internet technologies. These survey questions has been sent to the respondents through Google doc's online survey to the students. The survey questions covers on user ID's, passwords, firewall, malicious protection, computer viruses, worms, Trojans, remote access, phishing, patching, popup windows and fake advertisement.

3.1 Subsequent key points are used to frame the awareness on user ID & password

- ❏ Periodical change in password.
- ❏ Reusing of previous passwords.
- ❏ Using the same identical password for each of their accounts.
- ❏ Sharing the password's with everyone.
- ❏ If their computer attempts to save their passwords by showing click on no or yes.
- ❏ Using a password that is found in dictionary.
- ❏ If they think their password has been compromised then taking further steps to recover it.
- ❏ Making the password as lengthy as possible and strong like minimum eight or more than eight characters, inclusion of special characters, numbers, using all case letters etc.

3.2 To recognize the consciousness towards the home computer safety the subsequent key elements or points that is to be considered while framing the survey questions

- ❖ Close down or Shut down, logging off or locking the computer system with special passwords when the users are far away from their PC.
- ❖ If the users have modem making sure it does not automatically accept incoming calls.
- ❖ If it's too necessary for the user he can remove his personal, confidential or sensitive information or data before giving the PC which is to be repaired or whenever it is to be replaced.

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3.3 To scrutinize the attentiveness about the installation of firewall, antivirus software and updating for the same i have outlined some of the questions cited below

➔ Whenever the users are linked up to a nearby network whether they store files in folders set aside for them.

➔ Is data are stored to CD's or pen drives regularly while the system is not connected to a network.

➔ Always the users should ensure that the backups reflect the most up-to-date information by replication of the data on a consistent basis after creation of necessary changes.

➔ Saving the original installation CD's to use as backup for their PC software.

3.4 at home whenever disconnecting PC system from the internet connection and making a full virus scan give virus free system. The following key factors have been considered to frame questions to identify the awareness on virus

➢ Always Ensure and keep checking that weather antivirus software are active enough at least every week or set it to take for programmed updates by significant the new and fast scattering worms and viruses are released every day.

➢ But before employing or using any software in your PC system from any source always you should check for viruses with a current virus scanner that is available if students do not have a virus scanner installed in their PC and they should call some organizations representatives dealing with antiviruses.

➢ Considering the extensions such as .bat, .cmd,.exe,.pif,.scr,.or,.zip concluded with a contented purifying software.

➢ Reliant on the magnitudanal infection it needs to re-install the OS.

4. LIMITATIONS OF THE STUDY

- Time has been one of the biggest constraints for conducting the study.
- The opinion or responses that are shared or given by the fellow respondents may be based on bias.
- Since study is confined to only few selected towns of Karnataka henceforth the outcome of the research cannot be the reflection of the entire population of Karnataka.

5. SURVEY RESULTS AND ANALYSIS

Questionnaires are framed for the purpose of conducting the survey which is a combination of open ended questions with MCQ & surrounding substance questions thru specific demographic questions. The Surrounding substance questions which are mounted taking choices like strongly agree, tend to agree, strongly disagree and tend to disagree. All the questions are posted on Google doc and sent as an E-mail link to the selected students in each category amount to 5 major cities in Karnataka .finally survey is conducted with the sample population size of 500 respondents (students) around Karnataka to analyze the awareness of cyber security amongst the selected towns of college students in Karnataka.

The Data authentication tries to guarantee that the online inspection (survey) questions are being fully accomplished and presented the reliable data. In this process i have almost tried to eliminate the queries that are not responded by most defendants in the data analysis as this would consequence in bias. The reply from every single college pupils (students) has been recorded in Google doc distinctly for each & every cities.

Table-2: indicating the number of retorts received from each of the cities is shown below:-

CITIES	NUMBER OF RESPONSES
BANGALORE	82
MYSORE	73
SHIMOGA	76
DHARWAD	88
TUMKUR	71

Out of 500 links that was sent only 390 responses were received and some of the entries were incomplete. The completed forms are considered in table 3.

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Table-3: Number of complete responses

CITIES	NUMBER OF RESPONSES
BANGALORE	80
MYSORE	71
SHIMOGA	75
DHARWAD	87
TUMKUR	66

Out of 379 complete retorts received male and female student replies are separated & the percentage (%) of awareness among them was analyzed. The numbers of male and female student respondent's details are highlighted in the table 4. The survey/study was conducted on consideration of awareness regarding to the cyber-attacks such as virus attack from strange bases, password attacks, message phishing,E-mail and threats for broadcasting their personal details in the social networking sites based on the responses received from the college students between two groups t-test is calculated, the t- value is 3.51812 and p-value is .003934 the result is significant at $p<.05$.

Table-4: Represents the number of male and female student respondents

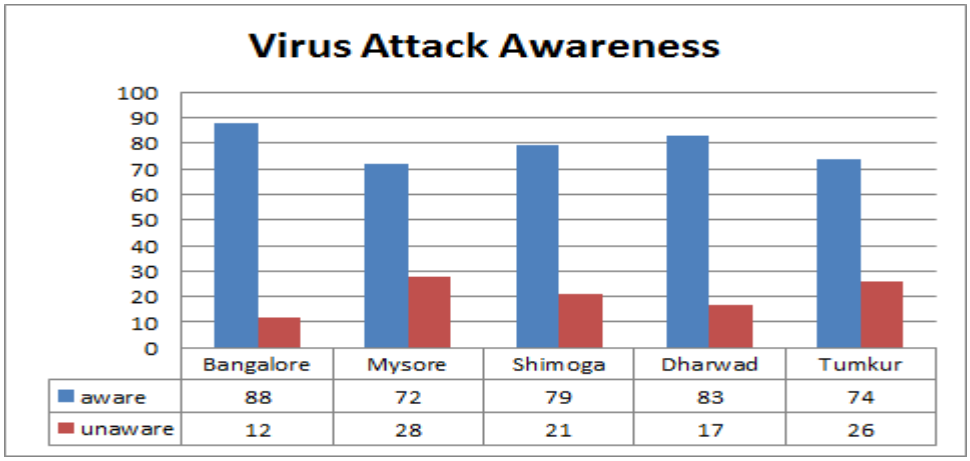
CITIES	MALE	FEMALE
BANGALORE	49	21
MYSORE	41	30
SHIMOGA	39	36
DHARWAD	52	35
TUMKUR	37	29

6. TEST FACTS

6.1 virus attack

From the responses received from the survey we can conclude that more than 70% of the students from the cities that were selected for the survey more were sensible about the basis of virus attacks and many were also using anti-virus software or linux podiums to defend their system from infections to virus attack, Whereas other Remaining students were not using or they might be unaware of any antivirus and were the main victims directly or indirectly for virus attack.

11% among the respondents were using various antivirus but they were not updating the antivirus software. More than 97% of the respondents don't know the source or from where the viruses were entering the systems. The students who were using antivirus and updating them at regular intervals were considered to be aware or they were having an idea about the virus attack and students those who were not using antivirus software or updating it at regular intervals were considered to be unaware about virus attack. The graphical clarification of virus attack awareness among different cities has been represented below.



6.2 phishing

Phishing in E-mail/ message has been taken into account virtually nearly about 60% of the students from almost all the cities where study was conducted we have received phishing E-mail/message in any form but the percentage (%) of persons receiving phishing E-mail/messages is varying between the cities number of students answered to those E-mails/messages without knowing the source is given below.

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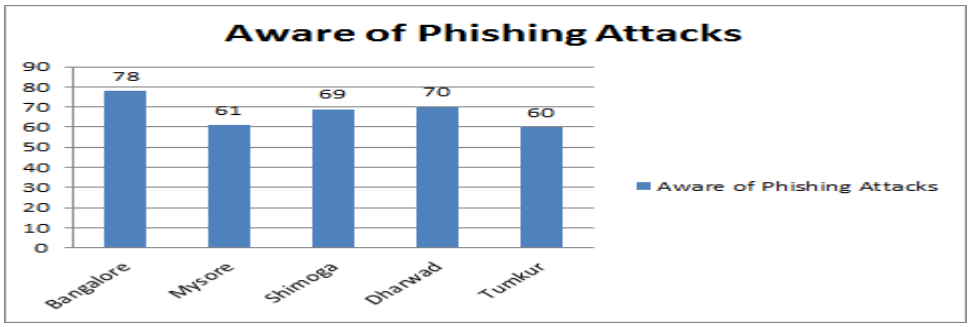
Table-5: showing the number of students responded phishing Electronic mails/messages

CITIES	Number of students
BANGALORE	3
MYSORE	1
SHIMOGA	2
DHARWAD	4
TUMKUR	2

Very less students responded to the Electronic mails/messages and those students claimed that they responded because for identifying the purpose of looking to what extent these mails will take & added that they all know that it is fake E-mails/messages only. Other students simply marked that Electronic mails/messages are spam or simply ignored those Electronic mails /messages. Only 10 students from overall 379 claimed that they will complain about this phishing Electronic mails /messages are shown in figure 3. So in case of phishing attack all the students are aware in all the cities.



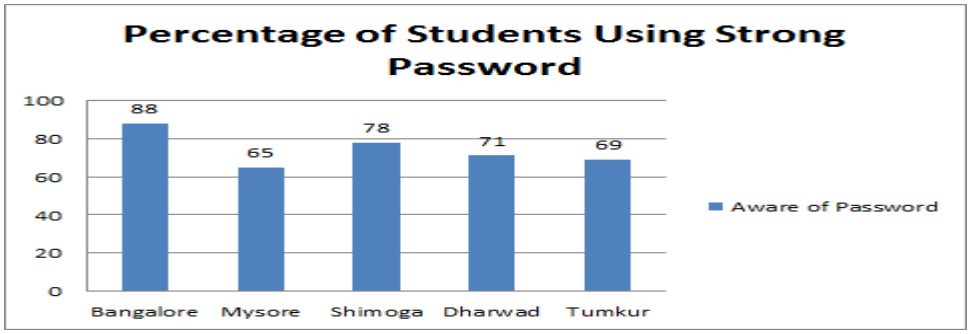
6.3 password strength

Password strength is the most important one to safeguard the data/information henceforth it depends upon the combination of alphanumeric characters, special characters, length of password and also changing the password often & often. The following table shows the responses received is been shown in table 6.

Table-6: Password strength

CITIES	Changing the password very frequently	Using alpha numeric characters and special characters	Password strength having more than 8 characters
BANGALORE	25	10	61
MYSORE	18	7	52
SHIMOGA	19	12	58
DHARWAD	22	18	66
TUMKUR	15	11	55

From the above table it portrays that the Students considering at least one of all these 3 categories for protecting their password strength which are considered to be more aware about the misuse or hacking of passwords and the percentage (%) of awareness among cities are represented in figure 6.



6.4 misuse of social network

Identity theft or personal identity and publishing span or wrongful information about a person is common & also the major threats in social networks. Almost All students have taken part in the survey on social networks. So the survey is conducted to identify the amount of personal data each students publishing in the social network sites. The complete details about the responses received are shown in table 7.

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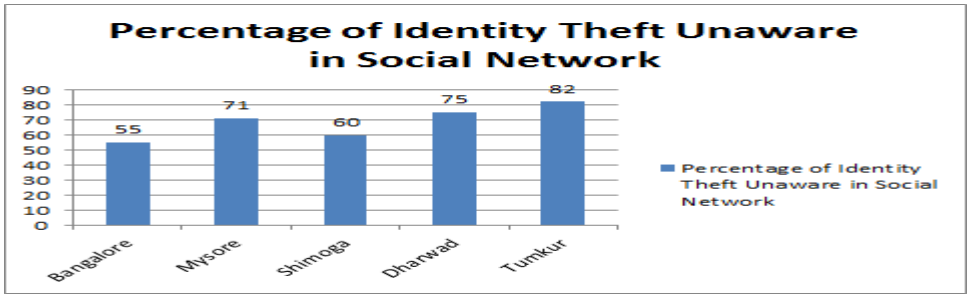
Table-7: Number of students publishing their identity in any form

CITIES	Uploading original display picture	Accepting friend request to unknown persons	Updating locations	About Career progress
BANGALORE	60	9	30	52
MYSORE	42	2	10	45
SHIMOGA	55	4	13	40
DHARWAD	59	4	9	51
TUMKUR	40	2	5	31

Accepting friend request from unknown persons in social network is considered to be the major threat in social network compared to any other identity outsourcing. After that updating location every time wherever they go & the places they visit is second major personal data of a person published in social networks. Compared to the above career details and having original display picture has been a very less impact on publishing. Based on the severity the percentage (%) of students publishing their personal identity is considered to be unaware and it is represented in figure 5.



From the data or responses received from the students the percentage (%) of awareness about major attacks through internet technology has been highlighted in table 8.

Table-6.5: Showing the percentage (%) of awareness for each of the cases considered

CITIES	Virus attacks (%)	Phishing (%)	Password strengths (%)	Misuse of social networking site (%)
BANGALORE	88	98	88	45
MYSORE	72	99	65	21
SHIMOGA	79	98	78	40
DHARWAD	83	99	71	25
TUMKUR	74	99	69	18

From The above table we can draw inference that students are more unsafe while using social networking sites and the students are well aware of phishing and virus attacks. The awareness on password strengths has to be spread among students and need to educate them on the above issues. Overall cyber security awareness amongst the college students in Karnataka is analyzed by considering different security parameter issues as mentioned above (E-mail phishing, password strength, malicious codes and popup- windows) and the percentage (%) is calculated and it is given in table 9.

Table-6.6: showing the level of Cyber security awareness in each city:-

CITIES	Being aware of cyber security (%)
BANGALORE	79.75
MYSORE	64.25
SHIMOGA	73.72
DHARWAD	64.5
TUMKUR	64

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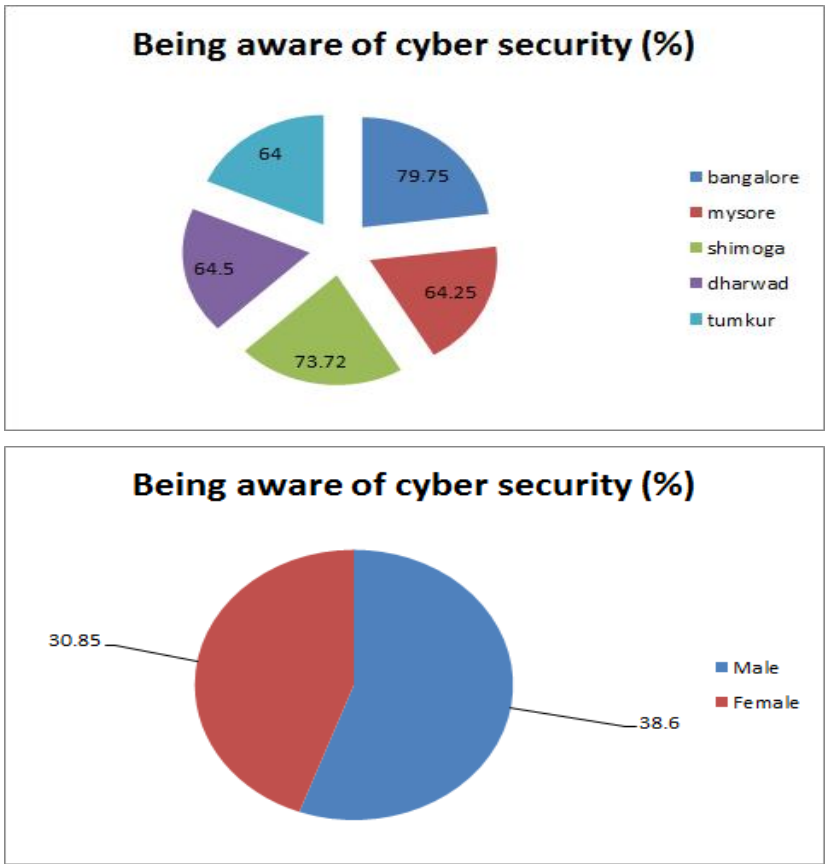

Figure-6: Cyber security awareness among college students in Karnataka

The cyber security awareness amongst the college students in Karnataka is measured as 69.45 in which male ratio is around 38.6% and whereas female ratio is around 30.85%.

7. CONCLUSION

Cyber threats are one of the crucial national security that all of us are facing today .visiting the websites which are already diseased with malware, responding phishing E-mails, storing logging info in a third party location site or even distribution of the private information over the phone, exposing personal information to social networking are tend to steal personal information of common people. The study/survey result displays that the college students in Karnataka are devouring above average level of awareness regarding the cyber related threat issues which can help them to safeguard themselves from the cyber-attacks. Full fledge cyber awareness will make students to protect themselves from hackers and crackers henceforth awareness on cyber threats has to be educated in high level.

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A STUDY ON RETURN AND TRADING VOLUME LINKAGES BETWEEN SELECTED IT COMPANIES IN INDIA

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ABSTRACT
This present study examined the relationship between stock returns and trading volume. The sample of the study consists of ten IT companies stocks traded at the Bombay Stock Exchange (BSE) from 2009 - 2018. The statistics tool used in this study is the correlation coefficient. The study revealed that sixty percent of sample companies stock returns are positively related to the change in trading volume. Further, in case of Infosys Limited, it was found that past trading volume change is negatively related to stock returns and investor misspecification about future earnings or illiquidity of low volume stocks can be the reason for the negative relationship between trading volume and stock returns.

Keywords: stock, return, trading volume, market, relationship

1.1 INTRODUCTION

The fluctuation in trading activity is not only explained by publicly available information but also by non-information trade due to events, short selling, and insider traders. These factors are exogenous to the general price behaviour in the stock market (Campbell, Grossman and Wang 1993). However, these fluctuation creates a similar effect to those produced by a change in the risk aversion of the significant proportion of market participants (Ali, 1997). The academic literature provides the association between trading volume and stock return volatility. It is also found that high stock volume is linked with volatility and positive relation between stock returns and volume. Morse (1980) found that the serial correlation of returns in high volume and high volume periods tend to have positively autocorrelated returns. Le Baron (1992a) and Sentana and Wadhwani (1992) showed that autocorrelation of daily stock returns changes with the variance of returns. Duffee (1992) established the relation between serial correlation and trading volume in aggregate monthly data. Campbell, Grossman, and Wang (1993) examined the relationship between aggregate stock market trading volume and the serial correlation of daily stock return. They found that a stock price decline on high volume day is more likely than a stock price decline on low volume day to be associated with an increase in the expected stock return. Omran and Mckenzie (2000) investigated the relationship between the volume of trade and conditional variance of trade and found the significant relation between timing of innovational outliers in returns and volume.

This paper aims to contribute to the literature by investigating the relationship between trading volume and stock return volatility in Bombay Stock Exchange (BSE) by utilizing a relatively more recent database and extensive dataset including individual stocks instead of a general index which has been primarily used in previous studies.

1.2 REVIEW OF LITERATURE

Statman M, Thorley S, & Vorkink K (2006) tested the trading volume predictions of formal overconfidence models[1]. The share turnover is positively related to lagged returns for many months. The security volume is more responsive to market return shocks than to security return shocks, and both relationships are more pronounced in small-cap stocks. They concluded the study stating the lead-lag relationship between market returns and turn-over confirms the conventional wisdom of market making professionals as well as formal theories of investor overconfidence.

Louis Gagnon and G. Andrew Karolyi (2009) examined the joint dynamics of returns and trading volume of cross-listed stocks on U.S. markets. Based on the Heterogeneous-agent trading models, the returns in the home market on high-volume days are more likely to continue to spill over into the home market for those cross-listed stocks subject to the risk of greater informed trading. Further states the actual dynamic relation between volume and returns comovements depends on the underlying forces driving trading.

Khalid and Mohammed (2010) determined the empirical relationship between risk, return and trading volume by introducing the trading volume as a proxy for the flow of information to explain the return. The trading volumes have positive information content in predicting returns in all settlement periods except the settlement period and if the settlement period is reduced, the day of the week anomalies disappeared[2]. It concluded by stating if the settlement period T+l is introduced, the weekdays' anomalies will disappear.

[1]The overconfidence model of Gervais and Odean (2001) and Odean (1998a)

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[2]Identified by Nishat and Mustafa (2002)

Haiyan Zhou and Stephen Owusu-Ansah (2012) have proposed to investors of cross-listed firms to use trading volume to revise their perception of firms' value. They have found that the relationship between returns and trading volume is significantly positive. Further, concludes the cross-listed firms from low-disclosure regimes have relatively higher trading volume sensitivity to returns than their counterparts from the high-disclosure regimes.

Hsin-Yi (2013) empirically studied the dynamic stock return–volume relations for emerging markets. The developed market helps to predict the returns of the emerging markets. The study concluded stating that the volume Granger causes return as well as return Granger causes volume in most of the emerging markets.

Mahender, Shalini, and Verma (2014) conceptually studied the investor's perception of trading volume and stock return volatility. The respondents showed a strong willingness to use trading volume and stock return volatility as an informational tool. The main conclusion of the study is that the investors and portfolio managers can use this information as a tool for their investment decisions.

Ilia, Kelly, and Dexin (2014) studied the effect of high trading volume on observed stock volatility. It is found that there is a positive relation between trading volume and stock volatility, especially when trading volume is high. Further, concluded that the stock trading can inject volatility above and beyond that which is based on fundamentals.

Marcus A Ong (2015) examined the dynamic relationships between stock returns, volatility, and trading volumes for S&P 500 stocks. The researchers identified several causal relationships and produced a number of stylised facts, from an information theoretical perspective. Researchers highlighted in his conclusion that the trading volumes play a dominant role in the relationship between return and volatility.

Mahender, Shalini, and Simmi (2015) studied the causal relationship between trading volume and stock market returns using daily data. The results of the correlation showed that trading volume and stock returns are significant but negatively correlated with each other. Further, it showed that there is a strong correlation between the previous day's volume and current volume, the previous day's return, and current stock return.

Suman Gulia (2016) analysed the relationship between trading volume and stock return volatility in the Indian stock market. The relationship between price change and trading volume, irrespective of the direction of the price change, is significant across three alternative measures of daily trading volume for the aggregate market and individual stocks. Further found the volume-price change slope for negative returns is smaller than the slope for positive returns, in that way supported the asymmetric relationship.

1.3: Main criteria: The main criteria of selection of scrips to be included for the study are market capitalisation, liquidity and proper representation of the IT companies in the industry.

2.1 RESEARCH METHODOLOGY

2.2 Type of research

The type of research used in this study is descriptive research.

2.3 Objective of the study

- To study and analysis the linkage between trading volume and stock returns of selected IT Companies in India.

2.4 Research design

The research used the ex-post-facto type of research design in the study.

2.5 Data sources

The researcher used secondary data collection method in the study and for this purpose sample data was collected from websites of Bombay Stock Exchange (BSE) (www.bseindia.com) and Moneycontrol (www.moneycontrol.com). The researcher collected stock prices and trading volume of selected stocks for a period of ten years i.e., January 2009 – December 2018.

2.6 Scope of study

The study is restricted only to the information technology sector in India, with special reference to TCS Limited, Infosys Limited, Wipro Limited, HCL Technologies Limited, Tech Mahindra Limited, Oracle Financial Services Software Limited, Mphasis Limited, Mindtree Limited, Hexaware Tech Limited and NIIT Technologies Limited.

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2.7 Sampling Techniques
The researcher used a convenient type of sampling method in the study. The samples are collected from the Bombay Stock Exchange (BSE) on the basis of their market capitalisation.

2.8 Hypotheses
H_0: There is no significant relationship between stock return and trading volume

H_1: There is a significant relationship between stock return and trading volume

2.9 Tools used for the study
The researcher used the following tool.

i) Correlation coefficient.

2.10 Limitations of the study
The study is restricted only to selected ten companies in the IT sector from the Bombay Stock Exchange (BSE). The sample size is restricted to ten due to time constraint.

3.1 DATA ANALYSIS AND INTERPRETATION
3.2 IT Companies selected for the study based on Market Capitalisation

Sl. No.	Company Name	Last Price	52 Weeks High	52 Weeks Low	Market Cap (Rs. cr)
1.	TCS Limited	2,065.55	2,273.00	1,391.15	775,073.82
2.	Infosys Limited	761.60	771.15	545.85	332,716.56
3.	Wipro Limited	372.50	377.00	253.50	168,559.61
4.	HCL Technologies Limited	1,076.05	1,124.50	880.00	145,940.49
5.	Tech Mahindra Limited	808.00	824.00	564.05	79,293.77
6.	Oracle Financial Services Software Limited	3,787.10	4,655.00	3,329.55	32,477.62
7.	Mphasis Limited	999.90	1,278.00	802.05	18,612.30
8.	Mindtree Limited	917.50	1,181.90	679.30	15,066.64
9.	Hexaware Tech Limited	353.80	557.40	294.80	10,532.74
10.	NIIT Technologies Limited	1,290.80	1,425.00	795.00	7,972.93

Source: www.moneycontrol.com dated 21.02.2019

3.3 Calculation of Stock Returns

Table No. 1: Indicating Month Wise Returns of TCS Ltd. Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	5.78	3.88	0.06	0.77	5.01	1.51	-0.30	-0.11	1.31	-0.86

Inference
The average returns of TCS Ltd. have seen a downward trend from 2009 till 2012. In 2013 the return increased to 5.01% from 0.77% and after 2013, the stock has given a negative return in the year 2015, 2016 and 2018.

Table No. 2: Indicating Month Wise Returns On Infosys Ltd. Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	7.53	2.50	-1.43	-1.24	4.03	-2.44	-2.92	-0.58	0.46	-2.10

Inference
The stock has given the highest average return in 2009 (7.53%) and second highest average return in the year 2013 (4.03%). Out of ten years, the stock has given a positive average return for four years and the rest of the years' negative average return.

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Table No.3: Indicating Month Wise Returns On Wipro Ltd. Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	10.01	-1.42	-1.45	0.17	3.57	0.05	0.30	-1.28	-1.50	0.54

Inference

The average returns of Wipro Ltd. in the year 2009 were 10.01% and later the return started to have a declining trend from 2010 (-1.42) till 2011 (-1.45). From the year 2012 till 2015 the stock has yielded positive average returns. Again there was a declining trend between 2016 and 2017. In 2018 the return started to raise (0.54).

Table No.4: Indicating Month Wise Returns of HCL Technologies Ltd. Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	11.17	1.93	-0.98	4.13	6.40	2.20	-3.08	-0.20	0.69	0.88

Inference

The average returns of HCL Technologies Limited in the year 2009 were 11.17% and later there is a declining trend till 2013. After 2013 again there was a declining trend till 2016. After three years of declining trend, the stock return is steadily increasing.

Table No.5: Indicating Month Wise Returns On Tech Mahindra Limited Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	13.51	-2.27	-1.43	4.58	6.10	3.01	-6.96	-0.14	0.49	3.29

Inference

The average returns of Tech Mahindra Limited in 2009 were 13.51% and later it declined to -2.27% in 2010 and -1.43% in 2011. Then the return increased from 2012 onwards till 2014. The stock gave a negative return in the year 2015 (-6.96) and 2016 (-0.14). From 2017 onwards there is an increasing trend.

Table No.6: Indicating Month Wise Returns On Oracle Financial Servs Ltd. Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	14.87	0.27	-1.59	5.37	0.16	0.28	0.98	-1.33	2.44	-0.57

Inference

The highest average stock return of Oracle Financial Services Software Ltd. was 14.87% in 2009. The stock has given positive returns from 2009 till 2017 except in 2011, 2016, and 2018.

Table No.7: Indicating Month Wise Returns On Mphasis Limited Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	14.36	-0.35	-5.66	2.46	1.81	-0.87	2.34	1.37	2.31	3.35

Inference

The highest average stock return of Mphasis Limited was 14.36% in 2009. The stock has given positive returns from 2009 till 2018 except in 2010,2011, and 2014.

Table No.8: Indicating Month Wise Returns On Mindtree Limited Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	10.35	-1.54	-2.13	4.80	7.27	0.06	1.35	-6.16	1.67	4.04

Inference

The highest average stock return of Mindtree Limited was 10.35% in 2009. The stock has given positive returns from 2009 till 2018 except in 2010,2011, and 2016.

Table No.9: Indicating Month Wise Returns On Hexaware Tech Limited Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	14.65	2.76	-1.14	2.20	4.22	4.09	2.19	-1.06	4.44	0.34

Inference

The highest average stock return of Hexaware Tech Limited was 14.65% in 2009. The stock has given positive returns from 2009 till 2018 except in 2011 and 2016.

Table No.10: Indicating Month Wise Returns of NIIT Technologies Limited Stock: (in %)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Avg %	10.05	1.00	-0.15	2.90	3.68	0.63	4.24	-2.01	3.99	6.08

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Inference
The highest average stock return of NIIT Technologies Limited was 10.05% in 2009. The stock has given positive returns from 2009 till 2018 except in 2011 and 2016.

3.4 Calculation of Correlation Co-efficient of selected IT Companies

Table No.11: Indicating Correlation Coefficient For TCS Ltd Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	.209*
	Sig. (2-tailed)		.022
	N	120	120
Volume	Pearson Correlation	.209*	1
	Sig. (2-tailed)	.022	
	N	120	120
*. Correlation is significant at the 0.05 level (2-tailed).			

Interpretation: The correlation coefficient is 0.209 and it is significant at the 0.05 level. Since the p-value (0.022) is less than 0.05, the H_0 is rejected and H_1 is accepted. Hence, there is a significant relationship between stock return and trading volume.

Table No.12: Indicating Correlation Coefficient For Infosys Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	-.198*
	Sig. (2-tailed)		.030
	N	120	120
Volume	Pearson Correlation	-.198*	1
	Sig. (2-tailed)	.030	
	N	120	120
*. Correlation is significant at the 0.05 level (2-tailed).			

Interpretation: The correlation coefficient is -0.198 and it is significant at the 0.05 level. Since the p-value (0.03) is less than 0.05, the H_0 is rejected and H_1 is accepted. Hence, there is a significant relationship between stock return and trading volume.

Table No. 13: Indicating Correlation Coefficient For Wipro Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	.062
	Sig. (2-tailed)		.503
	N	120	120
Volume	Pearson Correlation	.062	1
	Sig. (2-tailed)	.503	
	N	120	120

Interpretation: The correlation coefficient is 0.062 and it is significant at the 0.05 level. Since the p-value (0.503) is greater than 0.05, the H_0 is accepted and H_1 is rejected. Hence, there is no significant relationship between stock return and trading volume.

Table No. 14: Indicating Coefficient Of Correlation For HCL Tech Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	-.065

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	Sig. (2-tailed)		.483
	N	120	120
Volume	Pearson Correlation	-.065	1
	Sig. (2-tailed)	.483	
	N	120	120

Interpretation: The correlation coefficient is -0.065 and it is significant at the 0.05 level. Since the p-value (0.483) is greater than 0.05, the H_0 is accepted and H_1 is rejected. Hence, there is no significant relationship between stock return and trading volume.

Table No. 15: Indicating the Coefficient of Correlation For Tech Mahindra Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	.256**
	Sig. (2-tailed)		.005
	N	120	120
Volume	Pearson Correlation	.256**	1
	Sig. (2-tailed)	.005	
	N	120	120
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: The correlation coefficient is 0.256 and it is significant at the 0.01 level. Since the p-value (0.005) is less than 0.01, the H_0 is rejected and H_1 is accepted. Hence, there is a significant relationship between stock return and trading volume.

Table No. 16: Indicating Coefficient Of Correlation For Oracle Fin Serv Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	.122
	Sig. (2-tailed)		.185
	N	120	120
Volume	Pearson Correlation	.122	1
	Sig. (2-tailed)	.185	
	N	120	120

Interpretation: The correlation coefficient is 0.122 and it is significant at the 0.05 level. Since the p-value (0.185) is greater than 0.05, the H_0 is accepted and H_1 is rejected. Hence, there is no significant relationship between stock return and trading volume.

Table No. 17: Indicating Coefficient Of Correlation For Mphasis Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	.117
	Sig. (2-tailed)		.203
	N	120	120
Volume	Pearson Correlation	.117	1
	Sig. (2-tailed)	.203	
	N	120	120

Interpretation: The correlation coefficient is 0.117 and it is significant at the 0.05 level. Since the p-value (0.203) is greater than 0.05, the H_0 is accepted and H_1 is rejected. Hence, there is no significant relationship between stock return and trading volume.

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Table No. 18: Indicating Coefficient Of Correlation For Mindtree Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	.259**
	Sig. (2-tailed)		.004
	N	120	120
Volume	Pearson Correlation	.259**	1
	Sig. (2-tailed)	.004	
	N	120	120
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: The correlation coefficient is 0.259 and it is significant at the 0.01 level. Since the p-value (0.004) is less than 0.01, the H_0 is rejected and H_1 is accepted. Hence, there is a significant relationship between stock return and trading volume.

Table No. 19: Indicating the Coefficient of Correlation For Hexaware Tech Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	.370**
	Sig. (2-tailed)		.000
	N	120	120
Volume	Pearson Correlation	.370**	1
	Sig. (2-tailed)	.000	
	N	120	120
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: The correlation coefficient is 0.370 and it is significant at the 0.01 level. Since the p-value (0.000) is less than 0.01, the H_0 is rejected and H_1 is accepted. Hence, there is a significant relationship between stock return and trading volume.

Table No. 20: Indicating Coefficient Of Correlation For NIIT Tech Stock:

Correlations			
		Return	Volume
Return	Pearson Correlation	1	.307**
	Sig. (2-tailed)		.001
	N	120	120
Volume	Pearson Correlation	.307**	1
	Sig. (2-tailed)	.001	
	N	120	120
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: The correlation coefficient is 0.307 and it is significant at the 0.01 level. Since the p-value (0.001) is less than 0.01, the H_0 is rejected and H_1 is accepted. Hence, there is a significant relationship between stock return and trading volume.

Table No.21: Indicating the Correlation Coefficient of All Sample Companies:

Sl. No.	Company Name	Correlation Coefficient
1.	TCS Limited	0.209
2.	Infosys Limited	-0.198
3.	Wipro Limited	0.062
4.	HCL Technologies Limited	-0.065

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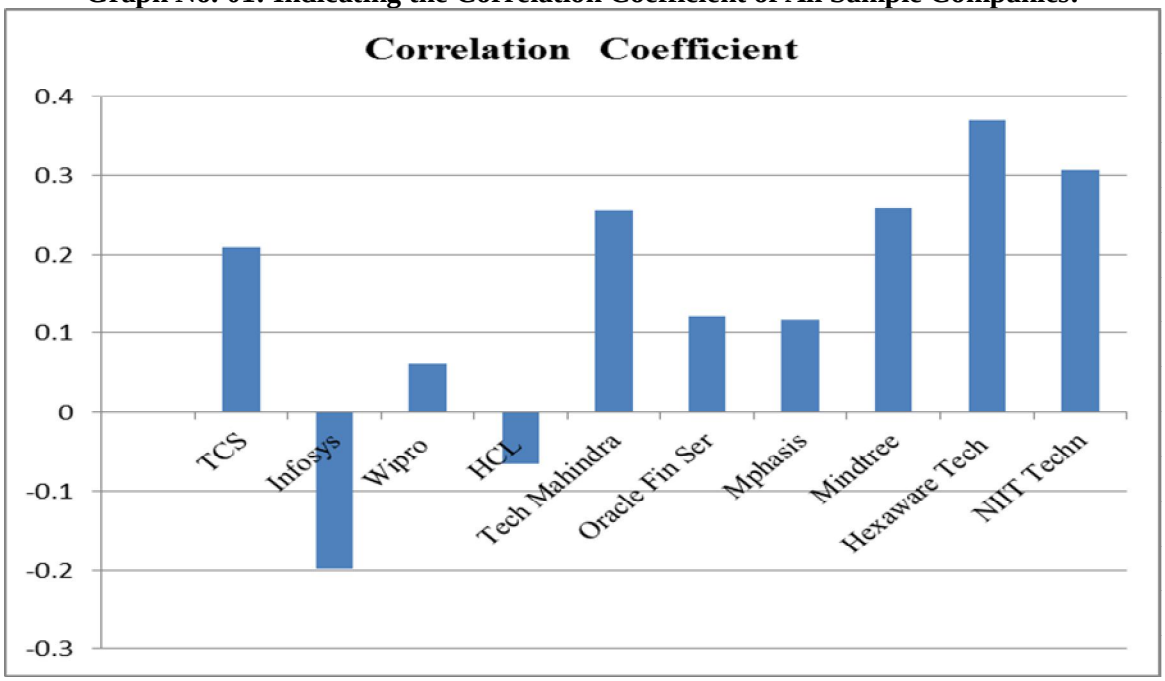
5.	Tech Mahindra Limited	0.256
6.	Oracle Financial Services Software Ltd.	0.122
7.	Mphasis Limited	0.117
8.	Mindtree Limited	0.259
9.	Hexaware Tech Limited	0.370
10.	NIIT Technologies Limited	0.307

Graph No. 01: Indicating the Correlation Coefficient of All Sample Companies:



Inference: From the above table and graph it is clear that there is a moderate correlation between stock returns and trading volumes of top ten IT companies in India except for Wipro Limited, Technologies Limited, Oracle Financial Services Software Limited and Mphasis Limited. The following companies have a significant relationship between stock return and trading volume; Hexaware Tech Limited(.370), NIIT Technologies Limited (.307), Mindtree Limited (.259), Tech Mahindra Limited (.256), TCS Limited (.209) and Infosys Limited (-.198).

4. CONCLUSION

This study examined the trading volume effect on stock returns at the Bombay Stock Exchange from 2009-2018. This study examines the relationship between trading volume change and stock return by calculating the monthly returns for the period of ten years and then by calculating the correlation coefficient between stock returns and trading volume by taking trading data of the ten top IT companies listed on BSE India based on market capitalisation. The study found that the trading volume change is positively related to the stock returns and as the trading volume has predictive power on stock returns, investors can make trading volume based strategies to make profits.

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IMPACT OF SALES PERSONNEL EFFECTIVENESS ON CUSTOMER SERVICE DELIVERY

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INTRODUCTION

A sale is the act of selling a product or service in return for money or any other compensation. It is an act of completion of a commercial activity. The seller or salesperson – the provider of the goods or services – completes a sale in response to an acquisition or to an appropriation or to a request. There follows the passing of title in the item, and the application and due settlement of a price, the obligation for which arises due to the seller's requirement to pass ownership. Ideally, a seller agrees upon a price at which he willingly parts with ownership of or any claim upon the item. The purchaser, though a party to the sale does not execute the sale, only the seller does that. To be precise the sale completes prior to the payment and gives rise to the obligation of payment. If the seller completes the first two above stages of the sale prior to settlement of the price, the sale remains valid and gives rise to an obligation to pay.

Retail sales people can do their job from behind a counter, over the phone, or even by visiting their clients personally, whether they're right down the hall or on the other side of the world. Whatever the product, they must convey confidence and goodwill, for making a sale requires a trusting consumer. People in sales must be ready to deal with rejection and disgruntled customers.

Sales effectiveness refers to the ability of a company's sales professionals to "win" at each stage of the customer's buying process, and ultimately earn the business on the right terms and in the right timeframe. Improving sales effectiveness is not just a sales function issue; it's a company issue, as it requires deep collaboration between sales and marketing to understand what's working and not working, and continuous improvement of the knowledge, messages, skills, and strategies that sales people apply as they work sales opportunities.

BACKGROUND OF THE STUDY

Sales Personnel Effectiveness

Sales personnel effectiveness is analyzed by factors namely sales person expertise trust with salesperson, contact quality and sales person power. These factors are adopted from various literature reviews.

Sales Person Expertise

Salesperson expertise is the belief that a salesperson possesses special knowledge that is relevant to the business relationship. Salesperson expertise has been empirically linked to the level of trust a buyer has with a salesperson (Busch and Wilson (1976); Doney and Cannon (1997)), and to buyer seller relationship quality (Crosby, Evans and Cowles, (1990)).

Trust with A Salesperson

Trust in a sales person requires a belief that the salesperson can be relied on to behave in a manner such that the long term interest of the customer will be served (Crosby, Evans and Cowles, 1990). A customer trust involves confidence that the salesperson will deliver on promises (Crosby et al, 1990) and fulfil long term needs through coordinative actions (Ganesan, 1994; Moorman, Zaltman and Deshpande, 1992; Anderson and Weitz, 1989).

Contact Quality

Three items were developed for the study to measure an organizational buyer's perception of the quality of the interaction with the salesperson. Past literature on buyer seller interactions generally shows that the frequency of contact (Doney and Cannon, 1997; Heide and Miner, 1992), open communication and information sharing enhance relationship quality and cooperation.

Sales Person Power

Expertise is typically associated with technical knowledge. Expert power can also be derived from specialized knowledge of how to get things done (French and Raven, 1959; Busch and Wilson, 1976). A sales person power within the supply firm can be viewed as his or her potential to influence the perceptions, behavior and decision making of members in the firm.

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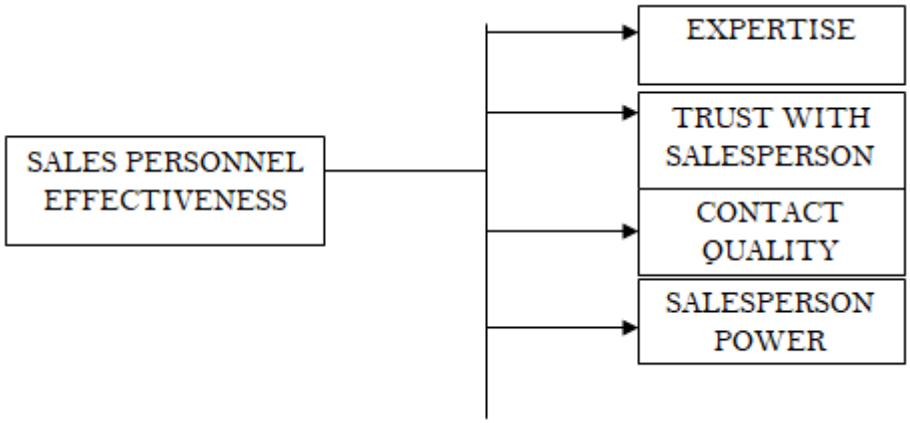
Figure-1: Sales Personnel Effectiveness



CUSTOMER PERCEPTION AND EXPECTATION

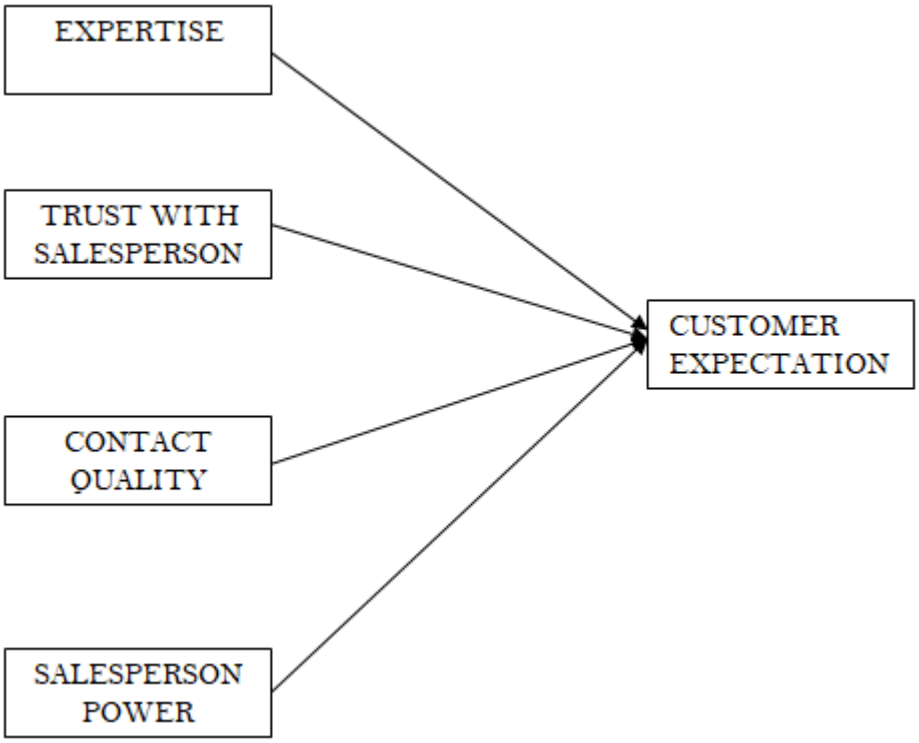
In customer service delivery, two variables like customer perception and customer expectation are adopted from various literature reviews.

Mohammad Al-Hawari (2008), found that the customers' perception of service delivery process quality plays the most important role in satisfaction level followed by the employees' service quality. Finally physical surroundings (tangible aspects) should be well maintained as customers are willing to be in a convenient atmosphere while they are served. Saravanan and Rao (2007), has analyzed the discrimination among the three groups of overall service quality from the customers' perspective. The results indicate that both the technological factors and the people-oriented factors of service delivery appear to contribute more in discriminating the groups of overall service quality.

Amudha and Vijaya (2007), studied that organizations can assess five dimensions of service quality to determine the level of services provided and to decide which dimensions need improvement. In order to develop service quality it is necessary to contact employees frequently and evaluate their service experiences.

CUSTOMER EXPECTATION ON SALES PERSONNEL EFFECTIVENESS

Figure-2: Customer Expectations and Sales Personnel Effectiveness



The present study tested the reliability of each of the elements of service delivery. The variables under each element are as mentioned below:

Customer perception on Service Delivery

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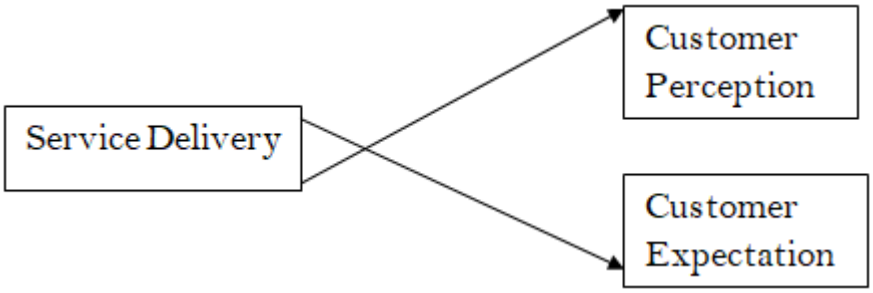
- Adequate and necessary facilities are available for good customer care
- Exhibits enhancement of technological capability to serve customers more effectively
- Has the highly simplified service delivery process
- Customers feel safe, secure, satisfied and delighted

Customer expectation on Service Delivery

- Adequate and necessary employees are available for good customer care
- Customers are apprised about the nature and schedule of services available in the bank Feedback from customers is used to improve service standards of the bank
- Giving caring and individual attention to customers by having the customers' best interests at heart
- Has the practice of recognizing regular Customers

In the service quality literature, expectations are viewed as desires and wants of the consumer (Oakland, 2000). Cronin and Taylor (1992) suggested that service quality is a vital antecedent of customer satisfaction.

Figure-3: Customer Service Delivery



Based on these literature reviews, hypothesis is framed for objectives

Hypothesis 1
H0: There is no significant relationship between customer expectation and sales personnel effectiveness.

H1: There is significant relationship between customer expectation and sales personnel effectiveness.

Hypothesis 2
Ho: There is no significant relationship between customer perception and customer expectation.

H1: There is significant relationship between customer perception and customer expectation.

STATEMENT OF THE PROBLEM
Retail industry is growing at a faster phase to meet consumer demand. Customers coming to the store for purchasing Apple products experiencing different experience at different times. This happens during the time of interaction with the sales executives in store. Sales person should be very much effective and knowledgeable to satisfy customer needs. So in order to find out the effectiveness of sales personnel during customer service delivery this study is been carried out at Imagine Store, Gopalan Signature Mall, Bangalore.

OBJECTIVES OF THE STUDY
The objectives of the study are

1. To determine the factors influencing sales personnel effectiveness and customer service delivery.
2. To find out the gap between customer perception and customer expectation on service delivery.
3. To determine the relationship of customer expectation on sales personnel effectiveness.
4. To analyze the significance difference between demographic variables (occupation, income level) and customer perception and expectation.

METHODOLOGY
The study assumes the nature of descriptive research. The sampling method used for the study is Proportionate Random sampling method. Sample size of this study is 153. Number of customers visiting Imagine store per day is around 200. The survey is conducted for 7 days including the weekend and the total population is 1550. Survey is conducted with customers who are purchasing core product. Core product customers are 16% of 1550.

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Hence the total population is 248. 20 questionnaires were collected everyday from the customers. This sample size is calculated using the Yamane's formula given below.

$$n = N/(1 + N(e^2))$$

Where

n – Estimated sample size

N – Population – 248

e – Estimated error – 0.05

Analysis and Discussion

This section explains the demographic profile of the respondents which includes gender, age group, occupation and monthly income of the respondents.

Table-1: Demographic profile of the respondents

Variable	Category	No of respondents	Percentage
Gender	Male	101	66
	Female	52	34
	Total	**153**	**100**
Age Group	Less than 20	2	1.3
	21 to 40	133	86.9
	41 to 60	16	10.5
	Above 60	2	1.3
	Total	**153**	**100**
Occupation	Student	1	0.7
	Self employed	26	17
	Professional	120	78.4
	Others	6	3.9
	Total	**153**	**100**
Monthly Income	Less than 25,000	22	14.4
	25,001 to 50,000	60	39.2
	50,001 to 1,00,000	68	44.4
	Above 1,00,000	3	2.0
	Total	**153**	**100**

From the above table, it can be seen that majority (66%) of respondents are male. 34% of respondents are females. In age group, majority (86.9%) of the respondents belong to the age group 21 to 40 years. 10.5% of the respondents belong to the age group 41 to 60 years, 1.3% of the respondents are belong to the age group of less than 20 and above 60. In occupation category, majority (78.4%) of the respondents are professionals. 17% of the respondents are self employed, 3.9% of the respondents are belong to other category and 0.7% of the respondents are students. In monthly income level category it can be seen that, majority (44.4%) of the respondents monthly income level is 50001 to 100000. 39.2% of the respondents monthly income level is 25001 to 50000, 14.4% of the respondents monthly income level is less than 25000 and 2.0% of the respondents monthly income level is above 100000.

SALES PERSONNEL EFFECTIVENESS

Table-2: Sales personnel effectiveness – Mean and Standard Deviation

Factors	No of respondents	Mean	Standard Deviation
Expertise	153	4.6	0.3
Trust with salesperson	153	4.3	0.5
Contact Quality	153	4.6	0.4
Salesperson Power	153	4.1	0.5

From the above table, it can be seen that sales person expertise and contact quality has the highest mean of 4.6, trust with salesperson mean value is 4.3 and salesperson power is 4.1.

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GAP BETWEEN EXPECTATION AND PERCEPTION OF CUSTOMERS

Regression analysis was performed to find out the gap between perception and expectation of customers. In this analysis, perception is considered as independent variable and expectation is considered as dependent variable.

Hypothesis framed based on the literature review for objective 2 is as follows

H0 : There is no significant relationship between customer perception and customer expectation.

H1 : There is a significant relationship between customer perception and customer expectation.

The following table shows the R square value and the model fit.

Table-3: R Value Table

Factor	R square	F Value	Significance
Expectation on Perception	0.644	273.522	0.000

Keeping customer expectation as dependent variable and customer perception as independent variable, the R square value was found to be 0.644. This indicates that 64% of the variation in the dependent variable (customer expectation) is explained by the customer perception. The F-value 273 (p>=0.01) which is significant indicates that the regression model is fit. Hence, it shows a strong positive impact of customer expectation on customer perception. Thus the hypothesis H1 is accepted and there is a gap found between customer perception and customer expectation.

Table-4: t Value Table

SNo	Factor	Beta	t Value	Significance
1	Expectation	0.265	1.137	0.257
2	Perception	0.906	16.539	0.000

From the above table it is found that, "t" test values are also significant at 5% level of significance and confirms the model fit.

Hence from the regression analysis, hypothesis H0 is rejected and the H1 is accepted and found to have a significant relationship between customer perception and customer expectation; therefore a gap is found between customer perception and customer expectation on service delivery.

Perception is found to be significant at 0.01 significance, whereas expectation does not confirm to be significant. However, 90% ($\beta = 0.90$) of the perception explains expectation of service delivery.

RELATIONSHIP OF CUSTOMER EXPECTATION ON SALES PERSONNEL EFFECTIVENESS

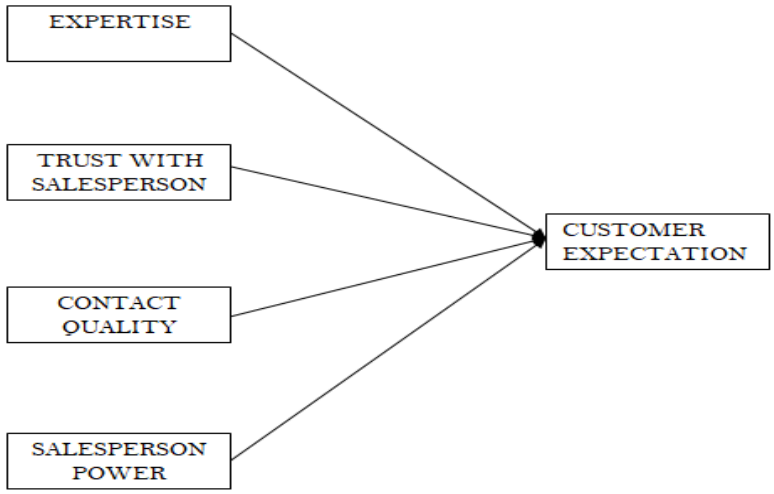
In order to find the significance relationship between customer expectation and sales personnel effectiveness regression analysis is being carried out. In this analysis, customer expectation is considered as dependent variable and sales personnel effectiveness is considered as independent variable.

Hypothesis was framed based on the literature review

H0: There is no significant relationship between customer expectation and sales personnel effectiveness.

H1: There is significant relationship between customer expectation and sales personnel effectiveness.

Figure-4: Sales personnel effectiveness and Customer Expectation



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The following table shows that R square value and the model fit.

Table-5: R Value Table – Customer Expectation

Factor	R square	F Value	Significance
Expectation on Perception	0.343	19.358	0.000

Keeping customer expectation as dependent variable and sales personnel effectiveness as independent variable, the R square value was found to be 0.343. This indicates that 34% of the variation in the dependent variable (customer expectation) is explained by the sales personnel effectiveness. The F value 19.3 (p>=0.01) which is significant indicates that the regression model is fit. Hence, it shows a strong impact of customer expectation on sales personnel effectiveness. Thus the hypothesis H1 is accepted and there is a significant relationship between customer expectation and sales person effectiveness.

Table-6: t Value Table – Customer Expectation

Sno	Factor	Beta	t Value	Significance
1	Expectation		2.706	0.008
2	Expertise	-0.160	2.139	0.034
3	Sales person Trust	0.204	2.359	0.020
4	Contact quality	0.178	2.440	0.016
5	Sales person power	0.422	5.037	0.000

From the above table it is found that, "t" test values are also significant at 5% level of significance and confirms the model fit. Hence, hypothesis H0 is rejected and H1 is accepted.

From the regression analysis, it is found that there is significant relationship between customer expectation and sales personnel effectiveness.

SIGNIFICANT DIFFERENCE BETWEEN OCCUPATION, CUSTOMER PERCEPTION AND CUSTOMER EXPECTATION

In order to find the significant difference between occupation measured in groups, customer expectation and customer perception, one way ANOVA analysis is being carried out.

In this analysis, customer expectation and customer perception are considered as dependent variables and occupation is the factor influencing that variable.

Hypothesis is framed is as follows

Hypothesis 1

H0 : There is no significant difference between occupation and customer perception.

H1 : There is significant difference between occupation and customer perception.

Hypothesis 2

H0: There is no significant difference between occupation and customer expectation.

H1: There is significant difference between occupation and customer expectation.

Table-7: ANOVA Table - Occupation

Factors	F value	Sig
Perception	1.779	0.154
Expectation	0.932	0.427

The above ANOVA table shows that, the F value is 1.779 for customer perception and the p value is 0.15 which is greater than 0.05 followed by F value of 0.93 for the customer expectation with the p value of 0.43 which is greater than 0.05. It is seen for both the cases that the p value is not significant where the hypothesis H0 is accepted and other hand H1 is rejected.

From this analysis, it is found that there is no significant difference between occupation and customer perception and also it is found that there is no significant difference between occupation and customer expectation.

SIGNIFICANCE DIFFERENCE BETWEEN INCOME LEVEL, CUSTOMER PERCEPTION AND CUSTOMER EXPECTATION

In order to find the significant difference between income level measured in groups, customer expectation and customer perception, one way ANOVA analysis is being carried out.

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In this analysis, customer expectation and customer perception are considered as dependent variables and income level is the factor influencing that variable.

Hypothesis is framed as follows

Hypothesis 1
H0: There is no significant difference between income level and customer perception.

H1: There is significant difference between income level and customer perception.

Hypothesis 2
H0: There is no significant difference between income level and customer expectation.

H1: There is significant difference between income level and customer expectation.

Table-8: ANOVA Table – Income Level

Factors	F value	Sig
Perception	1.168	0.324
Expectation	1.890	0.134

The above ANOVA table shows that, the F value is 1.168 for customer perception and the p value is 0.32 which is greater than 0.05 followed by F value of 1.890 for the customer expectation with the p value of 0.134 which is greater than 0.05. It is seen for both the cases that the p value is not significant where the hypothesis H0 is accepted and other hand H1 is rejected.

From this analysis, it is found that there no is significant difference between income level and customer perception and also it is found that there is no significant difference between income level and customer expectation.

CONCLUSION

This study is done to evaluate sales personnel effectiveness on customer service delivery. A sales personnel effectiveness is analyzed by four factors namely salesperson expertise, trust with salesperson, contact quality and sales person power. It is found that sales person expertise and contact quality are having highest mean value. Customer service delivery is evaluated by customer perception and expectation. It is found that there is a gap found between customer perception and expectation on service delivery. It also shows that there is significance relationship on customer expectation on sales personnel effectiveness. Finally, customer perception and expectation was compared with demographic variables like occupation and income level of customers. From that it shows there is no significance difference between demographic variables (occupation, income level) and customer perception and expectation on service delivery.

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OPPORTUNITIES IN THE 4TH WAVE- USING ARTIFICIAL INTELLIGENCE IN FINANCIAL DECISION MAKING

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ABSTRACT
In today's times, Artificial Intelligence is ubiquitous — what was once thought as a dream will soon penetrate in all the spheres of life. With the rapid advancements in Artificial Intelligence, the growth and application opportunities of AI have become endless. With technology already disrupting established business practices, AI will lead the coming technology wave from the front. If recent trends are to be seen closely, data analytics has already permeated how activity on the internet is done, be it personal or for business. AI will be crucial in areas such as manufacturing, retailing, transportation, finance, health care, law, advertising, insurance, entertainment, education in the future. Business models will be altered in order to exploit the potential of machine learning. The field of finance in a lot ways, seems to be the harbinger of things to come. This paper seeks to focus on the application of Artificial Intelligence in the field of finance across various functions of finance. The paper further seeks to address the future prospects of AI within this context and also tries to predict a roadmap for the future.

Keywords: Artificial Intelligence, data, human functions, financial decision making and algorithms.

INTRODUCTION
The term Artificial Intelligence was first coined in the year 1955 by Professor John McCarthy and today, it can be arguably termed the phrase of the year 2019. With technology continuously growing with leaps and bounds, the newest phase of AI seems to be the next seminal change for the coming decades.

"Artificial intelligence" is an important and developing part of computer science which focuses on making machines intelligent that can function like human beings. Such machines are designed in such a way that they can execute human functions such as decision-making, learning, recognizing speech and even planning tasks.

In a broader sense, Artificial Intelligence can be understood in two ways:

1. Artificial General Intelligence (AGI): It refers to the application of AI in such a way that a machine can perform any task that a human can perform. Needless to say, this is the ultimate use of AI, at least in theory.
2. Narrow Artificial Intelligence: It refers to the utilization of machines that can do human specific activities faster, better and at a cheaper rate.

AI also gets classified as Weak and Strong AI on the basis of the range of operations it is capable of doing.

In terms of application, AI has seen four waves, Kai-Fu Lee, a prominent Chinese IT investor, has listed the four waves of Artificial Intelligence.

Internet AI
The most common and oldest usage of AI is in the realm of social media and interactions and engagement over the internet. The most visible use is in the form of digital advertising as practiced by platforms such as Facebook, Amazon or for that matter, Youtube, that are able to track our digital history is order to recommend us content based on their analysis of us. The usage of recommendation engines is what enables this method of increasing and curating content online for the user.

Business AI
This form of AI usage refers to the use of data in the form of user generated content as well as various records in order to make decisions in the fields of finance, healthcare, legal processes and business institutions. In today's time, AI has the ability to not just record previous data, but can also break down complex data to enable crucial decision-making.

Perception AI
This form of AI refers to its usage in creating smart homes, augmented reality and various such applications that have brought technology closer to mundane tasks for humans.

Autonomous AI
This, according to Lee is going to be the ultimate form of AI. It will have all the sensory and intellectual abilities, making it capable of operating and functioning as a separate entity, on its own. The signs are visible now, in the form of self- driving cars by Elon Musk.

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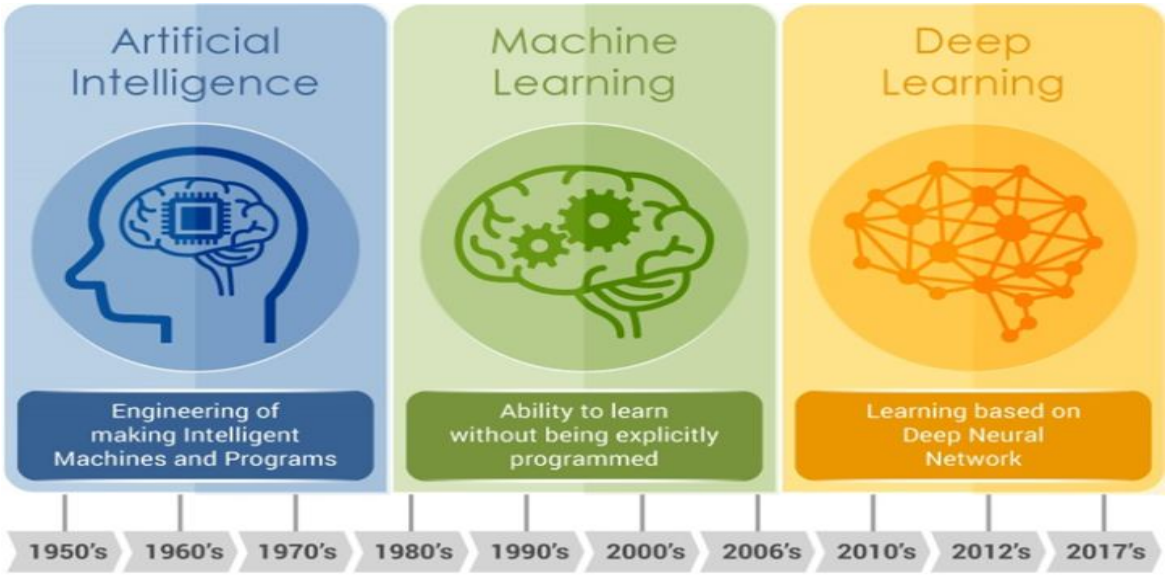
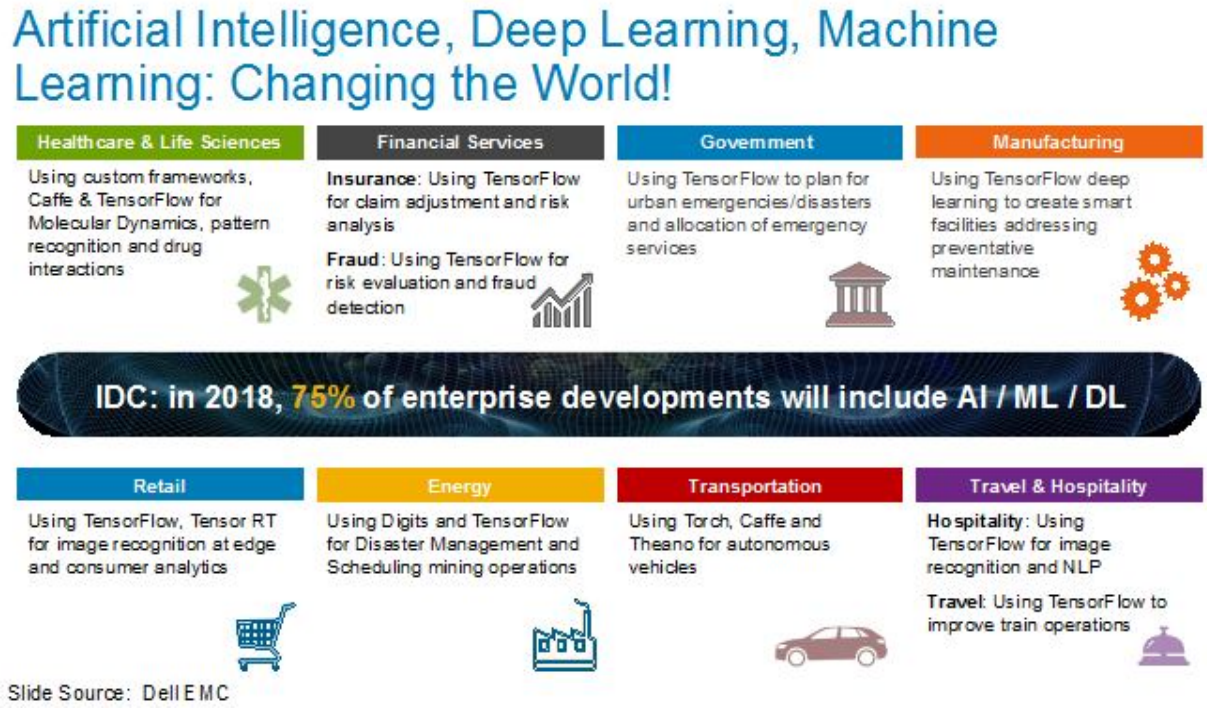


A Harvard Business Review article predicts that the consequences of AI will amplify in the next few years. Manufacturing, retailing, transportation, finance, health care, law, advertising, insurance, entertainment, education, and virtually every other industry will have to transform their core processes and business models to take advantage of machine learning and Artificial Intelligence. The bottleneck is in management, implementation, and business imagination.



Today's cheaper, better, and faster technology seems destined to reshape the finance function

The financial services industry, including investment management, has also experienced a dramatic increase in the use of artificial intelligence. The applications range from the development of robo-advisors that attempts to individualize the asset allocation decision, to the use of AI in portfolio construction and stock picking. Still in its nascent stages, it is difficult to ascertain how effective this use will be.

OBJECTIVES

The paper seeks to explore AI through the following objectives:

1. To study the role of AI across different industries
2. To critically analyse the role of current applications of AI in financial decision making
3. To analyse the constraints offered by the usage of AI in financial decision making.

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LITERATURE REVIEW

Darrell M. West and John R. Allen in their research paper titled 'How Artificial Intelligence is transforming the world' say that AI is a technology that is transforming every walk of life. It is a tool that enables people to rethink how we integrate information, analyze data, and use the resulting insights to improve decision making. They have also tried to demonstrate how AI is already altering the world and raising important questions for society, the economy, and governance. In this paper, novel applications in diverse sectors like finance, national security, health care, criminal justice, transportation, and smart cities, and address issues such as data access problems, algorithmic bias, AI ethics and transparency, and legal liability for AI decisions are briefly discussed. The authors have tried to make a contrast between the regulatory approaches of the U.S. and European Union, after which they made some recommendations for getting the most out of AI while still protecting important human values.

Jeff Torchon and Louis Launoy in their article titled "The Future Of Artificial Intelligence In Asset Management" have talked about the growing scope of Artificial Intelligence applications in different industries. Artificial Intelligence truly materializes, when the solution has "the ability to learn, understand and think in a logical way and when the solution can adapt to its environment beyond its original design.

The Growing Role of AI

AI's reputation is growing in a number of industries, among the entrepreneurs, business leaders and also proving to be an asset to the workforce. It is essentially altering the method or the way in which societies and businesses function.

According to Avery Philips, writing for the website, Medium, the top 4 industries that AI is transforming are:-

1. Healthcare

The use of AI in the healthcare industry is on the rise. It is being used to solve a number of problems, saving a lot of time, effort and money. Opening up new ways to a better and wider understanding of health sciences. The technology is mostly used to collect data related to an individual patient efficiently and effectively. But now, AI technology is also being used to gather more in-depth data for diagnostics to suggest possible conditions and ways to treat them.

According to Health IT Analytics, a number of extensive changes in the health and pharmaceutical industry are already beginning, with the use of health care tools.

2. Finance

AI is also starting to govern the financial markets quicker and in a systematic method. They are doing tasks more efficiently than humans—from collecting relevant financial data, using predictive analytics to anticipate changes and movements in the stock market to handling investments. Almost every company in the financial technology sector is already using Artificial Intelligence to add value, reduce costs and save time.

JPMorgan Chase has recently started using AI as image recognition software to analyze legal banking documents that extracts particular information and clauses in seconds compared to the 360,000 hours it takes to manually review 12,000 annual commercial credit agreements.

3. Education

As education moves online with content ranging from the letters of the alphabet to complex quantum physics, AI has been used in the form of chatbots to interact with visitors and students on education websites. As of now, these chatbots are programmed to answer routine questions that have specific answers and real teachers can be sought to answer more nuanced and open-ended questions.

It is not an unfounded fear that one day- AI may succeed the teacher, but many developers and educational technology researchers suggest that AI technology is meant to assist teachers rather than take their jobs.

4. Transportation

Transportation is one such industry where Artificial Intelligence has developed the most. While self-driving cars and trucks may be the most anticipated developments, AI can go away ahead in this industry, it can be used for traffic management operations like predicting and detecting accidents and conditions.

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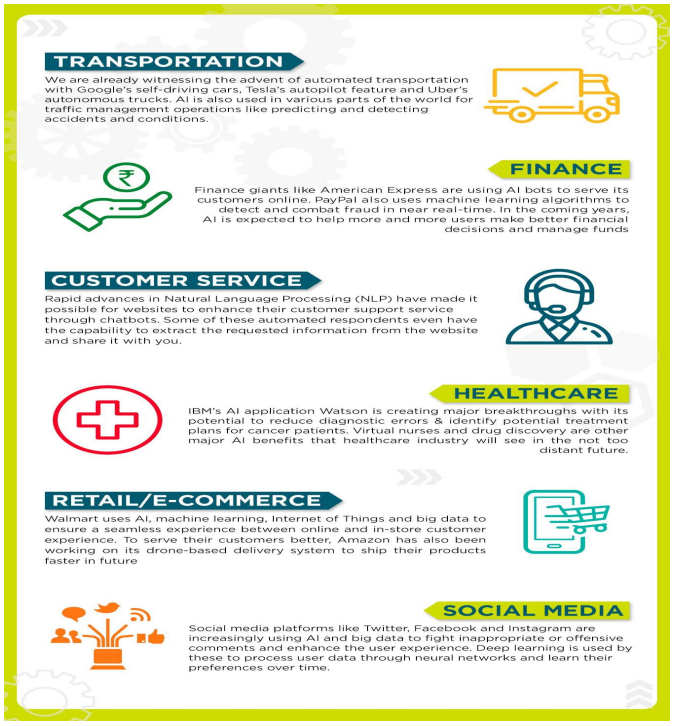


Finance & AI

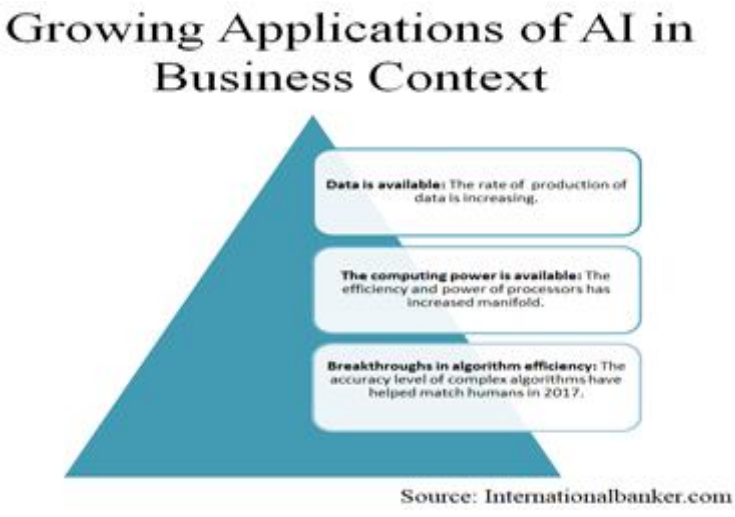
Funds managers in the past relied on lopsided informational edges to outperform the market – finding and filling faster than others, understanding and interpreting news, or just leveraging deep industry knowledge and expert networks quickly, etc.

As stated on the IBM website, that with huge amounts of unstructured data – data such astweets on twitter, text messages, image files, videos and censored data – it's become extremely difficult for a human to evaluate and take out relevant information needed in the financial industry. The situation now, with immense amount of data, the only way to consistently generate alpha – or beat the market – is to generate structured data from unstructured data in an accurate and efficient manner compared to the competitors.

With data becoming the new oil, IBM Research estimates that over 90% of the world's information was generated in the last few years. Most of that information is dark, or unstructured, that traditional computing systems can't interpret.

International Data Corporation estimates that by 2020, we'll be generating data at the rate of approximately 1.7 MBs of unstructured data per second for each person on the planet. Translating it to be about unstructured data worth 14 million GBs in a period of less than 3 years. Such overflow of unstructured data is making human effort to understand and interpret this data almost redundant.

The knowledge worker of today will not be able to make crucial decisions without the help machines that will help in such analysis



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There are three possible ways finance professionals can choose to follow:

- Ignore the explosion in unstructured data, continue to make increasingly biased decisions and ultimately take too much risk
- Return capital to investors and close their business
- Adapt, which may not be as difficult as it sounds

The Application of Artificial Intelligence in Financial Decision Making

1. In the Hedge Fund Industry

The hedge fund industry is already using a lot artificial intelligence in the form of algorithms that help analyse large amounts of data within seconds. The then analysed data is used to predict and help in the final decision making. Algorithm based trading is very normal in all trading desks today, basically all front office operations have AI based technology.

When it comes to back operations, companies are aiming towards automating all of those processes to make sure that people spend lesser time analyzing data and use it to help in taking quick and correct decisions. They also spend a lot of time identifying trends and patterns to help understand the market better.

A lot of coding and third party softwares are being used to build user interface and make everyday processes possible at a click of a button. All being done to ultimately save manua labour and use it more efficiently for crucial tasks.

2. Robo Advisors

Robo advisors, also called low-cost alternatives to human advisors, have two big advantages, low- cost and free of human bias. A study by Accenture on the rise of robo-advice talks about robo-advisory's massive impact on the existing business model of the investment firm. Costs will be significantly reduced because on which the kingpin will be on the effective delivery of the advice.

3. Chat Bots

It is Artificial Intelligence used to reply to customer queries via text or audio. At the moment it is majorly being used in the telecom business. Chatbots ensure effective customer engagement and the inherent intelligence of AI can ensure that customer issues are better served through effective data analysis and machine learning. Kasisto is one such platform that provides customer engagement solutions through the use of chatbots for financial companies.

4. Decision Intelligence

Artificial Intelligence offers effective decision making for various fields of the finance function. It provides assistance from bankers to credit lenders. Take any part of finance, and Artificail Intelligence can help make it better - the underwriting process can also made more effective through the use of AI. Platforms such as ZestFinance, Scienaptic Systems, underwrite AI make the underwriting process completely AI driven.

Companies like Kensho, datarobot, Ayasdi provide business intelligence for effective decision making.

Master card's pioneering security platform, Decision Intelligence is a fraud detection service. It uses artificial Intelligence to help financial institutions decrease the number of fraudulent practices and increase the number of real-time approval of genuine transactions.

In today's rapidly changing environment, the investment managers require new tools to address this changed environment. Tools that can help increase efficiency and save wastage of time, because ultimately time saved it money earned. The efficiency of such tools and technology is ultimately going to be the game changer and the uniqueness of a company.

The success of artificial intelligence (AI) algorithms is based on the ability to gain easy access to the right kind of data in sufficient volume.

According to Saul et al, early returns for companies making investments through AI are promising. Still, to unlock the full value of AI algorithms, companies must have access to large data sets, apply abundant data-processing power, and have the skills to interpret results strategically. Increasingly, those three elements are in the hands of the largest technology companies, fueling But many financial services institutions start from a position of comparative advantage—they have large data sets and decades of experience using analytical tools, building models and employing large teams of software developers. More recently, they have also begun to

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incorporate data scientists into their ranks. Well positioned to leverage AI, financial services institutions have already begun to incorporate AI in parts of their business, such as algorithmic trading.

According to the Edge Markets, the Hedge fund industry showed rapid industry growth last year. Now when the business scenario is changing, a lot of industries are planning to expand their AI strategies, Hedge Funds are already way ahead by hiring the best tech employees to face the future.

Some people have also talked about the ill- effects of such an action; they believe that human find managers may not be able to compete easily against Artificial Intelligence. It does not mean that humans will not be able to do it, it might just get a little more challenging to compete against a computer at a quantitative exercise.

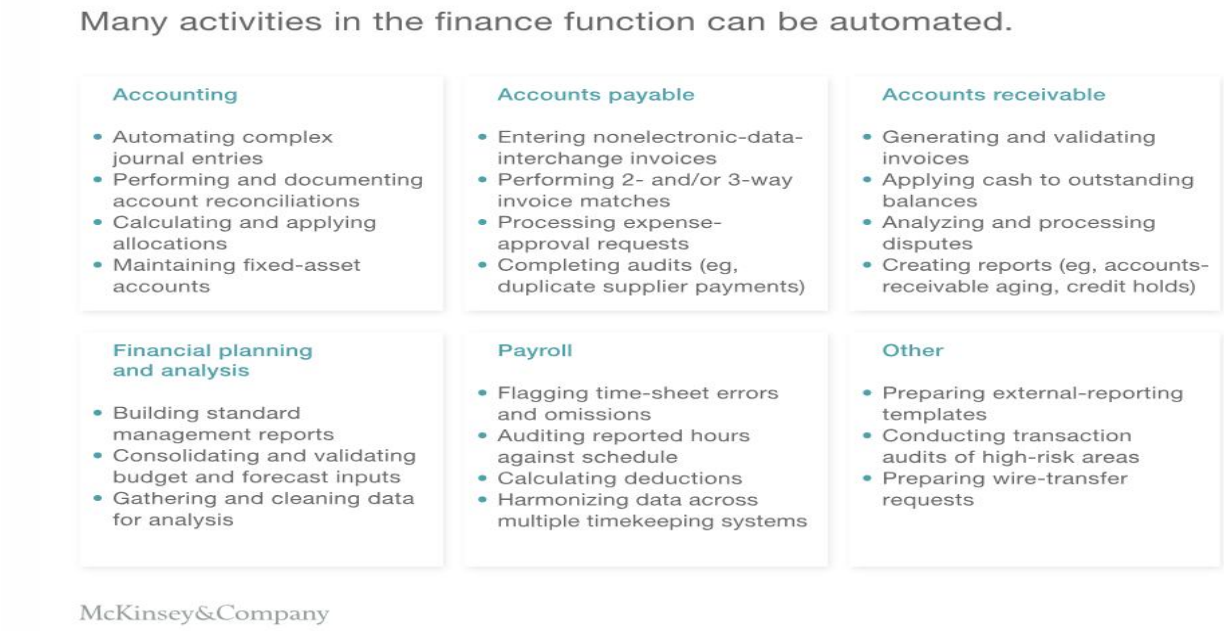
Edgar van Tuyll van Serooskerken, head of Quantitative Strategies at Pictet Wealth Management, says that Pictet uses machine learning for two purposes: first, to hunt for profitable investment opportunities; and second, to search for patterns in big data that are similar to those of past periods.

Machine learning is another emerging concept which can sift through the mass of data related to the historical prices of various asset classes, company's performance, and various economic happenings and developments. This is usually done to look for crucial information, find patterns and establish relationships between data points that could allow us to make returns.

Machine learning is sophisticated enough to not just work at a much higher speed, but also has the ability to bring in a huge depth to the analysis is does. The machine is capable of absorbing large amounts of data,that goes way into the past and is then able to predict the current as well as future behaviour.

According to Quantinsti, most of the trading happening now is not the real Artificial Intelligence, it is essentially an algorithm with predefined rules and workflow. Real Artificial Intelligence would be when the algorithm adapts to the market conditions, absorbs the right information, grasps and improves on the past experiences to ultimately make the right trade decision. That time has not come yet, but we are not that far away either.

There are a lot of examples of large trading houses, some of them being Two Sigma, Renaissance technologies and BlackRock, replacing human stock pickers with Artificial Intelligence for picking stocks. Companies are also looking to get AI under financial regulations and compliance to make things smooth for the future.



WHAT CAN GO WRONG?

According to a new World Economic Forum report, Artificial intelligence will mold the financial world in the coming years. It will automate the way one would invest among other service. This does not mean that there would be no systematic weaknesses and risks. The report says that artificial intelligence will cause a lot of disruption to the industry. It will give an advantage to the ones who adapt to the change quickly compared to the ones who don't. It also talks about how technology will help create convenience for the final consumer by creating more convenient products, sophisticated tools that can be used to manage personal investments and finance.

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Jesse McWaters, who leads the AI in Financial Services Project at the World Economic Forum, says "A more networked world is more vulnerable to cybersecurity risks, and it also creates concentration risks."

The runaway trading events, also called flash crashes created by high-frequency trading in the recent years have highlighted that the hedge funds and banks are hiring AI researchers as quickly as they can, while the financial industry is experimenting with back-office automation in a big way.

Meanwhile, Andrew Lo, a professor at MIT's Sloan School of Management, after his research with the issue of systemic risk in the financial system, has warned that the whole system may be vulnerable because of its sheer complexity.

McWaters says that the issues in finance will change as AI becomes more widely used, issues like biased algorithms, which can discriminate against certain groups of people will have to be considered. He also mentioned that the financial companies should not be too eager to simply replace staff. As the study suggests, human skills will remain important even as automation becomes more widespread.

The challenges of artificial intelligence

1. **Data quality:** It is crucial that the data that AI will work with is of a quality that will enable good decision-making. The challenge therefore is to collect and collate relevant and appropriate data that will make effective decision-making possible.
2. **The Black-box effect:** The intelligent algorithms are made in such a way that it is possible to observe the data that is used as input and data that comes out which is the output, but the internals operations are not that easily understood. As a result it becomes extremely difficult to explain the decisions the algorithm makes to a normal human being. This can also mean that they can be proven wrong in an individual instance. Such results can also have inherent biases that may be difficult to identify. To diagnose and understand these problems is still a complex exercise.
3. **Narrow focus:** Intelligent algorithms are made to be excellent at solving specific problems, they are not meant to digress from what they were designed for. For example, an algorithm that has been taught to identify suspicious and fraudulent payments will not be able to find out any other suspicious activity related to trading. In addition, algorithms are meant to be purely rational but often fail to be emotionally intelligent. That's why banking chatbots often disappoint: they are "smart" but lack empathy.
4. **Responsibility:** The main issue of having smart and intelligent machines comes with its problems. Responsibility being one of the important ones, who would want to take over the responsibility of such a machine when something might go wrong? Financial institutions and companies are therefore not very confident to give the "intelligent machines" full responsibility to make a decision. They ensure that there is a human element involved to take the final call.

WHAT THE FUTURE HOLDS!

Though it is huge debate currently whether AI will 'steal' jobs, it still remains to be seen to what extent will AI be actually used that might make joblessness possible.

However, the most interesting thing to note, at least, a yet, is the fact that there is not enough data yet.

AI's biggest advantage lies in its ability to analyse huge amounts of data, which tends to be a mundane and repetitive task. This will leave humans to focus on more human driven analysis and decision-making processes.

The most crucial change that might occur if human intelligence fails to stay ahead of artificial intelligence will be financial singularity. It refers to a market situation where all the trading decisions are taken by Artificial Intelligence and humans will not trade at all.

With Aidiya being the poster child of AI in the financial sector, we need to remember that the AI of the future will be still more aware, far more intelligent and definitely quicker than humans.

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PROCEDURAL JUSTICE: DISCERNMENT OF FAIRNESS PERCEPTIONS IN THE WORK ENVIRONMENT

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ABSTRACT
Organization Justice has been an intriguing area of research for many academicians and practitioners who have been concerned about establishing fairness in organizations. Firms too have been striving to enable this through policies, programs and practices. Past research has solidly established the fact that among the various Justice dimension constructs of Colquitt, Distributive and Procedural Justice as entity/organization focussed, whereas Interpersonal and Informational Justice as supervisor/Leader focussed. Focussed research results on procedural justice has agreed to the fact that though Procedural Justice is Entity/Organization focussed, its implementation is engaged through the supervisors/leaders of the organization.

This study conceptually states the narrative of procedural justice, and extends the arm of procedural justice by applying Leventhal's Justice rules to posit the strong opinion for procedures in organizations to stick to. The study too has listed out outcomes from extensive literature review that has an impact through the application of Procedural Justice on day to day matters in the organization. It can be a pointer to researchers in future to conceptually and empirically study the influence of Procedural Justice on any one or more of the outcomes.

Keywords: Organization Justice, Procedural Justice, Justice Rules, Organizational Outcomes

INTRODUCTION: ORGANIZATION JUSTICE
Organization Justice has been a very interesting area of study since the last 40 years. Justice is considered as one among the many values that an organization wants to promote. Employees working in organizations perceive actions or responses as Just and Unjust and it varies subjectively. Employee's attitude and behavior at work is largely affected by the judgement of what is fair? Or What is unfair? (Lind, 1997). Employees judge fairness of procedures and mechanisms, tasks, rewards and behavior towards them in the organization and they develop an attitude towards the organization in view of their judgment (Greenberg, 1990: 399). Justice is of concern to the employee. Justice unites people whereas Injustice separates them (Folger & Cropanzano, 1998)

Perceptions of Organization Justice have been connected to various Organizational outcomes such as Absenteeism (BoBoer et.al, 2002), Trust in supervisor (Tyler-Lind, 1992), Organizational Citizenship (Gurbuz, 2007) turnover intention (Aquino – Hom, 1997) employee theft (Greenberg, 1993) Job Satisfaction (Warner et.al, 2005) and Organizational Commitment (Martin – Bennet, 1996). Greenberg (1987) coined the term Organizational Justice.

Organizational Justice reflects the way in which employees perceive and understand whether they have been treated in a just manner and whether these decisions will affect work and its outcomes (Moorman, 1991).

The study of Organization Justice has grown as a popular area of study with the pioneering work of many researchers such as Colquitt, Greenberg, Thibaut & Walker, Bies & Moag and so on. These studies have highlighted that the perceptions of fairness are different from the feelings of outcome or satisfaction from these outcomes (Cohen –Charash & Spector, 2001). These Justice studies have proved that perceptions of fairness or unfairness can explain the outcomes regarding employee Attitudes and Behavior, Organizational commitment, Citizenship behavior, Counter productive work behavior and task performance.

Is Justice a Big deal? – Criticality of Organization Justice
Human beings, it is said come in different hues, so is the case with employees. Every employee comes into the organization hoping to gain something good in return to his or her contributions. Adams equity theory (1965) dealt with perceptions of equity or Inequity experienced by employees as a tradeoff between their efforts and outcomes a result of the quotient of inputs to outputs. Naturally it is human tendency to make an internal comparison with one's effort and outcome and also to make a comparison with another employee doing the same job. If outcomes are equal in both cases they experience equity and cultivate notions of fairness or Justice and if it is contrary they experience Inequity and develop perceptions of unfairness or Injustice. Research studies dwelling on fairness in workplaces have proved that employee experiences of unfairness often leads to formation of negative attitudes, anger, frustration, job dissatisfaction, social loafing, withdrawal behaviours, mistrust (Folger, Sarlicki,1998)

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Further more it is seen why employees consider fairness or justice a matter of great importance. Employees look for working in organizations for a long duration, no employee wishes that his or her stay is short. Hence newer employees want to know whether their they have made a right decision by choosing this firm and older employees would want to know whether they would remain working for the same firm. Now both these decisions rely upon perceptions that employees develop within the organization. (Cropanzano, R., et.al, 2007) This is based on the organization climate comprising Distributive, Procedural and Interactional Justice. This would be seen in the philosophy, policy, rules and procedures followed in the organization. Another reason that employees yearn for justice is to experience a feeling of acceptance, respect and value rather than experience harassment, disrespect and exploitation in these organizations (Cropanzano, R., et.al, 2007) Employees would also consider the fact that perceptions of ethics and morality and want organizations to create a climate for such experiences. Unethical practices can lead to friction and tensions giving rise to negative feelings, attitudes and eventually into behaviors (Folger, Sarlicki, 1998)

DIMENSIONS OF ORGANIZATIONAL JUSTICE

Distributive Justice - The origins of the Justice perception can be drawn from the works of Homans (1961) and Adams (1965) wherein employees measured their outputs received to the proportion of inputs put by them and making a comparison with others which was propounded in the Equity Theory. If these ratios matched, the employee felt fairness or equity and if it did not match felt unfairness or Inequity. As this was mostly seen in terms of outcomes received by an employee in terms of pay, promotion and other organizational outputs distributed. (Moorman, 1991) explained distributive Justice as fairness concerned with the outcomes an employee receives in terms of pay and promotion . Distributive Justice denotes the fairness of outcomes which included benefits and punishments and how these were understood after allocations (Greenberg, 1990) .

Procedural Justice : Authors studying justice found that allocations of outcomes alone do not matter but the rules and procedures involved and followed would create justice perceptions. Employees concern for the procedures than the distribution made the distributive justice inadequate (Nowakovski – Conlon, 2005). Procedural Justice points to employee's perceptions on the decisions made by supervisors and whether these outcomes were made through a controlled process (Thibaut & Walker, 1975) . Just as Distributive Justice, procedural justice also affects employee outcomes (Ambrose, 2002). Leventhal and his colleagues(1980) further studied beyond . Leventhal (1980) brought out rules to state that procedural justice had to fulfill these a) Consistency b) Bias-Suppression c) Accuracy d) Correctability e) Representativeness and f) Ethicality.

Interactional Justice

Bies & Moag (1986) brought out a third dimension to Justice. They argued that Justice Perceptions are based on factors that are beyond formal procedures. According to them the Interpersonal relationship that is engaged in the process of executing distributive and procedural outcomes affects employee perceptions. According to (Bies, Shapiro & Cumming, 1998) Organizational Justice perceptions can be increased if the reasons behind the decisions taken are explained and clearly, truthfully and adequately. (Bies & Moag, 1986) further added that positive organizational Justice perceptions can be seen if employees are treated with courtesy, dignity and respect . Further (Greenberg, 1993) said that Interactional Justice may be seen from two sub-dimensions. Some authors measuring Organizational justice recommended the use of a four dimensional construct to differentiate between the two measures (Colquitt, Conlon, Wesson, Porter).

a) Interpersonal Justice

Interpersonal Justice means expressing concern for employees about the distributive outcomes they receive (Greenberg, 1993) (p-85).This dimension indicates perceptions of respect and politeness in one's treatment (Greenberg, 1993) . It is not enough if outcomes have been distributed fairly or if procedures are followed properly, but whether the employees receive them with dignity matters. It reflects on the role of the supervisor or manager executing these outcomes.

b) Informational Justice

Informational Justice means providing knowledge about the processes that establish importance for employees. (Greenberg, 1993) (p-84). This dimension measures the satisfaction with respect to the information conveyed and whether explanations were provided adequately to the employees in the outcome delivering process. It refers to whether supervisors and managers provide explanations about why certain procedures were followed or not and why certain individuals got more or why they got less and other matters needed to be conveyed much to the satisfaction of the employees.

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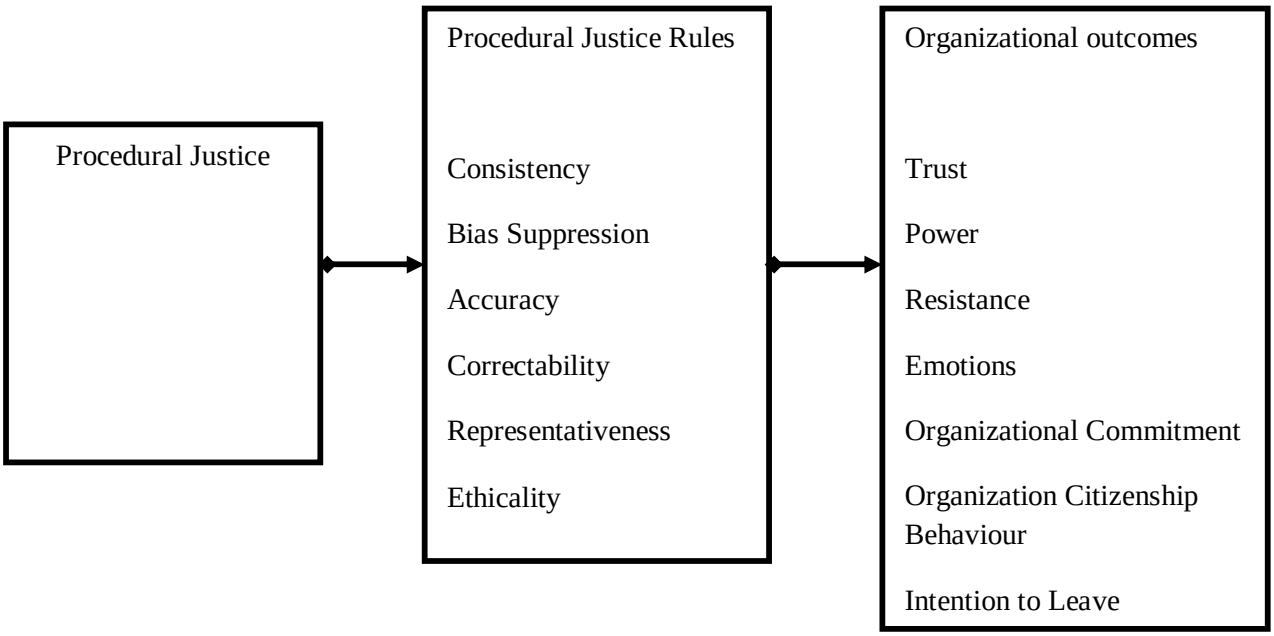
Fig-1: Procedural Justice on Organizational Outcomes



Procedural Justice at work: Procedural justice is one of the determining factors in justice outcomes that an employee would consider for equity. Research findings show that individuals do not bother much about how benefits are distributed but whether a set of established processes were followed in doing so (Cropanzano and Greenberg). While conducting research on understanding respondents reactions about dispute resolutions is when Thibaut and Walker(1975) brought out the dimension of Procedural Justice – which was defined as justice determined by the means of or the procedures complied with in making allocation related decisions, decision making policy and implementation in the organization.

Procedural Justice would focus on the impartiality of distributive justice (justice in the distribution of benefits) and retributive justice (fairness in the deciding punishments). Ensuring an impartial chance and equal opportunity to all the parties concerned with the outcomes or parties who are beneficiaries would be considered as procedurally true. This form of justice allows for a higher level of interpersonal exchanges leading to perception of fairness irrespective of whether distributive or retributive justice is reached as favoured. (Tyler, Kenneth, Nancy (1985).

Discernments regarding procedural justice tends to be higher when employees involve in the decision making and when they learn that organizational authorities have acted in an objective and just manner (Tyler, 1990). Justice perceptions are also based on whether procedures were followed accurately, and when decisions were made whether the recipients of the decisions were treated in a respectful and trustworthy manner increases the likelihood of employees identifying with co-worker and the organization (Bies, 1987; Tyler and Bies, 1990) (Lind and Tyler, 1988). Employees would be willing to undergo a certain degree of injustice during outcome distributions when they realise that set or informed procedures were fairly followed (Cropanzano and Folger, 1991, Leventhal, 1980). Thibaut and Walker (1975) stated that whenever decisions regarding employee outcomes were made and participants were given an opportunity to voice out their opinions, in other words called process control employees were in a position to accept an unfavourable decision.

Leventhal's (1980) Six Justice rules determining Procedural Justice:

1. **Consistency:** Procedures followed and applied must be reliable over time and persons. It means that procedures followed must be the same for all who are connected with the decision. If at all procedures have to changed or altered, it must be done prudently after informing all the parties concerned.

2. Bias suppression: When procedures are applied and decisions are made, it must be kept in mind that personal biases, prejudices, beliefs must not interfere in fair decision making. Decisions must be arrived after taking all view points into consideration

3. Accuracy of information: Procedures applied and decisions made must be factually right and must be based on proper and accurate information

4. Correctability: Procedures and decisions made must have scope for correction, when a wrong or an averse decision has been made.

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5. Representativeness: Decision making process must allow for equal and fair representation of all parties. Enough opportunities must be created for the affected to have a 'voice' or influence the decisions taken.

6. Ethicality: Decisions made must be ethical and no room to divert or suppress justice through illegal or unethical means must be encouraged.

Fairness and Unfairness of Procedural Justice

The notion of Fairness and Unfairness of Procedural Justice is well understood in terms of allocations of outcomes than the consequences themselves (Cropanzano, R., et.al, 2007) It is based on the principle of natural justice the same applies even for rules and processes in firms.

An acceptable process is one that includes the following on its checklist: Process that is accurate, correctable, consistent, free from any sort of bias, and one that adheres to ethical norms and values (Thibaut, Walker, 1975). Research studies have highlighted that the decision making authority or the decision control is one of the factors contributing to procedural justice.

In all decisions experienced by employees the perception of whether the decision was fair or unfair is determined by whether the recipients had Voice or had a certain control on the process to influence or express their views about the decision made. If this is allowed, meaning if the recipient felt included the process, they would not mind taking even a decision not liked by them (Cropanzano,Greenberg,1997),(Folger, Rosenfield, Robinson,1983). Hence organizations today have understood the criticality of involving employees in decision making processes.

Procedural Justice and its influence on Organization outcomes

Procedural Justice has deep influences on the work environment as it shows the employee attitude about fairness (Greenberg, (1990a), more so when an organization grows in size and complexity and when there are multiple stakeholders with different interests, than not having proper, well thought of procedures by which decisions or issues can be handled could a big cause of worry (Sheppard, Lewicki and Minton, 1992). Decision makers in organizations have to be careful in dealing with employees on organizational matters. Employees build a psychological contract with the organization and this contractual relationship continues to be intact depends on perceptions of justice experienced through the procedures followed in deciding organizational outcomes.

Trust: Perception of Procedural justice can affect employees when they lose trust on authorities as change can bring about a certain amount of fluctuation that requires authorities to handle uncertainty positively (van den Bos, Lind (2002) trust can be built or restored depends on how organizational authorities implement the change (Dirks and Ferrin, 2002; Kirkman, Jones and Shapiro, 2000). It is a known thing in organizations that trust is built based on the actions of the management with respect to outcome decisions and fair procedures followed (van den Bos, 2001). Employees may not bother much about procedural fairness when there is trust on the authorities decisions on allocations (van den Bos, p.939). (Tyler and Lind, 1992) stated that when there is a breach and employees experience a violation of their trust it can lead to negative perceptions often labelled as bias or prejudice. Sometimes there are instances where employees question the veracity of these procedures and feel that procedures and rules are framed to curb employee innovation, restrict interactions with members inside and outside the firm and see an increase in social and economic costs with no reasonable explanation. (Sheppard et al., 1992). It is also seen that trust in times of uncertainty can be raised if appropriate information and proper communication takes place between the authorities and employees though Interactional Justice, as this interaction provides voice to the individual to influence the process. (Bordia et al., 2004).

Power and resistance: Power equations between the superior and subordinates too decide unfairness perceptions, mostly when a subordinate has experienced injustice at the hands of the superior, the chances of justice been restored is slim (Homans,1961) leading to the individual using his power to resist change or an action of the superior (Jermier, Knights and Nord, 1994). An aggrieved employees resistance to change or authority is to highlight the act of injustice and the fact of matter could be about a wrong decision been implemented. In a the case as the latter the organization benefits from the resistance (Folger and Skarlicki (1999) (Fiorelli and Margolis, 1993). Employees are often aware that they are at a disadvantage in the power equation, emanating from the perception that efforts may not fetch right rewards. Unjust perceptions can lead to absenteeism, intention to quit, withdrawal behaviors, negative attitudes towards superiors and lower performance (Shore and Shore, 1995).

Emotions: positive emotions or negative emotions are a result of perceptions of equity or inequity experienced. (Adams, 1965). Equity feelings result in fair perceptions and Inequity feelings results in unfair perception.

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studies in the past have shown that events that are perceived as unfair in the organizations can affect the emotions and behaviors of employees (Cropanzano and Folger, 1989 and Weiss et al., 1999). It is quite natural to arrive at a premise that fair outcomes lead to fair perceptions and unfair outcomes lead to unfair perceptions. Anxiety of employees in a change context could affect the emotions, anxiety reduction happens when outcomes are fair and this gives rise to a feeling that fair procedures would be implemented (Paterson and Cary, 2002). Similarly if right information is shared and correct procedures implemented employees could change their negative perceptions to outcomes.

Organization Commitment: Research on Justice literature has strongly proved that Organization justice dimensions of Distributive, Procedural, Informational and Interpersonal justice increases organizational commitment (Rupp and Cropanzano, 2002), but it is still inconclusive to pin point to which dimension contributes higher. (McFarlin and Sweeney, 1992; Sweeney and McFarlin, 1993) research stated that justice perceptions are attributed to person referenced outcomes, whereas Organizational commitment is attributed to system referenced outcomes. (Greenberg, 1994; Lowe and Vodanovich, 1995), stated that distributive justice influenced organizational commitment and procedural justice received support from employees for institutions (Tyler, 1990).

Organizational citizenship behaviors (OCB): Organization Citizenship behaviors are voluntary actions of employees where they strive to go beyond their allotted work assignment, description and responsibilities for working for the goals of the organization. Such a non-compensated behavior is attributed to fairness perceptions motivating the individual to work (Organ, 1990). (Ball et al 1994, Moorman 1991) research proved that procedural justice contributed more than distributive justice. Organization citizenship behaviors could also be largely because of positive interactions with supervisors and line managers in the organization proving that interactional justice influencing Organization Citizenship Behavior (Skarlicki and Latham, 1996).

Intention to Leave: The decision by an employee to quit or the intention thereof it self cannot be fully attributed to Organization Justice, but there is strong evidence to support that most cases employees quitting or intention to leave is mainly due to negative Inequity experienced in distributive allocations such as pay, promotion, rewards and incentives, or when laid down principles and procedures are not followed and when the employee experiences of having no voice over the process. Inequity further continues when Information and Interactional Justice both are ignored leading to the employee experiencing Injustice or unfairness. Loi et al (2006) research on perceived organizational support mediated distributive and procedural justice variables. The findings strongly proved the influence of employee's intention to leave the organization.

CONCLUSION

For a considerable time distributive justice was considered to be the factor leading to employee's understanding about equity and satisfaction. Procedural justice research and decisions gained increased emphasis with the works of Thibaut and Walker, 1975 and Leventhal, 1980, the former for having highlighted the fact that distributions or allocations alone did not matter but whether the right procedures were implemented in making this allocations. Leventhal contributed in framing the rules to vet procedures for implementation in decision making.

Justice literature covering procedural justice has proved that perceptions of unfairness has negative effects on employee behaviors which results in a strain on power and resistance relationship between superiors and subordinates, affection and emotions of employees, organizational commitment, organization citizenship behaviors, employees feeling of trust and Intention to Quit.

Organizations pay attention to heed to justice practice enshrined in the principles, policies, rules and actions of the organization. Proper procedures ensures that allocations in terms of pay, promotion, incentives and job assignments would be done applying accepted procedures. More importantly procedural justice perceptions were felt in the interactions that employees had with their supervisors and line managers, as this interactive context created discernment about fairness and unfairness. It is also important to note that employees were willing to lower allocations if proper procedures were followed and more relevantly when the employee had voice and could influence the process by his or her involvement. Procedural justice needs to be accompanied by Informational and Interpersonal justice where it becomes the responsibility of organizational agents at all levels of the hierarchy to prove proper and accurate information on decisions and when done so, subordinates must be treated with respect and dignity. This accompanied mix of all four justice dimensions complement to the whole perception, feeling and emotion of justice.

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Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2007). *Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies* (3rd ed.). New York: McGraw-Hill.

S. Neelamegham," Marketing in India, Cases and Reading, Vikas Publishing House Pvt. Ltd, III Edition, 2000.

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