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From the Editor's Desk

Jamnalal Bajaj Institute of Management Studies (JBIMS) was founded in 1965 by the University of Mumbai. The philosophy which has inspired the vision and approach of JBIMS since its inception is that of cultivating management thinkers and innovators who are deeply entrenched and firmly rooted in the Indian soil. This has been underlying theme of JBIMS for 50 glorious years as it launched various educational, research and development activities for the advancement of management education. The institute has constantly focused on inculcating an action- oriented approach and driving the need to constantly innovate and reinvent in order to sustain in a dynamic business environment.

With a view to foster innovation and research, JBIMS has taken yet another leap forward with the Research Journal that will be published twice a year. Driven by mission of quality education and research, the Journal will attract the brightest of researchers and academicians to share and contribute their research and experience. This research journal aims to create greater collaboration and sharing of academic understanding. The Institute seeks to provide excellence in management education and research by way of this journal-JBIMS Spectrum. The Journal aims to become a wealth of world-class research and analysis across the entire spectrum of management education. By way of our alliances, we hope to create a rich compilation of management knowledge that will benefit our readers which comprises industrial stalwarts, researchers, academicians and the student fraternity.

We, thereby, invite all research scholars, academicians**,** management teachers, practicing managers and students to use this golden opportunity to take their research to the vast network associated with JBIMS and enable us to create a portal for the transfer of high-quality research-driven information.

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Analysis of Artificial Intelligence Based Personalised Adaptive Learning (PAL) In Education 4.0: An Exploratory Study

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A. Abstract:

The Industry 4.0 has affected not only various industrial sectors, business, governance and the people, but also education leading to Education 4.0. One of the unique characteristics of industry 4.0 and Education 4.0 is the application of Artificial Intelligence (AI). Personalisation of E-learning systems is dominating Education 4.0 as learners have varying ambitions, background, skills, intelligence and unique personalities. Education 4.0 is primarily shaped by AI, which include AI based learning portal supporting teachers' efforts, adaptive content delivery, integration of certified resources with personalised learning on real time basis, greater institutional offering of AI driven e-learning and E-tools on web pages. The key applications of AI in Education include automation of routine activities, customisable smart content, immersive learning, and identification of drivers of enhancing students' performance, early warning signs of dropouts, personalised learning, learning analytics, adaptive learning, intelligent chatbots and predictive modelling. Personalised Adaptive Learning (PAL) is amalgamation of personalised learning and adaptive learning. Personalised learning involves adapting of curriculum, learning and pedagogy to measure up to customised needs to meet the needs and goals of learners. Adaptive learning denotes the technologies tracking the learner's progress, using data to amend learning path dynamically. An exploratory study based on the secondary resources has been undertaken in this research paper wherein Industry 4.0, Education 4.0, components of PAL, various AI techniques, challenges and approaches to adopting AI in Education 4.0 are reviewed and analysed.

B. Key Words: Industry 4.0, Education 4.0, Artificial Intelligence, Personalised Learning, Adaptive Learning, Personalised Adaptive Learning (PAL)

C. Introduction:

With rapid advances in technology, Technology Enhanced Learning (TEL) has moved to classrooms and made a remarkable mark on Education. TEL has experienced four major changes namely, e-learning, mobile learning, ubiquitous learning and smart learning (Adu & Poo, 2013).

However, there have been major, albeit slow transformations, in Education from Education 1.0 to Education 4.0. Varying conditions of society and prevailing technological developments have mandated unique and appropriate skill sets for human capital. Though the paradigm shifts in education did not mirror the Industrial Revolutions in terms of time lines, Industry Revolutions had a considerable impact on advancement of education. It's pertinent to recognise that higher education has a major contribution to the economy and its sustainability (Mendoza et al., 2019). Further, Industry 4.0 and Education 4.0 are interrelated and are a subset of Globalisation 4.0 (*Klaus Schwab, Nicholas Davis - Shaping the Future of the Fourth Industrial Revolution_ A Guide to Building a Better World-World Economic Forum (2018)(1)*, n.d.). Advances in technological evolutions have resulted in various paradigm shifts named 'Industrial Revolution' (Lasi et al., 2014). Artificial Intelligence, a key technology of Industry 4.0 and Education 4.0, is widely believed to be the most potential game changer in learning with concepts of personalised and adaptive learning.

C. Research Objectives:

The unique characteristic of industry 4.0 and Education 4.0 is the increasingly innovative application of Artificial Intelligence. Development and advances of higher education are highly dependent on technological progress, adoption of technology, computational capabilities and intelligent machines. Exploratory research is known for its flexibility. When a problem considered is broad and not narrowly defined, the researchers utilise exploratory research as a first step. Exploratory studies are an important means of gaining basics, seeking new insights; and asking questions and to assess phenomenon in a new light (Yin, 1994). Secondary research was undertaken from books, journals, articles and online medium. The research objectives of this exploratory study are given below: -

1. To study and track the paradigm shifts in Industrial Revolution and Education including facets of Education 4.0.

2. To identify the applications of AI in Education 4.0 with focus on Personalised Adaptive Learning.

3. To assess the challenges in adoption of AI in Education 4.0

D. Scope of the Exploratory Study:

The scope of exploratory study is organised in to five sections. The section E gives a brief introduction of IR 1.0 to 4.0 and tracks the progress of Education 1.0 to 4.0 with reference o key technologies. The section F examines various facets and trends of Education 4.0 with impact of AI on Education 4.0. This is followed by description of PAL based on AI along with cores ideas and a general framework for implementation. Next, section H briefly explain the various AI techniques used in Education 4.0. Challenges, problems and issues faced in exploitation of AI technology in Education 4.0 are presented in section I. Finally, the paper concludes the subject topic in Section J.

E. An Analysis of Paradigm Shifts in Industry Revolutions and Education:

The fundamental characteristic of Industry 1.0 is application of water and steam to mechanise the production resulting in population mobility, large scale transportation, opening of factories and growth in economies. Utilisation of electric power to enhance mass production like cars, fertilisers and engines was the feature of Industry 2.0. Era of programmable electronic devices (PLC), information technology and digital revolution which disrupted almost all sectors belongs to Industry 3.0. Present Industry 4.0 refers to complex idea based on cyber and physical systems where machines communicate with each other. It's an interesting fusion of developments in robotics, 3D printing, quantum computing, artificial intelligence (AI), the Internet of Things (IoT), energy storage, bio and nano technology, genetic engineering and other technologies [5]. Fourth IR has resulted in blurring the boundaries between biological, digital and physical spheres [6]. Humans will work with machines to tap the synergy of cognitive computing and human intelligence leading to Industry 5.0 which is expected to create highly efficient and value-added manufacturing process, trusted autonomy of robots with reduced costs [7]. Figure 1 presents the evolution of IRs from 1.0 to 5.0 with an approximate time line.

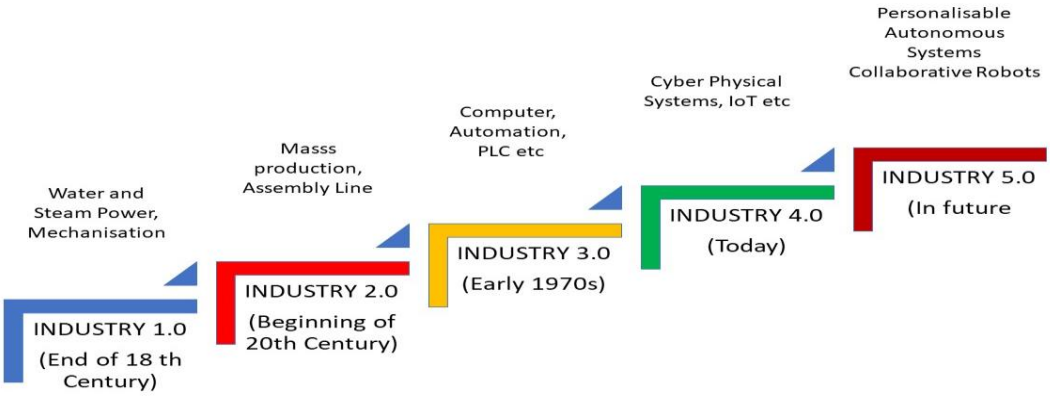

Figure 1. Evolution of IRs from 1.0 to 5.0

Having tracked IRs, a quick review of Education 1.0 to Education 4.0 is very relevant and in the context(Genkin et al., 2017). Education 1.0 was a one-way transmission process from teacher to student. Students gathered at a physical place for absorption of information and resources. Mobility of student across boundaries in Education 1.25, Open University (OU) model with emphasis on student centred learning in Education 1.5 and Virtual Learning Environments (VLE)/ Learning Management Systems (LMS) in Education 1.75 were significant milestones. Technologies of Web 2.0 were leveraged along with crowd contributed content (like Wikipedia) and Open Educational Resources (OER) in Education 2.0. Blended learning/ flipped classrooms couple with arrival of Massive Open Online Courses (MOOCs) marked Education 2.5. Education 3.0 met the demands of technology society which was centred on self-learning by huge adoption of mobile devices and web 3.0. Ubiquitous access of internet and curricula for employability were also hall marks. Education 3.5 characterised cross institutional and cross-cultural educational opportunities by social networking including breaking of traditional boundaries. The IR 4.0 has affected not only various industrial sectors, the business, governance and the people, but also education leading to Education 4.0. There are numerous companies, in response to IR 4.0, are restructuring their

companies with agile and smaller workforce. In Education 4.0 humans and technology are converging to create new opportunities creatively and innovatively. It differs from Education 3.0 in respect of massive ubiquitous connectivity, symbiosis between humans and machine towards immense opportunities. Table 1 compares Education1.0 to 4.0 with illustration of approach, educator and learner.

Education X.0	**Approach and Focus**	**Educator**	**Learner**
Education 1.0 ("Download" education)	3R's (receive, respond & regurgitate)	Knowledge source	Passive learners
Education 2.0 ("Open Access" Education)	4C's (Communicating, contributing, collaborating and cocreating)	Facilitator who team with students and others to create more interesting class experiences	Active learners
Education 3.0 ("Knowledge Producing" Education)	3C's (Connecting, collectives and curating)	Learning designers, leader of collaborative knowledge creation	Co-developers and co-researchers • Authors, drivers and assessors of learning experiences
Education 4.0 ("Innovation producing" education)	• Adaptive learning driven by AI portal • Learning process will be based on real-time student profiles.	Supported by an AI learning portal	Self-governed learning (autonomous); counsellors and AI help co-develop education plans, continuously updated by AI models

Table 1. Comparison of Education 1.0 to 4.0

One important technology underpinning 4th IR, which is gaining popularity and becoming competent in tasks, which were perceived to be in sphere of human competence, is Artificial Intelligence (AI)(*Toby Walsh - Machines That Think_ The Future of Artificial Intelligence (2018, Prometheus Books)*, n.d.). One of the unique characteristics of industry 4.0 and Education 4.0 is the application of artificial intelligence(Ciolacu et al., 2019). Advances of higher education are intertwined with technological progress and developments on computation capacities of intelligent machines (Popenici & Kerr, 2017). IBM's AI based Watson one such example. Present education,

generally, assumes that the principle "one-size-fits-all" is applicable to students, though they come from varied interests with different learning rates. The gaps in understanding a pace of studies can be improved by adopting the AI techniques in teaching learning process (Wadhwa, 2017). AI is considered as new electricity and is expected to challenge traditional methods in education(*AI is the new electricity. - Andrew Ng (Coursera) - YouTube*, n.d.) Personalisation of E-learning systems is dominating Education 4.0 as learners have varying ambitions, background, skills, intelligence and unique personalities of learners. Personalisation is supported by majority of educational theories (Roll & Wylie, 2016) .

F. Insights on Education 4.0 and Artificial Intelligence:

Education 4.0 has seven facets which include personalisation of content, gamification, virtual learning groups, adaptability based on previous knowledge and behaviour, Learning Analytics, intelligent tutors and E-assessments (Ciolacu et al., 2017). Further, there are nine important trends of Education 4.0(*EJ1190812 - Education 4*, n.d.). These trends include anywhere learning (self-paced E-learning), personalised learning, learner's choice of subjects, project-based learning, hands on learning (field experiences), data interpretation with trends, adaptive assessment, student's role in design of curriculum and teacher's role as facilitators. Importance of these trends transfer the key learning responsibilities from the teachers to the learners. Teachers should not feel threatened and assist the transition wholehearted instead. There are multiple strategies which are crucial for creating a conducive learning environment and support students in developing their communicative, collaborative and problem-solving skills through Social and Emotional Learning in Education 4.0(Soffel, 2016).

Education 4.0 may be visualised Education 3.0 plus certain characteristics primarily shaped by AI, which include AI based learning portal supports teachers efforts, adaptive content delivery, integration of certified OERs with personalised learning on real time basis, greater institutional offering of AI driven e-learning breaking all boundaries and AI driven E-tools on web pages(Cox & Lowrie, 2015). Though there could be some hype with unrealistic expectations and inadequate knowledge of the complex technologies, it is rational to believe that AI is currently galloping at an accelerated speed and has profound effect on higher education (Popenici & Kerr, 2017). AI based intelligent systems are highly relevant for education and are considered as a pillar of the TEL. They affect various factors like motivational, cognitive, social and emotional aspects of learning(Di et al., 2019).

AI is considered as a discipline dealing with the need to create and design machines with human intelligence, though in different proportions for solving real world human tasks (Ikedinachi A. P. WOGU et al., 2019). However, this thought of human-like competence by machines has inspired and fuelled imaginations(Art & Goldie, 2016). AI based intelligent systems or tutors generate learning outcomes for students as good as human tutors (vanLehn, 2011). It is also pertinent to note that AI technology has played a critical role in popularization and multiple accomplishments of platforms like Udacity, Coursera, edX, Wii, iversity, Stanford Online, and the rest in Massive Open Online Courses (MOOC) Market(Ikedinachi A. P. WOGU et al., 2019) . At present, impact of AI on education is mainly crafted and boutique. The key applications of AI in Education include **automation of routine activities in education like grading,** use of chatbots for answering

queries, customisable smart content, smart tutor, immersive learning with augmented and virtual reality, identification of drivers of enhancing students' performance, early warning signs of dropping from the course, personalised learning, administration activities, learning analytics, intelligent chatbots and predictive modelling. AI assists educational institutes to identify the drivers of learner's performance and their demotivators, by implementing a personalised learning model depending on the adaptive learning technologies, knowledge level and predictive models (Ciolacu et al., 2018).

E. AI as Core Element of Personalised and Adaptive Learning (PAL):

The sense of personalised learning can be tracked to teaching students as per their aptitude by Confucius and elicitation teaching of Socrates (Peng et al., 2019). PAL is amalgamation of personalised learning and adaptive learning. Personalised learning is the adapting of curriculum, learning and pedagogy to measure up to customised needs to meet the needs and goals of learners. Learning objectives of course, instructional methods, content delivery including sequencing are modified based on learner needs (Office of Ed Tech, 2017). The pedagogy of personalising learning is learner-centred and meets specifically the learners who are vulnerable or not available easily (Peng et al., 2019). It is a paradigm that promotes learners individual progress by customising the learning process, for free and harmonious all-round development. Three main common ideas are individual differences, personal needs and personal development(Peng et al., 2019).

Adaptive learning denotes the technologies tracking the learners progress, using data to amend instruction as per requirement(*Horizon Report > 2017 Higher Education Edition*, 2017). Adaptive learning technologies facilitate dynamic adjusting of course content depending on the learner's abilities towards accelerating learning outcome (Pugliese, 2016). The heart of adaptive learning strategies depends heavily on technology and data of learning outcome with continuous update of learning path (Walters, 2014). Three main common ideas are individual differences, individual performance, adaptive adjustment. Personalised learning has highest focus on personal development compared adaptive learning. Combining the main ideas, proposed goals of personalised and adaptive learning are individual characteristics, individual performance, personal development, and adaptive adjustment (Peng et al., 2019). By utilising first three ideas of PAL as X axis and two types of data decisions as Y axis, six parts of adaptive adjustment are depicted in figure 2. The wavy line represents the approach of personalised adaptive learning(Peng et al., 2019).

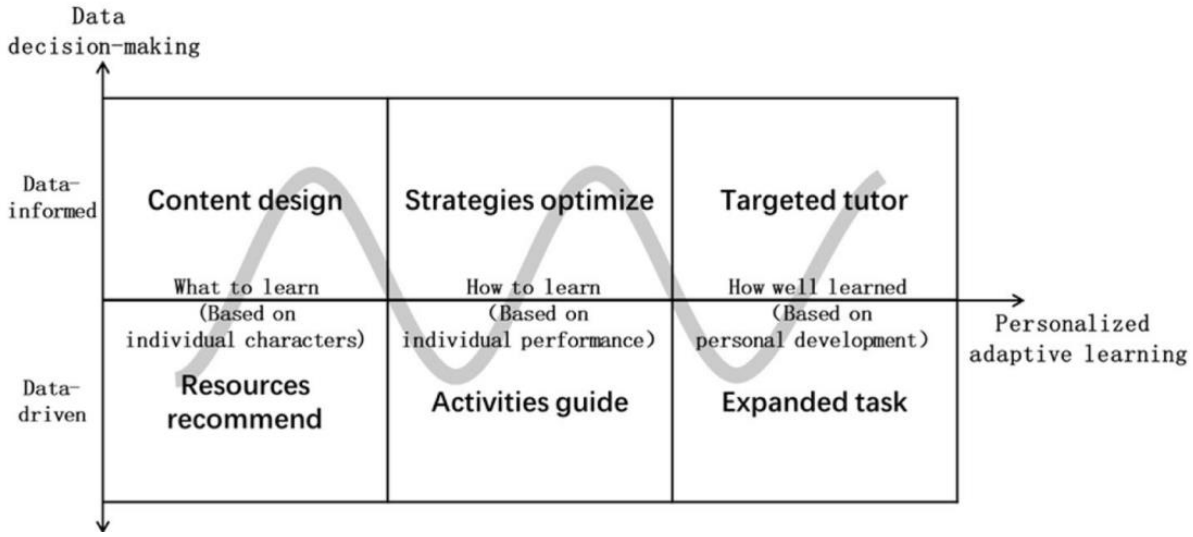

Figure 2. Three ideas of Personalised and Adaptive Learning (Peng et al., 2019)

Adaptive Personalised Learning Environment (APLE) may consist of three major units namely, Learner modelling Unit, Content Managing Unit and Learner Monitoring Unit(Raj & Renumol, 2018) and a block diagram is depicted in figure 3. Learner modelling Unit is instrumental in creating Learner Model (LM) based on the attributes of the learner. Specific learner attributes including learning style, preferences of mode of instruction delivery, and the level of knowledge are considered. Learning style may utilise Felder Silverman Learning Style Model (FSLSM), as it divides learners into diverse learning styles in four dimensions. CMU has two components, the learning object manager which personalises the learning resources and content recommendation engine. The Learner Monitoring Unit undertakes the assessment of present knowledge of the learner and constantly monitors the dynamic changing preferences of the learner (Raj & Renumol, 2018).

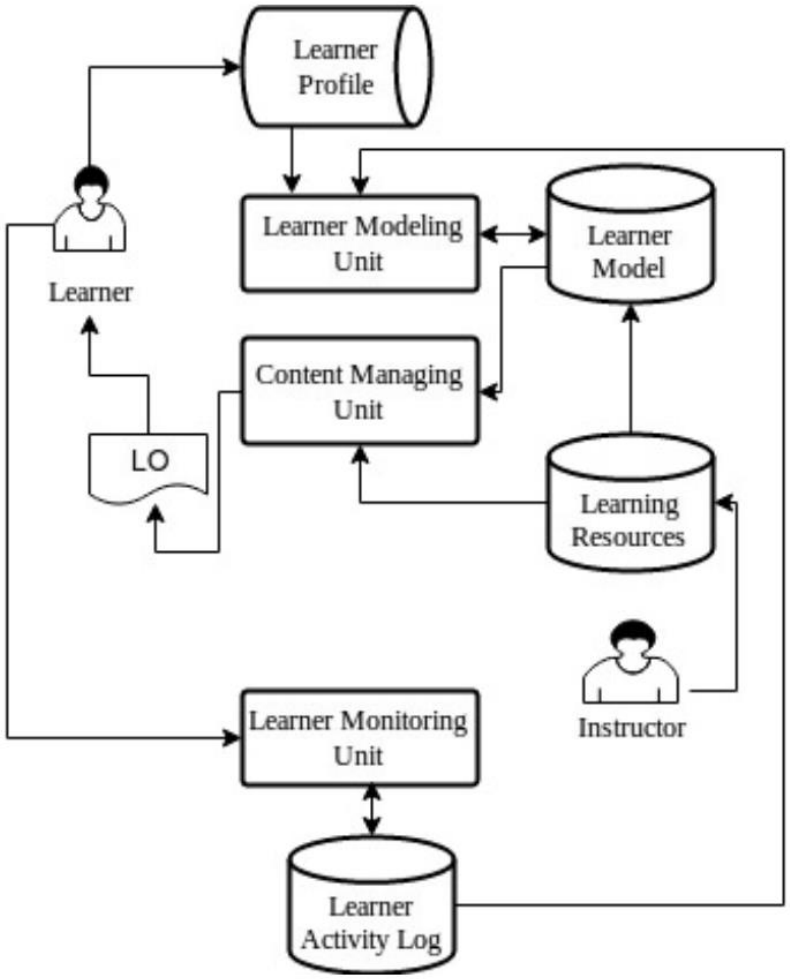

Figure 3. Components of Personalised and Adaptive Learning (Raj & Renumol, 2018)

Robots play a vital role in PAL. AI based teacher robots have applications in content delivery, administrative part of teaching including administrative feedback. Professor robots are being considered as a viable alternative for teaching assistants with who lack digital skills. Yuki, a robot lecturer is being utilised in Germany since 2019 in delivering lectures at The Philipps University of Marburg(*Professor Robot – why AI could soon be teaching in university classrooms | World Economic Forum*, n.d.). Protus is an adaptive and intelligent web-based programming tutoring system which is able to adapt to the interests and knowledge levels of learners. Protus provides learners with learning material and activities that fit their learning styles [21]. Various personalisation systems use permutation and combination of personalisation parameters (Essalmi et al., 2010a) and are well documented. Table 2 presents an important review of personalisation parameters and name of the E-learning systems employed(Essalmi et al., 2015) . Majority of the systems use 'Learner's level of knowledge' as an important personalization parameter.

Personalisation Parameters	Personalisation E-learning system
Learner's level of knowledge	Interbook, KOD,SIMBAD, Metalinks, INSPIRE, MLTutor,EPSILON, SIETTE, ELENA, e-aula, Protus, PASER, Lecomps5, AMDPC
language preference	KOD, ELENA
learning goals	KOD,SIMBAD, Metalinks, INSPIRE, ML Tutor, ELENA, e-aula, PASER
media preferences	SIMBAD, Metalinks, PERSO, AHA
Participation balance, progress on task, waiting for feedback	COLER
dimensions of the Felder–Silverman learning style	e-aula, AHA, Protus, AMDPC
Kolb learning cycle	AHA

Table 2. Personaisation parameters and various E-learning systems (Essalmi et al., 2015)

F. AN Overview of AI techniques used in Education 4.0:

Having reviewed the various dimensions of PAL based on AI, it is important to have an understanding of widely techniques and their applications. Bayesian networks, Fuzzy Logic (FL), Decision tree, Neural Networks, Genetic algorithms and Hidden Markov Models are few of the routinely used AI techniques in personalised learning systems(Khalid et al., 2017). A good and easy way of classifying AI techniques could be white and black box models. White-box models as the indicates, clearly indicate their behaviour, process, dependent and independent variables. This enables the seeker to understand the features and process with greater clarity. Examples include linear and decision/regression tree models. Diagonally opposite, the black-box models, do not indicate any idea of the internal working but only reveal the fundamental aspects coupled with extremely non-linear and opaque process (Khan et al, 2012). Boosting, deep-learning and random

forest models are few examples of the same. Various techniques that are used in e-learning along with applications are given in a table 3 below:

SL no	AI technique	Application in learning
White Box Approaches		
1	Fuzzy Logic	Assessment of learning and knowledge-related outcomes, task objectives as well as multiple criteria assessments, student modelling, determine the learning adaptation
2	Decision Tree	personalised learning paths, predicting student performance, adaptive teaching content
Black Box Approaches		
3	Neural network	forecast student‘s academic results, personalise learning objects to the user, model human behavior
4	Bayesian Networks	Student modelling in ITS, analyse the learning methods, profiling learners, self-learning models
5	Genetic Algorithms	Optimization of learning path, understanding preferences and needs
6	Hidden Markov Model	predict student’s behaviour, calculation of student learning path

Table 3: Various AI techniques and applications in PAL(Khalid et al., 2017)

G. Challenges of adoption AI Technology in Education 4.0:

The impact of AI in Education has been researched primarily in developed countries and has been a neglected field in developing countries (Roll & Wylie, 2016). Developing nations face various constraints in undertaking necessary technological and structural innovations. A comprehensive government policy on utilisation of AI in education is in infancy in many countries. The policy needs to incorporate new agencies and institutions in public sector to match the speed of AI innovations, Public-private partnerships, generate roadmaps and blue-prints, data privacy and the transparency of algorithms, and relevant bench mark parameters to measure the progress. Emerging discussions in developing countries towards using AI to promote social equality and education assume importance (UNESCO, 2019b). Lack of requisite data Privacy and security in AI based learning may encourage learners to explore other options and may bring down this edifice of learning. Boundaries, ownership of data and legitimacy of this data-intensive technology in AI based learning need to be carefully examined dynamically.

Challenges multiply in adoption of AI based learning due to inadequate infrastructure and absence of relevant digital competencies in teachers (Hunt et al., 2013) . Various research reports have suggested that the personalized and adaptive learning has been highly biased towards Western Educated Industrialized Rich and Democratic (WEIRD) nations (Henrich et al., 2010). AI may highlight and enhance the present inequalities and divides, resulting in certain sections of population getting excluded from AI bases learning. This would deepen the digital divide in digital transformation era (Hilbert, 2016). PAL may not succeed in adapting during commencement phase of the learning due to non-availability of personal data of learner. This is called cold start problem (Schein et al., 2002) . Cold start issue may influence the new learners to get demotivated because of incorrect initial recommendations (Mackness et al., 2010). Limitations of scarce and inadequate datasets, low infrastructure settings in developing countries and lack of technical competencies are a big challenge. Algorithm aversion and lack of trust when AI errs in its outputs, has a confusing effect in adoption of AI based learning (ben Eubanks, 2019).

As learning becomes more and more personalised and adaptive, human touch to the process of teaching and learning may slowly lose its relevance and create critical weaknesses to control the process effectively. Lack of human oversight in black box AI algorithms in learning can be undesirable and may not explain the rationale behind acceptance or rejection of student. AI in the initial stages of settling down, AI is like an infant, demanding more attention and care as AI lacks awareness of right or wrong. Microsoft's experiment with Tay ended when Tay was echoing racist comments and formulating new offensive content (Vincent, 2016)

One of the main flaws in implementation of AI technology in Education 4.0 is that, instead of addressing the present existing issues and problems faced by teachers, the institutes tend to encourage and adopt new ways of teaching which may collide with standard traditional practices. Further, certain new ways of teaching may be incorporated without rigorous assessment and evaluation of claimed benefits. Ideas of restricting AI based teaching to only cognitive and routine tasks, importance of human mentor is underestimated towards supporting the learning, socio-emotional and creative perspectives of teaching, that are beyond mere knowledge dissemination (UNESCO, 2019b) . The UNESCO Institute for Statistics (UIS) states the numerous hindrances in collection and exploitation of educational data efficiently and effectively (UNESCO, 2019b). Fixing the responsibility for undesirable actions in assessment or evaluation, likely loss of jobs in Education and anxiety of AI driven innovations are few more challenges which need to be addressed. The full potential of advances in technology towards transformation of education has often been hyped, although it is believed that potential is yet to be harnessed as expected in developed countries or developing countries (UNESCO, 2019a).

H. Conclusion:

Adaptive Personalized Learning based on AI is a key learning paradigm in Education 4.0 and promises to enhance learning outcome in the era of educational transformations. Even though learning is rapidly transforming in Education 4.0, still there is a lack of clarity about the consequent evolution of learning process, role of teacher, 21st century job profiles and skills and how AI technology would be adopted seamlessly without knee-jerk reactions by all stakeholders. The current paper reviewed the progress of IR 1.0 to 4.0 along with transformations in Education 1.0 to 4.0. In particular, the paper aimed at attaining a two-fold objective. On one hand, it tracked the paradigm shifts in Industrial Revolution and Education including Education 4.0. The paper attempted, on the other hand, to identify the multiple applications of AI in Education 4.0 with

special emphasis on Personalised Adaptive Learning. AI is a dynamic field that spurs innovations at an exponential pace and therefore enhances countries competitiveness. However, there is considerable room for cooperation in adopting AI in education 4.0 in this uncertain and constant changing domain. UNESCO, as per mandate, is an organization competent to provide necessary technical and framework assistance to countries, attempting to move Education 4.0. The challenges in adoption of AI technology are quite dynamic and requires concerted effort by all stakeholders.

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Digital Marketing For Business Growth

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This report is prepared on the basis of primary and secondary data. This report is specific to Media & Entertainment segment.

SYNOPSIS

The Digital wave has arised and hit every sector, business and person. It is right to say that apart from BEING HUMAN, BEING Digital has become a necessity.
Indian M&E sector is at a digital crossroads today. Every segment of the industry, including print, TV, radio, film, experiential marketing and OTT, is being impacted by digitisation, and is showing growth, consolidation and innovation. It presents an excellent opportunity for companies looking at establishing and expanding their presence in the country, and making the most of the Indian digital growth story. Together with films, of which India is the biggest producer by the number of titles annually, TV and print make up three-fifths of the current industry revenue. Third in line being digital. OOH and radio having a share of less than 10% each. With the fast growth of digital medium these shares are bound to change in the coming years. Hence through this report the role of digital marketing in business growth has been studied and the research is specific to Media and Entertainment segment. This report covers the strategies used by Media houses, Production Houses, Agencies for business growth through digital marketing.

INTRODUCTION

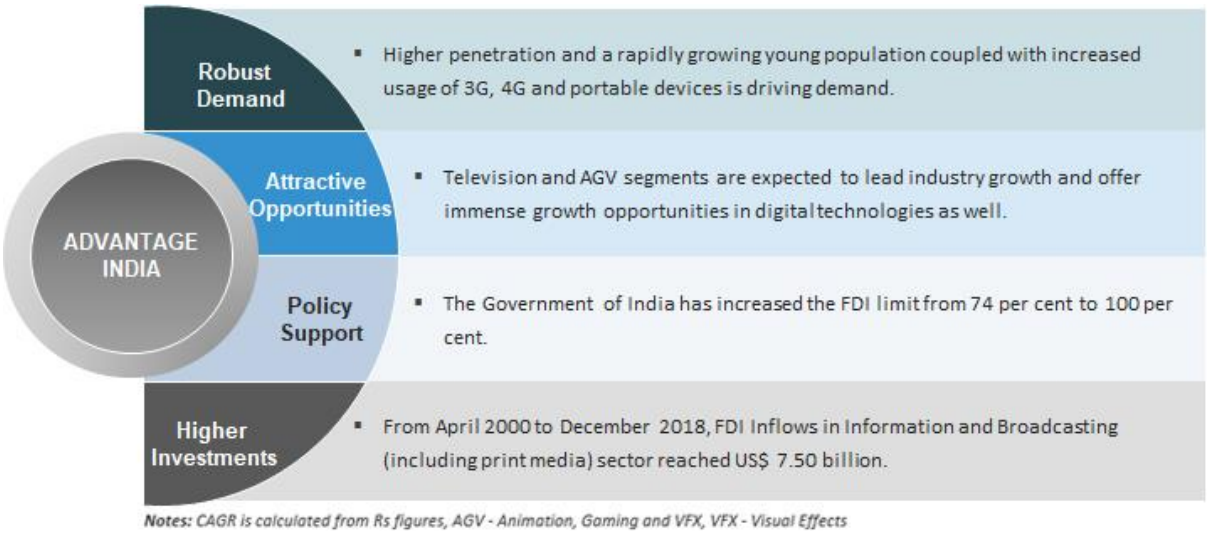


FIGURE 1

2.1 MEDIA & ENTERTAINMENT SECTOR IN INDIA

The Indian Media and Entertainment (M&E) industry is a sunrise sector for the economy and is making high growth strides. Proving its resilience to the world, the Indian M&E industry is on the cusp of a strong phase of growth, backed by rising consumer demand and improving advertising revenues. The industry has been largely driven by increasing digitisation and higher internet usage over the last decade. Internet has almost become a mainstream media for entertainment for most of the people.

The Indian advertising industry is projected to be the second fastest growing advertising market in Asia after China. At present, advertising revenue accounts for around 0.38 per cent of India's gross domestic product.

Market Dynamics

Indian media and entertainment (M&E) industry grew at a CAGR of 10.90 per cent from FY17-18; and is expected to grow at a CAGR of 13.10 per cent to touch Rs 2,660.20 billion (US$ 39.68 billion) by FY23 from Rs 1,436.00 billion (US$ 22.28 billion) in FY18. India's media consumption has grown at a CAGR of 9 per cent during 2012-18, almost nine times that of US and two times that of China. The industry provides employment to 3.5-4 million people, including both direct and indirect employment in CY 2017.

India's online gaming industry is expected to grow at a CAGR of 22 per cent between FY18-23 to reach Rs 11,900 crore (US$ 1.68 billion) in FY23

India's advertising revenue is projected to reach Rs 1,232.70 billion (US$ 18.39 billion) in FY23 from Rs 608.30 billion (US$ 9.44 billion) in FY18.

Recent development/Investments

The Foreign Direct Investment (FDI) inflows in the Information and Broadcasting (I&B) sector (including Print Media) in the period April 2000 – March 2019 stood at US$ 8.38 billion, as per data released by Department for Promotion of Industry and Internal Trade (DPIIT).

Dailyhunt, a regional language news aggregator run by Verse Innovation Pvt Ltd, will receive investment of US$ 60 million in a new funding round led by Goldman Sachs Investment Partners.

As of September 2018, Twitter announced video content collaboration with 12 Indian partners for video highlights and live streaming of sports, entertainment and news.

As of August 2018, PVR Ltd acquired SPI Cinema for worth US$ 94.42 million.

In H12018, 5 private equity investments deals were recorded of worth US$ 115 million.

The Indian digital advertising industry is expected to grow at a Compound Annual Growth Rate (CAGR) of 32 per cent to reach Rs 18,986 crore (US$ 2.93 billion) by 2020, backed by affordable data and rising smartphone penetration.

India is one of the top five markets for the media, content and technology agency Wavemaker where it services clients like Hero MotoCorp, Paytm, IPL and Myntra among others

After bagging media rights of Indian Premier League (IPL), Star India has also won broadcast and digital rights for New Zealand Cricket upto April 2020.

Government Initiatives

The Telecom Regulatory Authority of India (TRAI) is set to approach the Ministry of Information and Broadcasting, Government of India, with a request to fastrack the recommendations on broadcasting, in an attempt to boost reforms in the broadcasting sector. The Government of India has agreed to set up the National Centre of Excellence for Animation, Gaming, Visual Effects and Comics industry in Mumbai. The Indian and Canadian Government have signed an audio visual co-production deal to enable producers from both the countries exchange and explore their culture and creativity, respectively.

The Government of India has supported Media and Entertainment industry's growth by taking various initiatives such as digitising the cable distribution sector to attract greater institutional funding, increasing FDI limit from 74 per cent to 100 per cent in cable and DTH satellite platforms, and granting industry status to the film industry for easy access to institutional finance.

2.2 SPENDS IN MEDIA & ENTERTAINMENT SECTOR

The media and entertainment industry in India has reached a size of Rs 1,63,100 crore in FY'19, posting a growth of 13 per cent, as well as clocking a CAGR of 11.5 per cent over the period FY15-FY19, stated KPMG India's 11th edition of its Media and Entertainment (M&E) report. Titled 'India's Digital Future: Mass of Niches', the report also said that the digital market is poised to become the second largest segment in India after TV, and also attract the maximum advertising spend by FY'22.

The M&E industry grew 13 per cent in FY19 on the back of rapid growth in digital user base and consumption, coupled with growing regional demand and monetisation, the report said.

The M&E industry is expected to post a CAGR of 13.5 per cent over FY19-FY24, to reach a size of Rs 3,07,000 crore in FY'24, the report stated. This will be on the back of a greater focus on monetisation of emerging digital business models, strong regional opportunities and favourable regulatory and operating scenarios across traditional business, it said.

However, it also identified headwinds like the New Tariff Order (NTO) implementation uncertainties, and early signs of economic slowdown, which have pulled down the overall growth.

"With no major constraining factors, digital is expected to be a dominant force going forward and in FY'23, it is likely to be the second largest segment after TV and attract the highest marketing spend among all media formats. In 2019, as digital behaviour evolves, subscription models will have a greater role in monetisation of digital platforms. Further, evolving technologies are also presenting opportunities for companies in the media and entertainment industry to achieve greater operational efficiencies," said Girish Menon, Partner & Head Media & Entertainment, KPMG in India.

Smartphone penetration and low data costs, as well as investments in original and regional digital content, were identified as favourable factors for digital access and content supply respectively, and these factors will continue to drive up online consumption.

The report drew attention to the "growing importance of regional language markets" in India. "With the digital migration of English speaking audiences almost complete, most new users coming online – and there are expected to be 500 million of them by 2030 – will access the internet in a local language," it said.

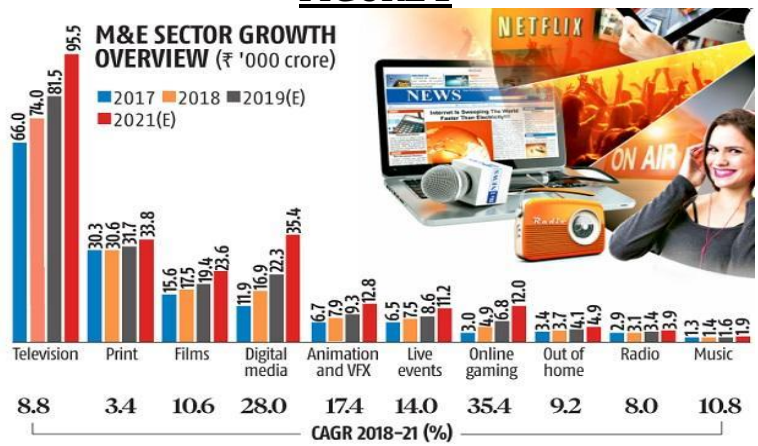
Satya Easwaran, Partner & Head Technology, Media and Telecom, KPMG in India, said that the "digital disruption" has forced a pivot of business models in media and entertainment from a B2B2C model to a D2C one, and that segmentation and demographic, psychographic and behavioral profiling will become increasingly important.

"In the coming years, it will be hard to ignore the pessimistic signals emerging from global economies but they will not have long term impacts and are unlikely to alter the strong fundamentals and momentum of M&E consumption, especially digital, in India. As an industry, we will remain upbeat on the prospects for both," said Menon.

As content delivery changes, so, too, will the way M&E companies go to market. At a fundamental level, the concept of who the customer is will shift. The M&E industry was built on business-to-business (B2B) relationships. In the digital world, however, survival depends on building relationships directly with customers in a direct-toconsumer (D2C) model. M&E companies' relationship to pricing and margins is changing. If leveraged strategically, the D2C model will allow them to regain a more advantageous place in the value chain with greater pricing influence than they have had during early digital market developments. This, in turn, will help restore top-line growth and margins. The game industry is already well along the D2C path. Distribution channels are changing and disaggregating. Consumers will continue to have access to games through online "apps" and social networks. However, increasingly, they can go directly to game companies, many of which see the D2C model as a promising way to build their business.24 The D2C model requires an increasingly sophisticated and multidimensional understanding of the customer. Marketing to audiences based on demographics (age, income, etc.) will still exist. But in the digital world, demographics alone don't provide a complete picture of customers, since their physical and digital lives are often very different. To make their digital business models work, M&E companies must engage communities, social networks and a new set of psycho-graphic metrics to find, target and market to consumers. Advertising agencies and marketing services companies will continue to play an important role in enabling new D2C models, by helping M&E companies to collect and analyze an entirely new and different set of consumer metrics and by bringing to bear their expertise in consumer insights. This symbiotic relationship will continue to adapt and evolve, as advertising agencies take on more of an advisory role — a role that will improve the agencies' value proposition, and by extension agency margins.

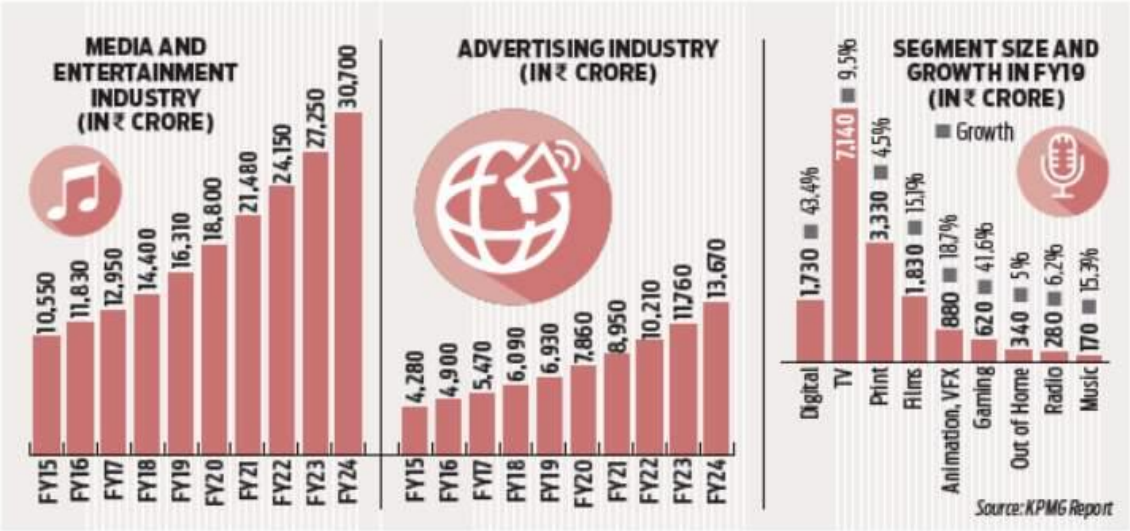
2.3 GROWTH OVERVIEW AS PER BUSINESS STANDARD

FIGURE 2



GROWTH OVERVIEW AS PER KPMG

FIGURE 3



2.5 DIGITAL MARKETING FOR BUSINESS GROWTH

With the change and evolution of modern technologies, small and medium businesses are doing everything they can to keep up, which can be said true for the rest of human society. Brick-and-mortar businesses are either changing their business models to an online one, or beefing up existing marketing efforts with digital marketing strategies – in an attempt to capture a growing and very lucrative online marketplace.

For it is the process of attracting targeted audiences online that will spell the difference between a successfully thriving business – and a failed one. Even if you receive tons of daily traffic to your website, they would not amount to anything unless they convert to leads or sales. In the digital arena where business and commerce are heading to, Digital Marketing tools and techniques provide business owners the best chances for competition, survival and even business growth.

The following reasons will show you why the use of digital marketing is not only investment-wise decision but also an effective marketing channel that can help you grow your business.

1. *Because Digital Marketing levels the online playing field*
2. *More cost effective than traditional marketing.*
3. *Delivers Conversion*
4. *Facilitates Interaction with targeted audience*
5. *It caters to the mobile consumers*
6. *Its builds brand reputation*
7. *Provides better ROI for your marketing investments*
8. *Earns people's trust*
9. *Entices people to take favourable actions*

10. Makes you ready for the internet of things
11. Ensures online business survival

2.6 DIGITAL MARKETING FOR MEDIA HOUSES

TELEVISION CHANNELS

As M&E companies explore new content and distribution models, they must be careful to protect what still works. Television distribution illustrates this difficult balancing act. Users can stream or download some television content, but cable and broadcast networks still hold back the majority of their shows for traditional distribution. There is some talk about moving much more television content online. However, the current system still brings tremendous value to its participants. Cable and satellite services are in most homes and people are accustomed to using them. These distributors still pay a lot of money per month per subscriber to cable (and increasingly, broadcast) networks. In the current environment, a cable network would likely find it difficult to generate equivalent revenue by itself. M&E companies must balance the expected digital rewards with the risk of harming their current distribution partners which still bring in billions in revenues. Indeed, while television ad revenues have been impacted by media fragmentation, they are still large. The major studios also want to create new markets through digital distribution. However, like television, almost all their revenue comes from traditional forms of distribution. Therefore, as they pursue digital initiatives, they must be careful not to jeopardize the biggest part of their business.

VIACOM company which owns COLORS channel group has its own OTT platform VOOT as well. SONY group has SONYLIV. ZEE Group has its ZEE5 app. STAR group of channels has HOTSTAR. To cater the mobile savy crowd the top Telvision channel companies have gone digital and have monetized their digital handles as well. Their respective Youtube channels too have been monetized which are used to show teasers of upcoming shows, movies and other content. Apart from broadcasting shows which run on their satellite channels, these OTT platforms have original web series which is broadcast only on OTT platforms. News Channels like NewsNation, Zee News, News24, News18, etc too have monetized their digital handles i.e their webportals/mobileapp. Each of these television channels have successfully started to monetize their digital handles. With monthly unique users in lakhs and millions, digital handles of respective channels have risen as one of the competitors to the satellite channels itself. Satellite Channels which fail to grow their digital business will cease to exist in the next 10 -15 years.

FIGURE 4

WEBPORTAL/MOBILE APP	MONTHLY UNIQUE VISITORS
ZEE 5	**76.4mn**
VOOT	**25 mn**
Newsnation.com	**30lk**
News24.com	**25lk**
News18.com	**100mn**
NDTV.com	**75mn**
Zeenews.com	**50mn**

NEWSPAPER PUBLICATIONS

It is rightly said that for growth of a business, methods like forward integration, backward integration, diversification etc is necessary for sustainable growth. Print Media which even today has its presence in advertising world is facing tough challenges from its counterpart digital media. The war has already begun and killing threat hangs over the life of print media. It is a matter of life and death for the businesses dealing in print media especially news publications. The leading newspapers in the country have started penetrating heavily in the digitial market to ensure their survival. Right from monetizing their webportals and mobile apps to their social media handles. They are leaving no stone unturned to mark their place in digital media same as they had in print media.

FIGURE 5

WEBPORTAL/MOBILE APP	MONTHLY UNIQUE VISITORS
Hindustantimes.com	33mn
TimesofIndia.com	56 mn
Indianexpress.com	47.4 mn
Midday.com	3 mn
TheHindu.com	21 mn
Hindustanlive.com	20 mn
Patrika.com	54 mn

Radio

Currently at its worst position, this medium has been badly hit by the digitial wave. With limited scope to digitize, no alternatives have yet been effective in its survival. Soon there will be time where Radio will become just another antique.

Entertainment News portals

These webportals/Social media handles are dedicated to entertainment sector. The companies under these categories run completely on basis of digital services. These companies have monetized their social media channels and webportals as well. With followers in millions and followers with love for entertainment, these portal sare giving tough competition to leading newsportals. Such portals have become a must in every ad campaign plan

FIGURE 6

WEBPORTAL/MOBILE APP	MONTHLY UNIQUE VISITORS
Scoopwhoop.com	35 mn
Pinkvilla.com	22 mn

Desimartini.com	4 mn
Koimoi.com	2.5 mn
Bollywoodbubble.com	4.5 mn
Bollywoodlife.com	4 mn
Filmibeats.com	17 mn

2.7 DIGITAL MARKETING FOR PRODUCTION HOUSES

Considering the big production houses like T-series, YRF, Shemaroo etc. These production houses have social media handles which have been monetized. With millions of followers, these productions houses earn millions of rupees for every single video uploaded on their youtube channel. These videos can be original short films, webseries, upcoming movie promos, songs, old songs from their music library, old movies from their movie library.

2.8 DIGITAL MARKETING FOR AGENCIES

Agencies working in this sector, have to widen their list of services offered for business growth. Using the traditional mediums along with the new digital channels of every medium must be used in every ad campaigns run by them.

2.9 DIGITAL MARKETING FOR FILMS

The Film industry is constantly on a look out of new and advanced marketing techniques to promote a movie and target a mass audience.Today film promotions have gone beyond releasing the teasers and trailers for the movie in the theaters. The marketing team spends enormous efforts to formulate well-structured film marketing strategies so that they can get the audience queuing up to buy the tickets. Digital marketing in film industry is becoming an effective way to get the audience involved and develop a strong personal relationship with them. Digital marketing scope encompasses live streaming of music launches, Google hangout with the crew, social media contests, movie based games, digital advertisements on Youtube and a lot more. This shift to the digital medium that is being used to promote the upcoming release of the movie is a new and effective way of engaging with the audience and establishing a stronger connection with them. The best advantage of using this medium is that the effectiveness of the strategy can be easily measured using performance related metrics. This helps the digital marketing experts to make insightful decisions for future strategies so that they can reduce costs and increase the effectiveness of the marketing campaigns.

Why YouTube is biggest platform for Movie Promotions?

After the movie is made, the producer of the film looks at how to promote the movie so that it does well at the box office. YouTube is the best social media platform that reaches out to

millions of audience who watch videos daily. A YouTube campaign is a cost effective way of promoting the movie to a targeted set of audience. The trailer that narrates the story line or the behind the scenes highlights can be shared on YouTube to grab the attention of the viewers. This video promotion helps in catching the attention of the audience and creates a hype around the movie.

Today many movies are being promoted on YouTube before their release. The visual effects, music and the effective voice that narrates the story line traps the audience while watching the promos. The press conference videos where the actors share their experiences while making the movie, video games where the players experience the characters in movie, faults in the movie are other ways one can hold the attention of its audience. Sharing such content on YouTube has become an important tool for getting exposure for the new release.

How the Social Media is increasing Film making ROI?

A trailer of the upcoming movie in the theaters is just not enough to make a mark at the box office. With the new digital platforms production houses have taken Film promotions to a whole new level. They no longer use the conventional means of reaching out to their fans. Movie promotion on Facebook, Instagram and Twitter Marketing have become the in thing. Social Media helps in engaging the audience in the movie and creates excitement around it before it releases.

The film Baahubali is a perfect example to show how the potential of social media and digital marketing space can be used to earn popularity. Innovative Facebook Campaigns like the Baahubali Profile Picture Frame' contest, 'Baahubali Comics' and Baahubali-themed animated stickers inside FB Messenger app generated a lot of buzz. A fan base of 4.21 million on the official Facebook page speaks volumes about the impact these campaigns created. The question "Why Kattappa killed Baahubali" became a topic of household conversation. It flooded the social media with memes and fan theories. 'Making-of' and 'Behind-the-scene' videos on the official YouTube channel kept the audience captivated. Followers on Instagram and Twitter shows the magnitude of craze that developed before the movie got released. The result was that the movie topped the Google "Trending Movies' list in the year 2015. It broke major box office records and became the first ever Indian movie to cross over Rs. 1000 crores worldwide in 10 days.

How Celebrities take part in Movie Campaign on Facebook & Twitter?

The work of Movie promotion on Facebook is not just limited to the digital marketers. Even celebrities who are a part of the movie use the social media platform to connect with their audience. The viewers of today want to know everything related to the movie actors and the making of the movie. Facebook and Twitter helps the actors to get close to their fans. The fans follow the Celebrities Facebook profiles even during the days the movie is being made. Engaging the audience during the making of the movie, disclosing information relating to shooting locations, looks and outfits is a good way to capture their interest. Celebrities' twitter profiles also go a long way in generating interest and curiosity about the movie. By engaging the audience during the making of the film, letting them experience the story, asking questions, fun activities, or by sharing one's own feeling about the movie' the celebrities can help in Movie promotion on twitter.

Digital marketing jobs have touched almost every type of industry and film industry is no exception. The production houses are increasing their spendings on digital media channels to

promote their upcoming film. Since the movie promotion starts only a couple of weeks before the release date the intent of the marketer is to create maximum impact within a short duration. Social media marketers can help in achieving this goal. The Digital marketers in Film Industry use Facebook, YouTube and other sharing platforms to upload and share movie trailers and other related content. Audience is interested in Memes, Mash up videos and Parody videos relating to the new releases.

3. LITERATURE REVIEW

The future of Indian news media is mobile-first and platform-dominated, with 9% "very likely" to pay for news, according to a new report from the Reuters Institute for the Study of Journalism (RISJ).

Findings from the report has placed India as a mobile-first news market with smartphones being identified as their primary device for news consumption by an overwhelming 68% of respondents, markedly higher than similar global markets like Brazil and Turkey.

Audiences are largely accessing news via 'side-doors' such as search (32%) and social media (24%), rather than going directly to sources of news (18%), the study found.

The first India Digital News Report 2019, published with the support of prominent national media groups like The Hindu, Indian Express, The Quint and Press Trust of India, looks at news consumption patterns, trust in the news, media literacy and views on disinformation among India's English-language news users with internet access.

"Indians are rapidly embracing digital, mobile, and social media, and advertisers are bound to follow. This will be the end of the era in which Indian news media could expect advertising to cover their costs and means that it is critically important that Indian news media develop new, sustainable business models for online news." - *Rasmus Kleis Nielsen, Director of the RISJ and co-author of the report.*

Interestingly, 9% of the participants who already don't donate or pay for news responded that they are "very likely" to pay for news in the next year, while another 31% said they were "somewhat likely" to pay.

Given the large number of population that consumes news in India, this could translate into significant revenue.

"Interesting revelations, especially about 9% of respondents willing to pay for reading news in digital. This augurs well for the news media industry's future. If one considers 460 million internet users in India, and even a small percentage of them willing to pay for consuming news digitally, news media companies can take a cue from it," said Magdoom Mohamed, Managing Director, WAN-IFRA, South Asia.

The explosive growth in internet access in India in the last few years has clearly turned out to be a shot in the arm for the digital media consumption and has significantly impacted the nature of public debate in the country.

These shifts are expected to continue impacting the practice of journalism, media organisations and the business of news.

The report also notes that in the run-up to the country's elections, billed by some as the world's largest democratic exercise, many are concerned that expressing political viewpoints online could affect how friends or family (49%) and colleagues or acquaintances (50%) see them, with a majority worried that doing so could find them in trouble with the authorities (55%).

The report, which finds overall trust in news (36%) is lower than other comparable markets, points out that a majority (57%) expresses concerns over whether online news is real or fake, with many concerned with hyper partisan content (51%), poor journalism (51%), as well as news that is false (50%).

Key findings from the study

1. 68% respondents identify smartphones as their primary device for consuming news and a large portion of them access news through platforms rather than directly from the source.
2. Overall trust in news is as low as 36%, however, respondents express higher levels of trust in news they get through search (45%) and social media (34%) than respondents in many other countries.
3. Online news (56%) outpaces print media (16%) as the primary source of news for users under 35.
4. An equal number of respondents (52%) use WhatsApp and Facebook as a source of news.
5. Significant number of respondents are ready for more personalised mobile news alerts - 12% already use alerts as their main source of online news, 31% of those who already don't donate or pay for news "somewhat likely" to pay, and 9% "very likely" to pay for news in the next year.

4. OBJECTIVES

- To understand customer's preference for Online Advertisements
- To check whether people preferring Online Advts prefer Online Advts for movies as well.
- To find out the extent of awareness about Entertainment websites
- To study the current trends in digital marketing followed by Media Houses, Agencies and Production Houses to optimize the advertising campaign results

5. HYPOTHESIS

NULL HYPOTHESES Ho

1) People's preference for online advertisements does not depend on their preferred medium to read news
2) People's preference for online advertisements about movies does not depend on their age
3) People's preference for online advertisements does not depend on their Gender

4) ALTERNATIVE HYPOTHESES H1

1) People's preference for online advertisements depends on their preferred medium to read news
2) People's preference for online advertisements about movies depends on their age
3) People's preference for online advertisements depends on their Gender

6. RESEARCH DESIGN

Initially a rough draft was prepared by keeping in mind the objective of the research. A pilot study was undertaken in order to know the accuracy of the questionnaire. The final questionnaire was arrived at only after certain important changes were incorporated. Questionnaire was in the form of Google form. The statistical tool used is SPSS.

SAMPLE DESIGN
Probability Based Simple Random Sampling

TYPE OF RESEARCH
Descriptive

SAMPLESIZE
172

LOCATION
Mumbai / Navi Mumbai /Thane

PRIMARY DATA
Survey using Questionnaire

SECONDARY DATA
News articles and reports

7. ANALYSIS & FINDINGSS

The Findings of the survey done through google form have been presented below in the form of pie charts. The Analysis is done by using SPSS software as well.

FINDINGS

FIGURE 7

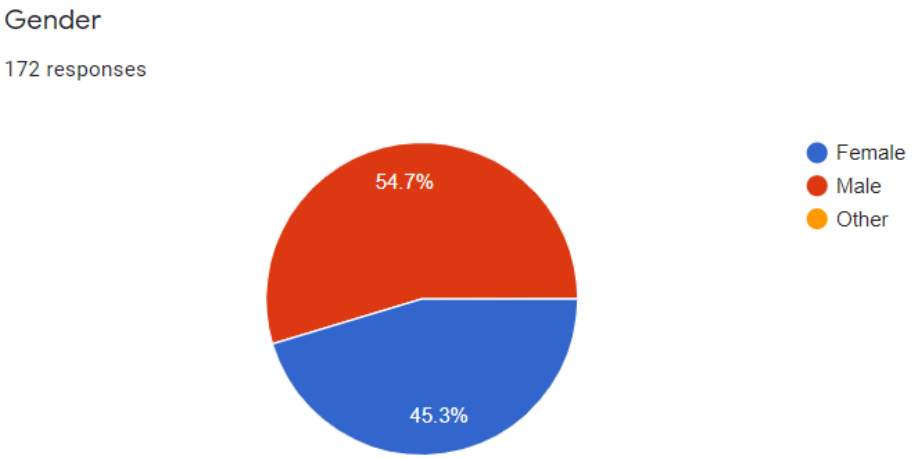


FIGURE 17

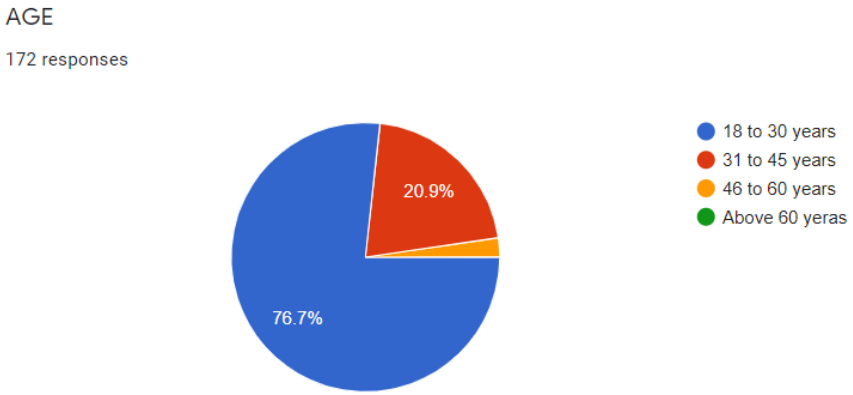
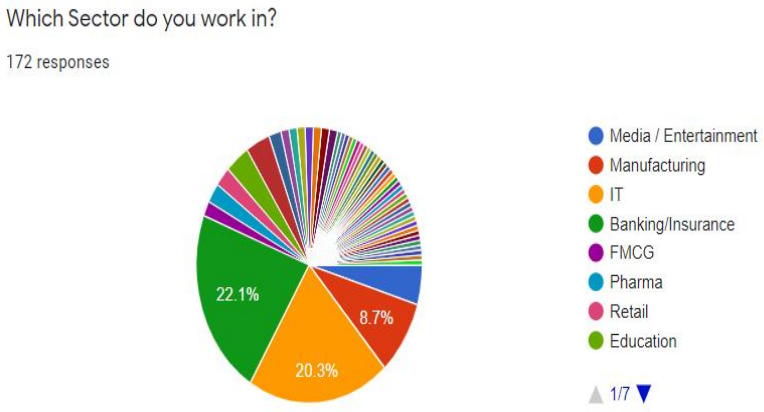


FIGURE 18



CASE 1

Ho – People's preference for online advertisements does not depend on their preferred medium to read news

H1 – People's preference for online advertisements depends on their preferred medium to read news

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Are you FOR or AGAINST Online Advertisements about movies? * Which medium do you prefer to read any news ?	171	100.0 %	0	0.0%	171	100.0 %

Are you FOR or AGAINST Online Advertisements about movies? * Which medium do you prefer to read any news ? Crosstabulation						
			Which medium do you prefer to read any news ?			
			Mobile Apps	Newspaper	Webportals	Total
Are you FOR or AGAINST Online Advertisements about movies?	Against	Count	14	5	4	23
		Expected Count	14.1	4.4	4.4	23.0
	For	Count	91	28	29	148
		Expected Count	90.9	28.6	28.6	148.0
Total		Count	105	33	33	171
		Expected Count	105.0	33.0	33.0	171.0

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.133[a]	2	.935
Likelihood Ratio	.132	2	.936
N of Valid Cases	171		
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 4.44.			

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.028	.935
	Cramer's V	.028	.935
N of Valid Cases		171	

Considering 5% Level of significance, The LOS obtained is greater than 5%. Hence we accept the NULL Hypothesis Ho. We can conclude than peoples preference for online advertisements of movies doesnot depend on their preferred medium to read news.

CASE 2

Ho – Peoples preference for online advertisements about movies does not depend on their age
H1 – Peoples preference for online advertisements about movies depends on their age

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AGE * Are you FOR or AGAINST Online Advertisements about movies?	171	100.0 %	0	0.0%	171	100.0 %

AGE * Are you FOR or AGAINST Online Advertisements about movies? Crosstabulation					
			Are you FOR or AGAINST Online Advertisements about movies?		
			Against	For	Total
AGE	18 to 30 years	Count	19	112	131
		Expected Count	17.6	113.4	131.0
	31 to 45 years	Count	4	32	36
		Expected Count	4.8	31.2	36.0
		Count	0	4	4

	46 to 60 years	Expected Count	.5	3.5	4.0
Total		Count	23	148	171
		Expected Count	23.0	148.0	171.0

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.916[a]	2	.633
Likelihood Ratio	1.456	2	.483
N of Valid Cases	171		
a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .54.			

Symmetric Measures			
		Value	Approximate Significance
Nominal by Nominal	Phi	.073	.633
	Cramer's V	.073	.633
N of Valid Cases		171	

Considering 5% Level of significance, The LOS obtained is greater than 5%. Hence we accept the NULL Hypothesis Ho. We can conclude than people's preference for online advertisements of movies doesnot depend on their age.

CASE 3

Ho – People's preference for online advertisements does not depend on their Gender
H1 – People's preference for online advertisements depends on their Gender

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent

Are you FOR or AGAINST Online Advertisements about movies? * Gender	171	100.0 %	0	0.0%	171	100.0 %

Are you FOR or AGAINST Online Advertisements about movies? * Gender Crosstabulation

			Gender		
			Female	Male	Total
Are you FOR or AGAINST Online Advertisements about movies?	Against	Count	11	12	23
		Expected Count	10.5	12.5	23.0
	For	Count	67	81	148
		Expected Count	67.5	80.5	148.0
Total		Count	78	93	171
		Expected Count	78.0	93.0	171.0

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.052[a]	1	.819		
Continuity Correction[b]	.000	1	.997		
Likelihood Ratio	.052	1	.819		
Fisher's Exact Test				.826	.496
N of Valid Cases	171				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.49.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
	Phi	.018	.819

Nominal by Nominal	Cramer's V	.018	.819
N of Valid Cases		171	

Considering 5% Level of significance, The LOS obtained is greater than 5%. Hence we accept the NULL Hypothesis Ho. We can conclude than people's preference for online advertisements of movies does not depend on their Gender.

CASE 4

To check whether people preferring Online Advts prefer Online Advts for movies as well.

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Online Advt of movies * Onlin advt	171	100.0 %	0	0.0%	171	100.0 %

Online Advt of movies * Onlin advt Crosstabulation					
			Onlin advt		Total
			1	2	
Online Advt of movies	1	Count	126	22	148
		Expected Count	113.4	34.6	148.0
	2	Count	5	18	23
		Expected Count	17.6	5.4	23.0
Total		Count	131	40	171
		Expected Count	131.0	40.0	171.0

Symmetric Measures					
		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.511	.080	7.727	.000[c]
Ordinal by Ordinal	Spearman Correlation	.511	.080	7.727	.000[c]
N of Valid Cases		171			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

We can conclude that People's preference of Online Advt and People's Preference for Online advt of movies have a correlation of 51.1%.

CASE 5

To check whether the people using voot use Hotstar as well.

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Which of the OTT platforms do you use ? (Leave blank if you don't use any) [Voot] * Which of the OTT platforms do you use ? (Leave blank if you don't use any) [Hotstar]	170	99.4%	1	0.6%	171	100.0 %

Which of the OTT platforms do you use ? (Leave blank if you don't use any) [Voot] * Which of the OTT platforms do you use ? (Leave blank if you don't use any) [Hotstar] Crosstabulation

			Which of the OTT platforms do you use ? (Leave blank if you don't use any) [Hotstar]			
			1	2	3	Total
Which of the OTT platforms do you use ? (Leave blank if you don't use any) [Voot]	1	Count	17	20	7	44
		Expected Count	11.4	19.9	12.7	44.0
	2	Count	2	8	3	13
		Expected Count	3.4	5.9	3.7	13.0
	3	Count	25	49	39	113
		Expected Count	29.2	51.2	32.6	113.0
Total		Count	44	77	49	170
		Expected Count	44.0	77.0	49.0	170.0

Symmetric Measures					
		Value	Asymptotic Standard Error[a]	Approximate T[b]	Approximate Significance
Interval by Interval	Pearson's R	.201	.074	2.656	.009[c]
Ordinal by Ordinal	Spearman Correlation	.195	.074	2.575	.011[c]
N of Valid Cases		170			
a. Not assuming the null hypothesis.					
b. Using the asymptotic standard error assuming the null hypothesis.					
c. Based on normal approximation.					

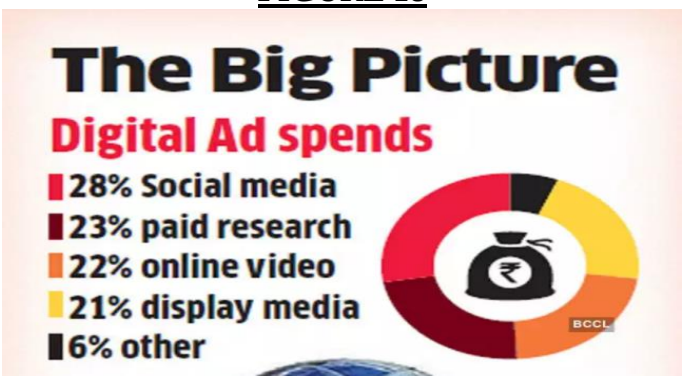
We can conclude that the overlap among the users of Voot and Hotstar is low as the Correlation between them is 0.201 i.e 20%

8. SCOPE & LIMITATIONS

The Indian Media and Entertainment industry is on an impressive growth path. The industry is expected to grow at a much faster rate than the global average rate. The rural region is also a potentially profitable target.

The share of digital in India's advertising space expanded in 2019, with spending on this media type rising about a quarter, even as revenue for the broader industry climbed a shade below 10%, albeit on a much larger base. Data from Dentsu Aegis Network (DAN) showed that digital ad spend climbed 26% last year to reach Rs 13,683 crore. A DAN report also maintained that digital advertising will likely maintain a 27% rate of growth in 2020. "The media and advertising industry is shifting at a rapid speed and digital is certainly taking charge," said Ashish Bhasin, CEO, APAC and chairman, India - DAN. "This year is expected to witness a major change in advertising in India, with digital becoming a bigger medium."To be sure, India remains one of the world's major advertising markets where print readership and advertising spend continue to expand. In Entertainment sector Television accounts for largest share of media spends at 39%, followed by print 29% and digital 20%.

FIGURE 18



Digital Media is giving a tough competition to Television and Print industry. Digital media being faster and easier to use and access and will have a year on year growth and will eat upon the market share majorly from television business and secondly from print business. In Digital Ad spends where social media takes away the major chunk, promotion through display media is on the rise.

However a major Disruption lies ahead with Jio coming up with First day First show on its platform. Only time will tell what is stored for M&E sector.

9. CONCLUSION

Digital Marketing in Media & Entertainment sector comprises of 20% of the market share in terms of Advertisement spends. Through this report we have learnt the digital marketing strategies used by Media house', Production House', Agencies and Films. In current scenario, the use of these digital services in ad campaign along with the traditional mediums will make an ad campaign more impactful. Through Primary data we can conclude:

- 61% people prefer to read news through mobile apps. The remaining share is equally divide among people who prefer newspapers and webportals.
- 76.7 % people prefer online advertisements. However, a major chunk of 23.3 % does not prefer online advertisements. This ratio helps to optimize Ad campaign plan.
- 86.6% people prefer online advertisements related to movies. This shows that people who do not prefer general online advertisements, prefer online advertisements for movies only.
- A larger chunk of people in the range of 70-80% people are not aware about the webportals dedicated to entertainment news. However these portals do have a millions of followers from other parts of the country.
- Social Media handles like Youtube, Instagram, twitter are used by majority on daily basis. It is through these mediums that people come to know about movies first. These foreign companies are giving tough competitions to Indian Media.
- Bookmyshow too plays an important role in being the first to tell people about the upcoming movies. 17% of the people stay updated through Bookmyshow. It is followed by television.
- Among the OTT players, majority people use paid subscriptions of Netflix, Amazon followed by Hotstar. For Sonyliv, Voot, Mx Player and Zee5 people prefer free subscription.

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Business 4.0 and IoT: A Study of Traditional Fleet Management System in India and their Concerns

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ABSTRACT:

In the era of Industry4.0 as decisions are now more data-driven, emerging technologies and applications in automated data gathering using the Internet of Things (IoT), machine learning and artificial intelligence, as well as analytics and cloud computing systems in play today are already changing the objective to move from historical data based planning to a more real time decisions.

Organizations and enterprises are facing immense amounts of pressure due to their traditional supply chain activities and fleet management which are resulting their profit margins put under pressure as their costs creep up throughout the supply chain network. These costs come from many areas, and a lack of visibility and accountability for reducing them can result in rising operational expenses.

Thus there is the need of the hour is to maximize visibility into the fleet management to ensure that the inventory that leave any factory, enterprise reach their intended end customers safely and well in time.

INTRODUCTION:

The Internet of Things (IoT) is a collection of interconnected physical devices that can monitor, report on and send and exchange data. IoT devices are typically connected to computer systems via data or Wi-Fi networks.

With Need of transparency, fair trade and sustainability gaining popularity in the mind of the customers, most of the businesses must deal with complex and non-integrated supply chain networks with cause's lack of comprehensive and efficient end to end traceability and surveillance of the fleet along various supply chain processes.

According to C. Dwight Klappich, Vice President Analyst, Gartner, "Supply chain operations are under pressure to adopt new business models and technologies to excel in an increasingly complex and volatile world," Thus Supply chain leaders must identify where to innovate and invest in new processes and technologies to help their companies remain relevant in their markets."

According to the Deloitte 2013 Global Supply Chain Risk Survey, companies have been facing difficulty to manage dynamic demands and margin erosion due to lack of latest tools to provide fleet dynamicity and real time insights into the fleet supply chain activities.

According to the Gartner prediction of 2019 for supply chain operations, By 2023, over 30% of operational warehouse workers will be supplemented, not replaced, by collaborative robots and at

least 50% of large global companies will be using AI, advanced analytics and IoT in supply chain operations.

IoT bridges the gap between physical and digital world by synchronizing the information flow with the physical flow for greater supply chain integration (Ping et al., 2011). IoT capability is defined as additional capabilities gained by supply chains with everyday objects being embedded with technology that provides identifying, sensing, networking and processing capabilities to communicate with other devices and services over the Internet (Whitmore, Agarwal, & Da Xu, 2014).

OBJECTIVES OF THE STUDY:

Due to enthusiasm on technological adoption in data transparency and visibility to achieve supply chain process integration and increase profit margins, the primary objectives of this research is to identify:

1. The different pain points faced by the supply chain managers and COO to efficiently manage their supply chain fleet management activities.
2. Identify different fleet management use cases based on the emerging set of technologies classified as IoT which can facilitate external (i.e. Suppliers and customers) and internal (cross-functional operations) stakeholders

LITERATURE REVIEW

The Internet of Things (IoT) is a collection of interconnected physical devices that can monitor, report on and send and exchange data. IoT devices are typically connected to computer systems via data or Wi-Fi networks.

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capabilities to communicate with other devices and services over the Internet (Whitmore, Agarwal, & Da Xu, 2014).

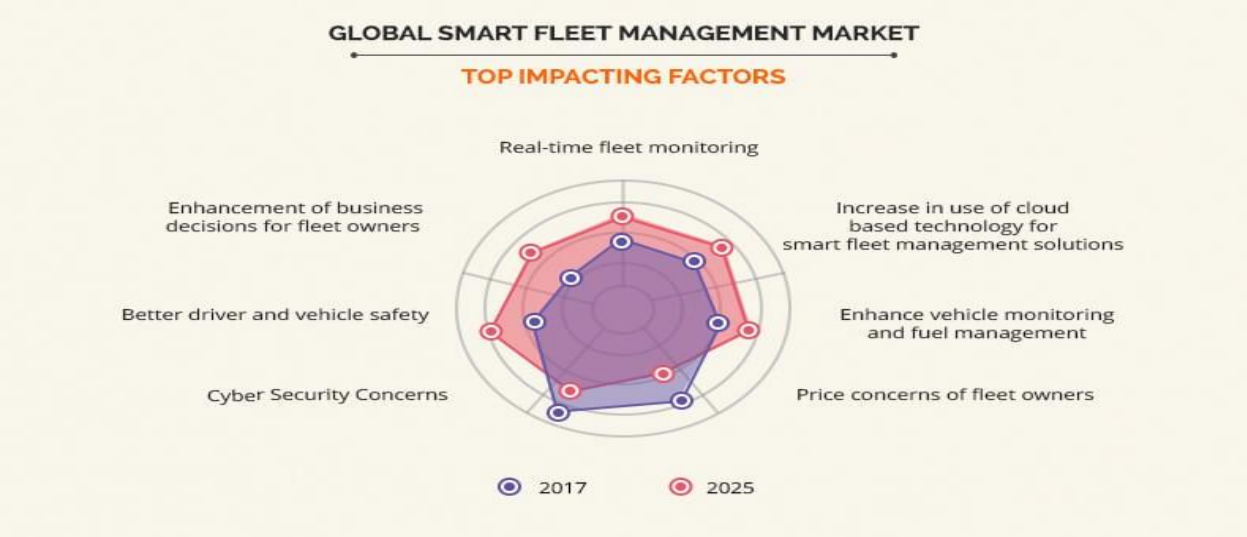
The global IoT fleet management market was valued at around USD 3,250 million in the year 2016 and it is expected to reach approximately USD 15,500 million by 2024, Businesswire.com (2019)

According to MarketsandMarkets.com, The smart fleet management market is projected to grow at a CAGR of 8.0% during the forecast period, to reach USD 462.48 Billion by 2022.

The growth of the smart fleet management market is driven by rise in incorporation of real-time fleet monitoring systems in automobiles, increase in use of cloud-based technology for smart fleet management solutions, and improvement in vehicle monitoring & fuel management. Furthermore, advent and integration of IoT and information, communication, & technology (ICT) into industries such as automobiles, logistics, and transportation drive the market growth. In addition, continuous tracking of driver behavior, vehicle tracking, real-time visibility, driver management, and others has resulted in significant market growth, Alliedmarketresearch.com (2019)

The smart fleet management market trends is decided on the basis of the market forecast from 2018 to 2025. One of the major factors that driving the smart fleet management market share is due to the rise in demand for the features such as incident detection, access control, and speed limit enforcement with major advanced safety & security features, Alliedmarketresearch.com(2019)

The key players operating in the smart fleet management market include Cisco Systems, Inc., Continental AG, DENSO CORPORATION, Globecomm (Speedcast International Limited.), International Business Management Corporation, Samsung Electronics Co. Ltd. (Harman International Industries, Inc.), Tech Mahindra Limited, Robert Bosch GmbH, Siemens, and Sierra Wireless, Alliedmarketresearch.com(2019)



The growing need to lessen energy consumption, reduce vehicular emissions, and prevent traffic congestions leads to increased adoption of smart fleet management solutions. Smart fleet management solutions are increasingly being used to improve fuel efficiency of fleets and meet the need for high-speed networks. Growing safety concerns and favorable government regulations are expected to drive the smart fleet management market during the forecast period. Advancements in technologies such as IoT and connected cars is likely to boost the adoption of smart fleet solutions during the forecast period, transperancymarketresearch.com

The global smart fleet management market is segmented on the basis of mode of transportation, connectivity and application. Based on mode of transportation, the market is segmented as

roadways, marine, railways and airways. On the basis of connectivity, the market is segmented as short range communication, long range communication and cloud. The market on the basis of application is classified as tracking, optimization, ADAS, and remote diagnostics, Theinsightpartners.com.

With new emerging technologies they are enabling digital transformation across multiple industries. Across Industries, fleet management is one of the key components in the entire value chain as it ensures and promises productivity and access to real-time data.

Thus enterprises involved in transportation, logistics and traditional fleet management are expanding their horizon on mobility services, big data and integration of Internet of Things (IoT) to automate their services along with process management and cloud-based applications for keeping a real time track of their fleet and to add dynamicity to their entire fleet operations.

According to the 2015 DHL and Cisco Internet of Things Trend Report, "Over the next decade, the IoT in logistics is expected to generate $1.9 trillion in value, part of an overall $8 trillion in IoT value generated globally"

Fleet supply chain management and supply chain planning helps build the vehicles you need while protecting you from external fluctuations, arifleet.ca (2019) Fleet management is an invincible part of the logistics industry. Without proper fleet management, it's impossible to imagine a successful logistics business, peerbits.com (2019)

According to Finiot.com (2018), traditionally, telematics devices have been used to track the location of vehicles but these existing fleet management systems are reactive in nature and in place utilizing the RFID based technologies to track the fleet movement and inventories, thus the managers are facing various issues such as:

- No real time tracking of fleet as they can only be tracked once entered in the warehouse premises
- No tracking of the vehicle health metrics and driver behavior
- Lack of end-to-end smart logistics and transportation solution offering cold chain logistics monitoring and other tracking features customized for various industries
- Lack of prediction to estimate the delivery estimates for proactive planning
- Lack of dynamicity and re-routing

Thus to improve the overall efficiency of the supply chain, transport, logistics and Fleet management sectors, Internet of Things (IoT) is providing highly integrated and streamlined "Transportation and Warehouse Management Solutions" that connect in-vehicle sensors and other cohesive digital devices over the network. Installed sensors in transport vehicles, containers etc. will continuously capture and process data that can be acted-upon real-time.

According to aeris.com (2018), there is a need to connect the data from sensors, telematics in the fleet to the IoT eco system, platforms to provide fleet managers a higher level of visibility into fleet location and activity than in years past. The implementation can not only provide insights into the logistics location but also can provide detailed analysis on the impact of driver behavior and vehicle activity on operating costs and fuel usage.

RESEARCH DESIGN

The instrument used to collect the data was a structured questionnaire. A list of questionnaires was prepared which could give relevant information when answered by the respondents. A total of 10

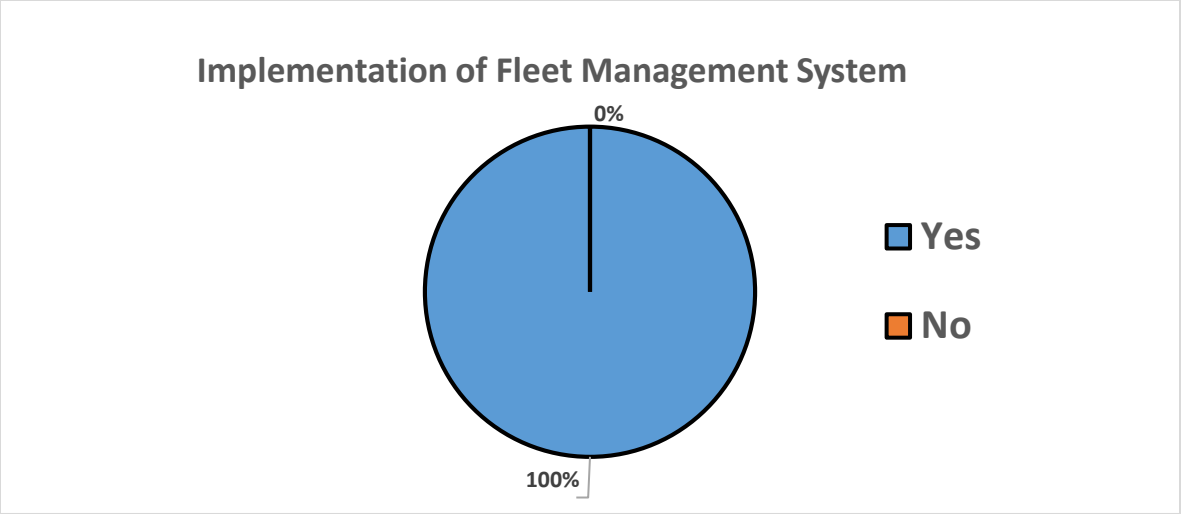
COO & supply chain manager level personnel were part of the research. The insights from the discussion helped in refining the survey instrument.

Analyzing the collected data and reporting the findings. Finally, the data collected, was thoroughly analyzed and processed to obtain the required information. The data has been summarized in the form of graphs.

DATA ANALYSIS

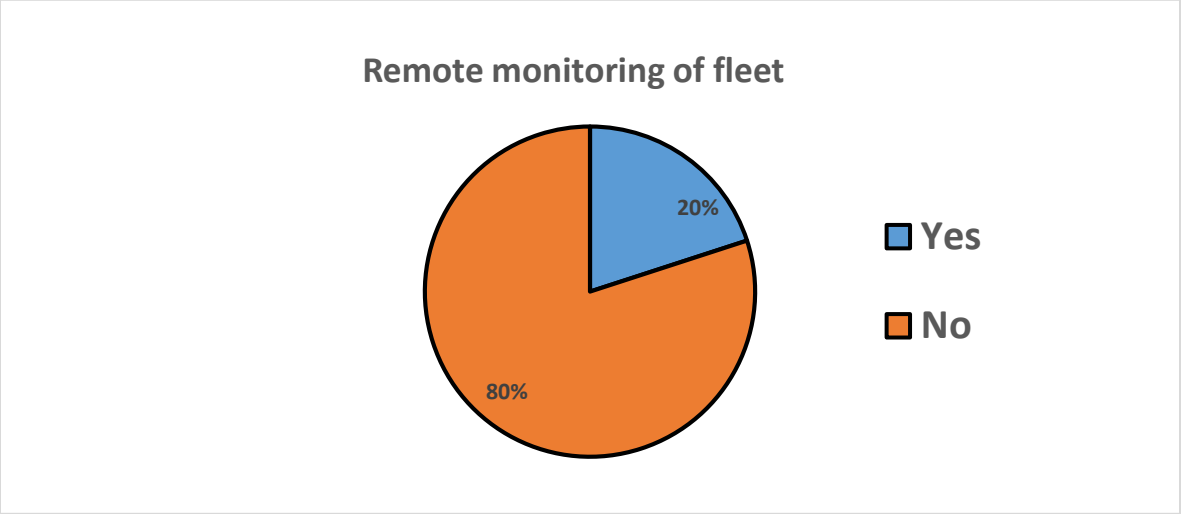
All the respondents had a fleet size of more than 50 and belonged to Food & Chemical

Ques.1 Does your organization use a fleet management system?



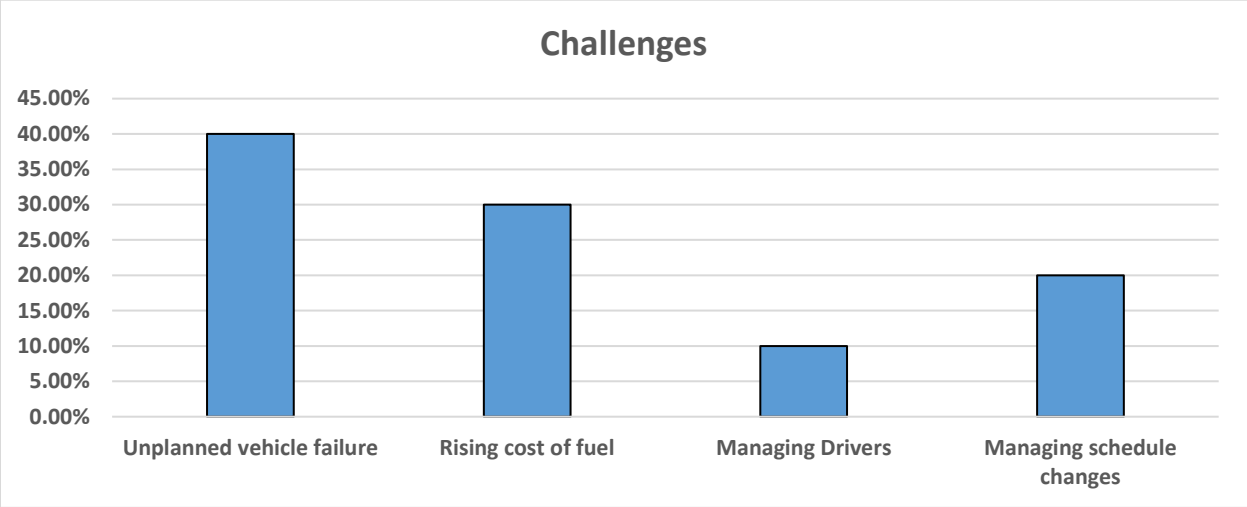
INTERPRETATION: Of all the respondents, all of the respondents have some kind of fleet management system in place to manage their fleet services

Ques.2 Do you have capability of tracking or remotely monitoring your fleet in real time?



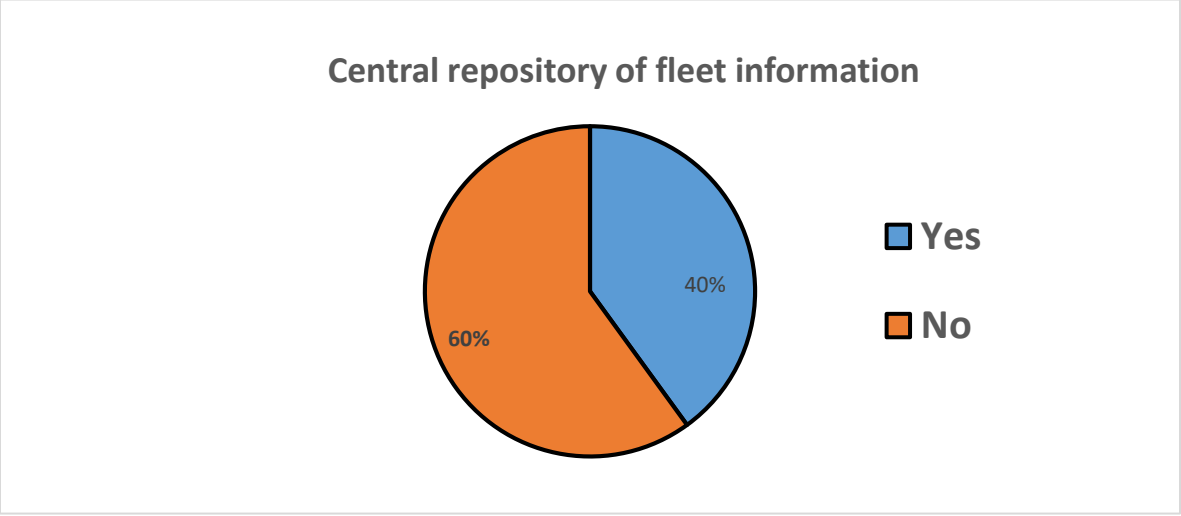
INTERPRETATION: Although the fleet managers reported that they had fleet management systems already in place majority of them lacked GPS based real time tracking of their fleet across geography. The 20 % of respondents had a separate tracking software installed to track their fleet

Ques.3 Which operational challenge has a severe impact on the overall logistics fleet operations



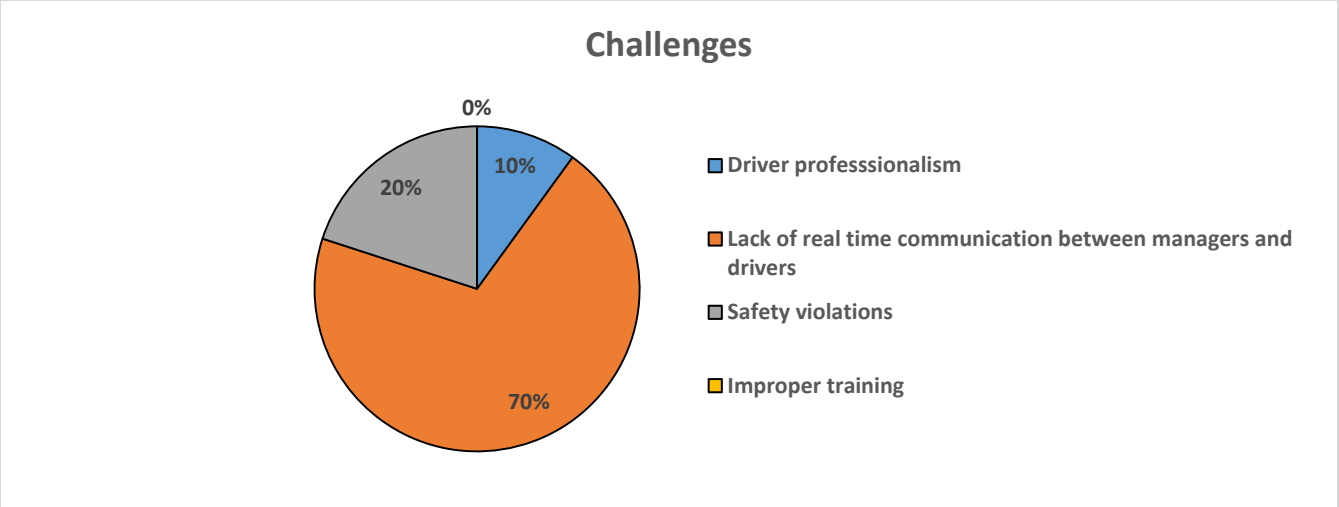
INTERPRETATION: Supply Chain managers and COO's reported that they face many operational challenges on a daily basis. However, vehicle maintenance ranked first on the list, with tires, fuel and oil, and brakes being the costliest services which was closely followed by rising cost of fuel.

Ques.4 Do you have all the data/information on your fleet readily available whenever you need it?



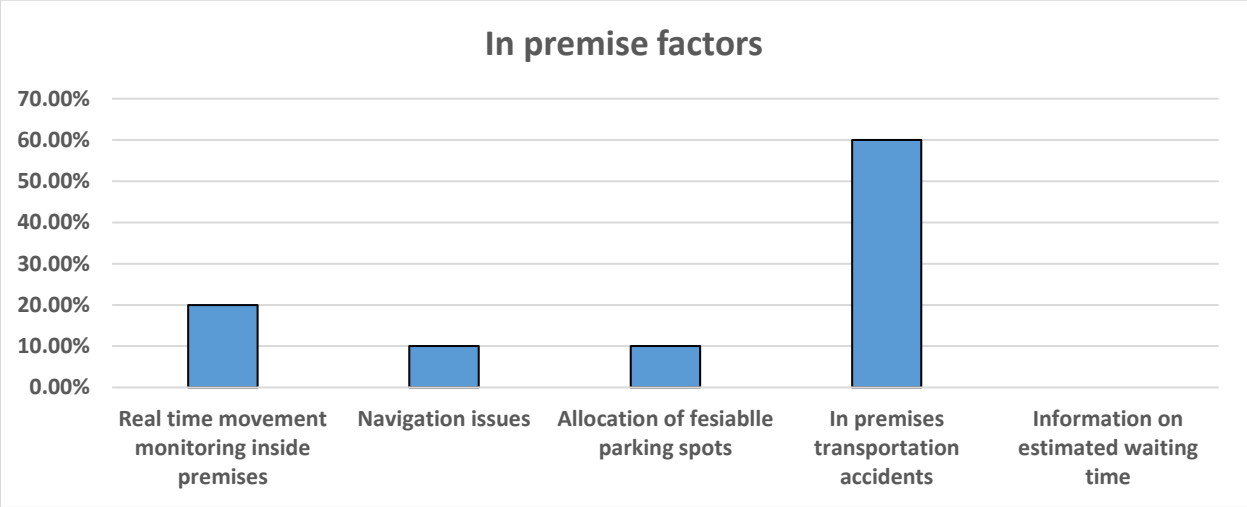
INTERPRETATION: While all the respondents have a storage medium for logistics data, 40 % of the respondents have a centralized storage medium of data, while the rest 60% respondents use a local data lake to store the data which is not readily available to other regions.

Ques.5 Which of the factors below related to the drivers have a severe impact on the overall fleet operations



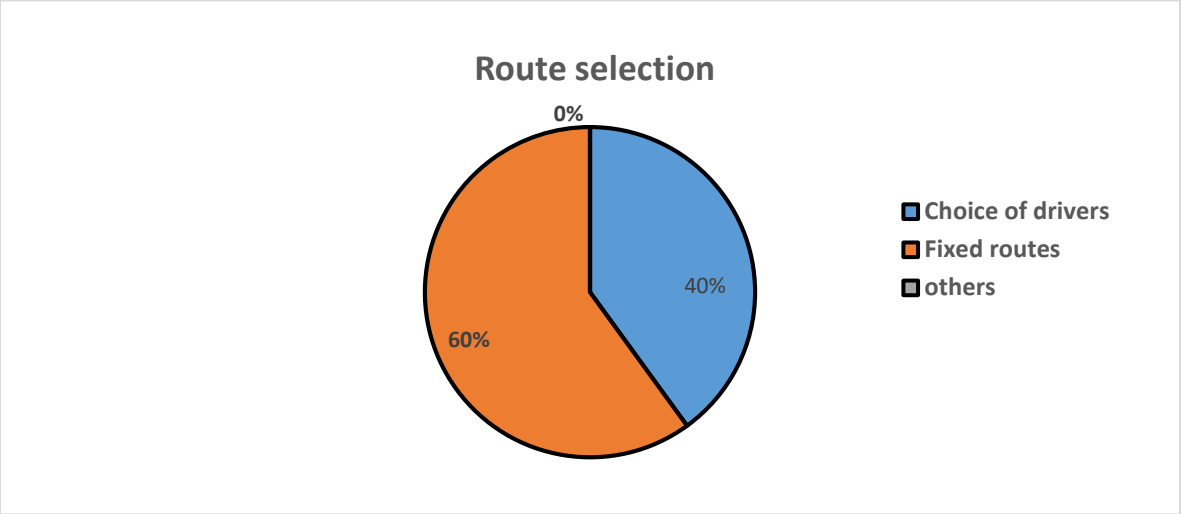
INTERPRETATION: It is observed that about 70% of the total respondents cite lack of seamless real time communication between the supply chain managers and drivers as one of the key challenges which they face which has a severe impact on the overall fleet operations

Ques.6 Which of the following factors related to transportation in warehouse premises have a severe impact on the fleet operations



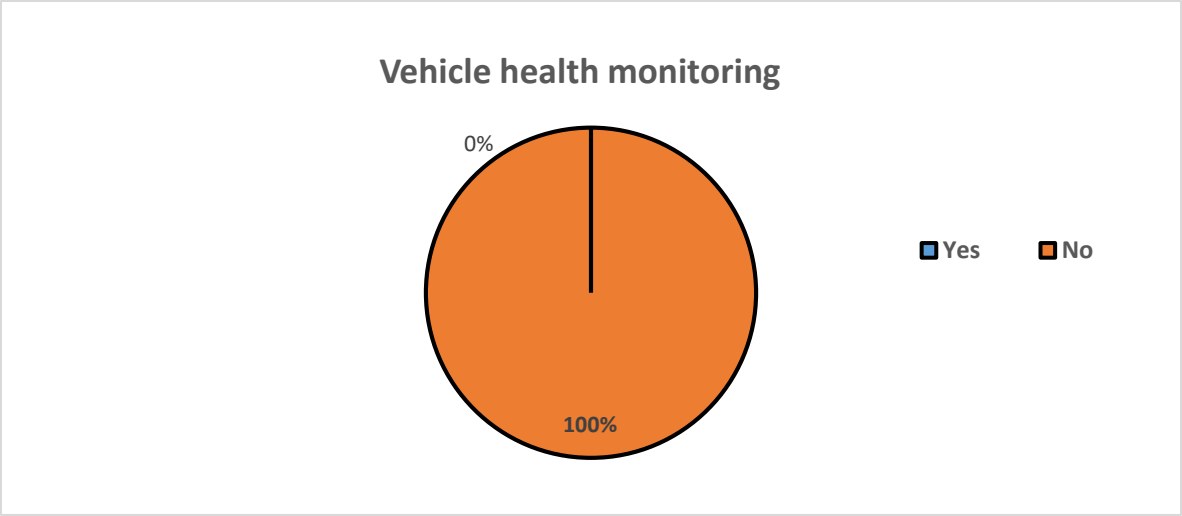
INTERPRETATION: It is observed that about 60% of the total respondents cite in premise transportation accidents as one of the most sever factor related to transportation in warehouse premises as it can have a devastating effect to both the welfare of employees and brand image

Ques.7 The choice of route selection for logistics transportation is dependent on?



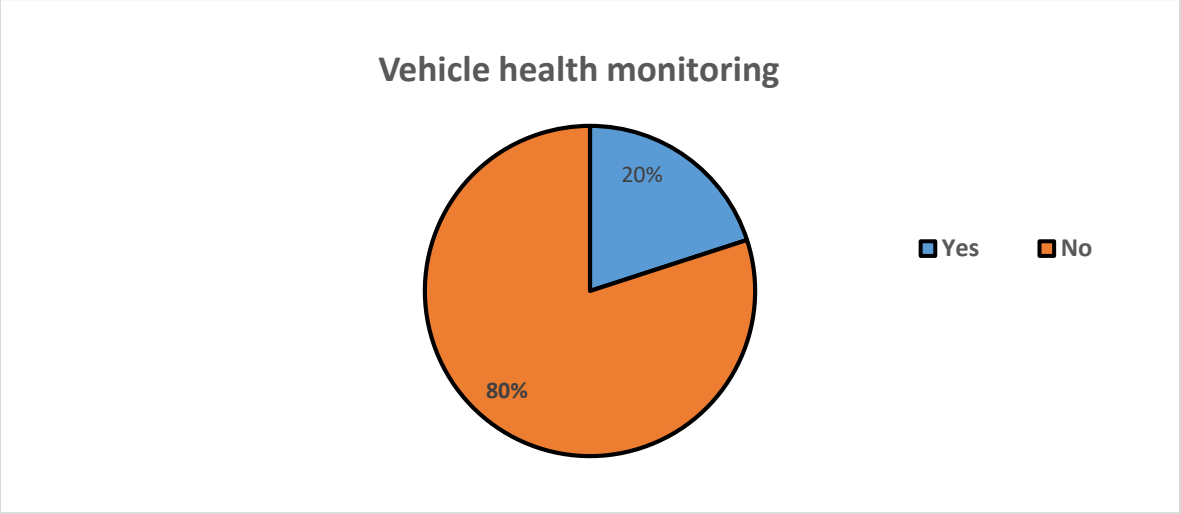
INTERPRETATION: It is observed that about 60% of the total respondents have observed that their drivers follow a fixed route which is pre decided by the organization whereas 40% of the respondents let their drivers decide the routes. It is observed that none of them have dynamic route selection based on real time conditions

Ques.8 Does your fleet management system provide real time vehicle health monitoring, tire pressure analysis capabilities?



INTERPRETATION: Although unplanned vehicle failure was the most critical operational challenge has a severe impact was reported by the respondents it is noticed that none of them had a vehicle health monitoring system to observe the health parameters of their vehicles which clearly shows the whitespace.

Ques.9 Does your fleet management system track real time in-transit conditions for critical goods?



INTERPRETATION: Majority of the respondents had no measures to track the real time status of freight in transit. All of them had to be dependent on the driver's status update or checks in warehouse after unloading. The rest 20% had basic temperature monitoring mechanism in fleet

FINDINGS

- It is observed that industries today are pursuing opportunities to optimize their fleet and freight movements by investing in fleet management systems utilizing telematics as they address changing customer demands.
- The fleet management system currently in implementation is of basic level and reactive in nature. Fleet entries are made whenever they check in at a ware house or where there is strong cellular connectivity
- Unplanned break down of vehicles and rising fuel cost are the top two challenge which the respondents have categorized having a severe impact on the overall logistics fleet operations. Any breakdown of vehicle on route can result in the whole schedule going for toss
- It is also observed that many of the fleet management systems are not centrally connected and do not have a central database for aggregation of different regional data which can result in analytics driven insight generation
- Most of the communications of supply chain managers with the drivers are based on phone calls and text messages and in areas where the reception is poor, there is no medium to establish communication with the driver, let alone real time communication.
- Incidents within the warehouse premises are being in rise and has a severe effect on the brand reputation and lawsuits being filed on the organization
- The choice of route is solely dependent on the driver or he uses a fixed route. The route may not be feasible at the current situation taking into account factors such as Strikes, Natural calamities which may affect the overall fleet operations
- Although unplanned breakdown of fleets are a critical challenge for the fleet operators, there is no mechanism to monitor real time vehicle health status, tire pressure and other critical parameters, no option of predictive maintenance

- The cost of transportation or delivery per mile is one of the important challenges for fleet management companies and is used to determine the pricing for their services.
- There is very little attention given to the status of the freight which the fleet is carrying if the freight is not a perishable goods. Certain parameters such as Luminosity Monitoring, Vibration Monitoring, Pressure Monitoring are not monitored
- Thus, the management systems can use fleet telematics and GPS to collect real-time information such as vehicle behavior, fuel usage, speed, mileage, and driver insights to increase productivity, reduce expenses, and improve safety
- Adoption of digital applications can enable managers to track vehicle routes, access data on service history down to the component and part level, maintain compliance records, and receive notifications when preventive maintenance is due
- It is also seen that fleet managers are facing the difficulty of slow and imprecise data from existing fleet management software

CONCLUSION

Thus, this study summarizes that the supply chain managers are COO level people are facing challenges regarding the fleet management systems lack real time tracking and monitoring capabilities such as:

Fleet Asset Capabilities: Fuel management, Predictive & preventive maintenance

Fleet Operation Capabilities: Driver behavior monitoring, Yard Management, real time tracking

Freight Management Capabilities: Vibration, Pressure, cold chain, humidity monitoring

This study also focusses on the various above solution implementations by leveraging the sensors, telematics, GPS to gain real time insights, estimate predictions and driver behavior monitoring to improve the fleet efficiency, reduce liability, increase compliance and achieve zero safety accidents.

Thus, Fleet management plays an essential role in the transportation industry as fleet managers strive to minimize risks associated with vehicle investment. It is critical for the fleet management system to provide real-time actionable insights for assets on-the-move. An ideal fleet management system must utilize GPS/Sensors/Telematics to provide a unified real-time information of global asset or cargo movement across multimodal transportation. Emergence of artificial intelligence and machine learning should be utilized to drive predictive recommendations for dynamic route scheduling, ETAs, driver risk profile, freshness, or cold chain monitoring to improve the fleet experience.

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Financial Performance and Administrative Efficiency of Indian Post Offices: A Case Study of North-Western India

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Abstract

Indian postal service is one of the largest postal networks in the world having 1,54,979 post offices all over the country. The India post has a brand image but to make their services indispensable the service quality and other dimensions of satisfaction need to be focused. India post has to concentrate on balanced growth in all its services for retaining the existing customers and attracting new one. Only a few studies have been found to be conducted on the performance and other aspects of post offices in India. These have been conducted in some parts of southern India or south-western region of India. Hardly any comprehensive study on Indian post offices have been conducted in north western region of India. Further, the role of Post offices in the recent years have changed a lot, because many IT enabled services have been initiated in post 2000 Era. No comprehensive study on Post Offices in post 2000 Era (since the IT services were enabled) has been found. The utility and efficiency of these services also need to be studied in north-western India. The previous studies in this respect on the Post Offices belong to the region of Kerala, Tamilnadu, Assam and Mumbai. Hence, the researcher feels the need to conduct study on Post Offices of North-Western Region in India, because there are cultural and social differences in the regions and the results vary.

Keywords: IndiaPost, Postal Services, Financial Services, Problems of Post.

1. INTRODUCTION

Mobilisation of domestic financial resources is a major concern in many developing countries. Savings are increasingly being acknowledged as a powerful tool for poverty reduction. Domestic savings play an important role in bringing about economic development of backward countries. In India, domestic savings originate from three principal sectors namely the house hold sector, the private corporate sector, cooperative institutions and the Public sector. Postal savings funds play a significant role in financing public debt and in a number of countries, the funds are intermediated through a variety of policy based financial institutions with developmental objectives, returning the funds to the direct benefit of the community of savers. However, it is a fact that the Postal Saving Scheme has not gained much importance in India. The changing postal environment presents an enormous challenge for traditional postal businesses, but it also creates a vast array of new business options and opportunities, as the interest rate compared to other schemes provided by the Postal schemes are higher. Today, in our country many investment avenues are available for the investors to invest their money. Only rural people find Post office schemes offered by the Government of India attractive, because of risk free option with the guarantee of their Principal amount.

1.1 INTRODUCTION TO THE INDIAN POSTAL SERVICES

Indian postal service is one of the largest postal networks in the world having 1,54,979 post offices all over the country. Initially India Post having 23,344 post offices prior to independence, serving to needs of 15,038 persons and covering 53 square miles area per post office, have grown up to present 1,54,979 post offices, out of which 1,39,182 i.e. 89.81% are in rural areas and 15,797 i.e. 10.19% are in urban areas having 4,75,000 employees, out of which 2,06,000 Departmental and 2,69,000 Gramin Dak Sewak as on 30.03.2010, serving 7,176 people in average, i.e. 5682 in rural and 20,346 in urban area covering an area of 21.2 sq. kms per post office. The first post office in India was established by East India Company in the year 1688 in Bombay followed by Calcutta and Madras. It was named as "Company Mail". The Post Office Department of the East India Company was first established on March 31, 1774 at Calcutta, followed in 1778 at Madras and in 1792 at Bombay. The present type of post office came in to being in the year 1854 under the post office Act of 1854. The Indian post office has a huge network of branches with a unique outreach in rural areas. In the year 1861, total number of post offices in India were 889. The number of post offices in India increase from 23,344 in 1947 to 1,54,866 as on 31-03-2011.

Indian Department of Post is the oldest and apex government institution in the Indian service sector. Once the East India Company established its rule on the entire Indian Territory the need was felt by the British rulers to have a government owned institution for delivering the royal mails. In 19th century Lord Dalhousie played an important role in starting the postal services in India. The Post Office Act was enacted in 1854 and first post office was established in Mumbai. The act was promulgated as per which the department of post with 652 post offices and four postmaster's generals were placed under central organization. It was headed by Director General. Gradually the number of post offices increased to 12970 by the end of 1900. At the time of independence, the total numbers of post offices were 23,334. Today India is the country with maximum number of post offices all over the world. There are 1,55,335 post offices today in India. Out of which 1,35,000 post offices are in the rural area. The Department of Posts, trading as India Post, is a government operated postal system in India. It is generally referred to within India as "the post office". As of 31 March 2011, the Indian Postal Service had 1,54,866 post offices, of which 1.39,040 (89.78 percent) were in rural areas and 15,826 (10.22 percent) in urban areas. It had 25,464 Departmental Post Offices and 1,29,402 Extra-Departmental Branch Post Offices. At the time of independence there were 23,344 post offices, primarily in urban areas. The network has registered a six-fold growth since independence, with the expansion's focus primarily in rural areas. On average, a post office serves an area of 21.23 Sq. Kilometres and a population of 7,114. It is most widely distributed postal system in the world. The large number is a result of a tradition of disparate postal systems, which were unified in the Indian Union after independence. Because of this far-flung reach and its presence in remote areas, the Indian postal service is also involved in other services such as small-savings banking and financial services. The postal service is under the Department of Posts, which is part of the Ministry of Communications and Information Technology of the Government of India. The apex body of the department is the Postal Service Board, consisting of a chair and six members. The six board members govern personnel, operations, technology, postal life insurance, human-resource development (HRD) and planning. The joint secretary and financial adviser are also a permanent invitee. India has been divided into 22 postal circles; each circle headed by a Chief Postmaster General. Each circle is divided into regions, there are 37 regions, headed by a Postmaster General and comprising 442 field units known as divisions headed by SSPOs and SPOs.

India post provide a range of services going beyond parcel and mail distribution to a well-established post office saving bank network, which operate more than 240 million saving account as on 31.03.2010. The Indian Post started the Postal Life Insurance in the year 1984 as a welfare scheme for the employees of the Post and Telegram Department due to huge demand of the scheme latter on, it was opened for employees of other departments and finally in the year 1995, it was opened for all people. In addition to these services, post office also provides money transfer services. Post Office Savings Bank, which was establish with an objective of encouraging saving habit and thrift among the masses, has now become a medium of mobilizing a huge amount of funds.

1.2 SERVICES OFFERED BY DEPARTMENT OF POST

The post office was incepted as a medium of transferring a written communication between the people all over the country. The department of post is an integral part of lives of every citizen since last 150 years. The department of post has made conscious efforts to spread these postal services to all parts of the country. The India Post is offering variety of services to its citizens, including **Mailing Services** (Speed Post, Business Post, Express Parcel Post, Media Post, E-Post, etc.), **Financial Services** (Public Provident Fund, Postal Savings Bank Account, Monthly Income Scheme, Recurring Deposit Account, National savings Certificate, Post office Time Deposit etc), **Postal Life Insurance** (for central and state government employees) and **Retail Services** (payment of electricity bills, telephone bills, e-ticketing, sale of gold coins, sale of UPSC forms, passport application forms, etc.). These services have penetrated to the large population of the country and they have become the part of their lives. The department of post has to manage these services through its huge infrastructure. Every day department of post has to deal with large number of customers. Hence, it's a customer centric business. Due the evolution in telecommunication business as well as globalization of business many new players have entered globally. Today India Post is facing acute competition from technologically advanced competitors. The big challenge today for India Post is to sustain in this market and retain the existing customers by delivering high level of satisfaction through its services. In this modern era, the customer expectations as well as their preferences have changed. The customers have plenty of other alternatives at click of mouse. So, the India Post has to adopt the necessary changes to become a leader in the current market. India post is facing many challenges. It not only faces the challenge from private courier services in urban areas in delivery of mail and parcel services, but also from financial institutions like bank and insurance companies and Heavy use of communication technology, especially in Mobile Telephone (3G, 4G services) and increasing use of Internet. One of the major problems faced by India post under Information Technology Modernization Project is that total 2,69,000 Gramin Dak Sewaks with minimum qualification of matriculate or below and without having any technical knowledge of Information and Communication Technology (ICT). In addition to this, many senior officials don't know the fundamentals of computer. Mass scale Closure / Merger / Relocation of post offices cannot be accepted by post when all other private couriers' agencies are competing to trap urban customers of India Post by opening more and more outlets in urban areas for extending their services to the door steps of such customers. Year by year financial performance of mail services being declining. The India Post is a very old institution, perhaps one of the oldest, but with the help of incorporating technology reforms covering all

aspects, it will be able to reduce operating costs and again popularity among global competitor. Due to globalisation, India Post is facing the acute competition from other strong competitors.

1.3 SAVINGS IN INDIA

During post liberalization period the banking sector in India has grown enormously keeping pace with and in some cases leading the country's remarkable economic growth. The banking system has improved its strength, efficiency and resilience. The branches of commercial banks including RRBs have increased from 8321 in the year 1969 to 93080 in 2011. The average population per bank branch has decreased from 64,000 in 1969 to 13,466 in 2011. Despite such increase in bank branches formal banking system has simply fail to reach to the common masses of the country and all developments are seems to be deficient. Financial inclusion is not an India specific problem, it is global one. The Deputy Governor, Reserve Bank of India, Dr. K. C. Chakrabarty in one of his address at the BIS-BNM Workshop on Financial Inclusion Indicators at Kuala Lumpur on November 5, 2012 said "Across the globe 2.5 billion adults do not use formal financial service to save or borrow. In India, just about 40 per cent of the population across the country has bank accounts. The proportion of people having any kind of life insurance cover is as low as 10 per cent and proportion having non-life insurance is abysmally low at 0.6 per cent. People having debit cards comprise only 13 per cent and those having credit cards only a marginal 2 per cent of the population". Other than banking and other financial institution the Indian post which partially do banking activity under the ministry of finance is doing a commendable job towards providing easy financial services to the people throughout the country especially in the remote areas through its huge network. Financial inclusion is assumed to be one of the key drivers of our vision of an inclusive society and inclusive economy. During post liberalization period the banking sector has grown enormously keeping pace with and in some cases leading the country's remarkable economic growth. At the same time Indian post offices are also providing banking services to the all section of people of the society since 1882.

1.4 WHAT IS FINANCIAL EXCLUSION AND INCLUSION?

In simple term financial exclusion means lack of access to formal financial services. It is very transparent that financial services are used only by a section of the population. There is demand for these services but it has not been provided. The excluded regions are rural, poor regions and also those living in harsh climatic conditions where it is difficult to provide these financial services. The excluded population then has to rely on informal sector (moneylenders etc) for availing finance that is usually at exorbitant rates. Financial inclusion is the availability of banking services at an affordable cost to disadvantaged and low-income groups. In India the basic concept of financial inclusion is having a saving or current account with any bank. In reality it includes loans, insurance services and much more. In advanced economies, Financial Inclusion is more about the knowledge of fair and transparent financial products and a focus on financial literacy. In emerging economies, it is a question of both access to financial products and knowledge about their fairness and transparency.

Post office, commercial banks and financial inclusion in India a critical look

Despite taking various initiative from the part of government, RBI and commercial banks the banking sector in India has so far not been able to provide complete coverage in the country especially in the rural areas. Out of the 93,080 Commercial Banks‟ branches only 36.10% are in rural areas and 24.76% in semi-urban areas. All India average population served by per branch is 13,503. On the other hand, out of 1.55 lakhs Post offices, 89.8% i.e. 1.39 lakhs are in rural areas covering a population of 5,682 per Post office in rural areas and 20,346 in urban areas, on an average 7,176 people are served by one post office as on March 2011. On an average, a post office serves an area of 21.23 sq. kms. Two hundred ninety-six (296) districts in states are under bank services coverage, i.e. they have below-par banking services. The Indian post office offering a plethora of financial services throughout its all branches. This includes various post office savings schemes, postal life insurance, mutual fund, money remittance, forex services etc. As on March 31, 2011, there are nearly 25 crore postal savings bank account under various post office savings bank schemes. The Department of Posts has taken the responsibility to disburse the MGNREGA wages through Post Offices by opening savings bank accounts in the names of MGNREGA beneficiaries. Starting with Andhra Pradesh Postal Circle in 2005, the Scheme of disbursement of MGNREGA wages through Post Offices accounts is currently operational in the entire country excepting Delhi, Jammu & Kashmir and Tamil Nadu Postal Circles. The Department is also contributing to the efforts in financial inclusion by payment of benefits under various social security pension schemes viz. Indira Gandhi National Old Age Pension Scheme, Indira Gandhi National Disability Pension Scheme and Indira Gandhi Matritva Sahyog Yojana. Such payments are being affected either through money orders or Post Office Saving Bank accounts. The Government's financial inclusion plan aims to provide banking services to 73,000 villages each having a population of 2000. This could be effectively and adequately provided by the PBI operating through postal network and help to spread the savings habit.

Post Office Savings Banks in India (POSBs)

POSBs in India were established in 1882 by the British colonizers to mobilize savings and operate as an agency for the ministry of finance. As of 2007, there are 1, 54,000 POSBs in India of which 89% were located in rural areas.

India Post Selects Infosys To Transform Its Financial Services

Infosys, a global leader in consulting and technology, announced that it has been selected by the Department of Post, Ministry of Communications and IT, GoI for a mission-critical program that will enhance India Post's financial services across 150,000 post offices. This is part of the 'India Post 2012' modernization program that aims at bringing transparency, agility, flexibility and scalability to India Post's operations. Under the agreement, Infosys and India Post will embark on a transformational initiative, which encompasses Financial Services System Integration. This project, estimated at INR 700 crores, aims to transform India Post into a technology-enabled and autonomous market leader, by revolutionizing its financial operations and end-user services. As Financial Services System Integrator, Infosys will implement and manage its flagship Finacle™ Core Banking and McCamish™ Insurance products to help India Post transform its banking and insurance operations - covering more than 200 million banking customers across urban and rural India; including a large base of insurance customers. Infosys will be installing 1,000 ATMs for India Post as part of this program to increase the effectiveness of its delivery channel and will also

implement an electronic Content Management system to manage millions of documents generated as part of India Post's financial operations. For the project, Infosys will support India Post in the following areas: Complete System Integration including designing, building, supplying, installing and commissioning hardware and software; Data migration and deployment of the platforms and solutions across all identified post offices; Supporting multi-year managed services, application support and infrastructure operations; Training more than 35,000 India Post employees across the country on the usage and deployment of the new platform and solutions. Speaking about this deal, Mr. A. S. Prasad, Deputy Director General, Financial Services, India Post said, "We are confident that Infosys' extensive global experience with transformational programs in the financial and systems integration space will be instrumental in rolling out this ambitious program aimed at driving technology superiority at India Post, by introducing key solutions like core banking. This transformational program is expected to enhance India Post's services, bringing us on par with the best in the banking industry." "Infosys will be drawing upon its expertise and domain knowledge across the banking and financial sector, to transform India Post's services to empower end-consumers. This project offers us rich scope to innovate and optimize the largest financial and insurance distribution channel in the country and we look forward to deploying our strong capabilities across industries and technologies, in a role that has the potential to significantly impact millions of citizens in the country," said Mr. CN Raghupathi, VP and Head, Infosys India (Infosys newsroom report).

Problems and challenges ahead

There is no doubt of the fact that Indian post is playing a very important role in financial inclusion but it can play a much better role if it can overcome from the following problems:
a) Lack of basic infrastructure, especially post offices in rural areas.
b) Less numbers of staff, mostly one or two persons and need to do all sorts of work.
c) Lack of coordination unlike foreign countries, where post offices are doing tremendous work for financial inclusion in coordination with other departments.
d) Slow progress of innovation and following the age-old practices of working.
e) Being a government department, they cannot take a decision independently.

Different Saving Product of India Post (source: www.indiapost.gov.in)

a) Saving account scheme: Post office saving bank account (POSB) is the oldest and most popular postal saving instrument. Any individual can open it with a minimum balance of Rs-50/ with a pass book and Cheque facility. Currently the rate of interest offered against POSB A/C is 4% and it is regulated by The Government Savings Bank Act of 1873.
b) Recurring deposit scheme: Post office offers recurring deposit facility with a maturity period of five years with a minimum deposit is Rs 10/- and multiples of Rs 5/- thereafter and there is no limit of maximum deposit. The present rate of interest offered against this A/C is 8.4%. Premature closer is after three year and part withdrawal is also allowed.
c) Time deposit account: Post office offers time deposit for 1 year, 2 year, 3 year and 5 year with a rate of interest of 8.2%, 8.3%, 8.4%, and 8.5% respectively and a minimum deposit of Rs 200/ with no maximum limit. Premature withdrawal allowed after 6 months.

d) Monthly Income Scheme: under this scheme the savers make a lump-sum deposit for a monthly interest. The minimum deposit in case of single depositor is Rs 1000/- and in case of joint depositor it is Rs 1500/-. Maturity period is 5 years and rate of interest allowed is 8.5%.
e) National Savings Certificate: This is a tax exempted certificate sold by post office with a minimum investment of Rs 100/- and having no maximum limit, available in the denomination of Rs 100/-, 500/-, 1000/-, 5000/- and 10,000/- with a Rate of interest at 8.9%.
f) Public provident fund scheme: This is a tax advantage 15 years scheme with a minimum deposit of Rs 500/- in a year and a maximum of Rs 70,000/ per year. Withdrawal is allowed after expiry of five years from the date of initial deposit and Interest is allowed at 8.8% PA
g) Postal Life Insurance: Indian post offering life insurance services since 1884, initially limited only to the employee of post & telegram department, later extended to the employees of some other departments and banks also and was opened for all people in 1995.
h) Rural Postal Life Insurance: To extend the life insurance service to the rural public the post office extended the service to rural areas in 1995. The prime objective of the scheme is to provide insurance cover to the rural public in general and to benefit weaker sections and women workers of rural in particular and also to spread insurance awareness among rural.

2. REVIEW OF LITERATURE

Jain, et. al (2001) analysed the structural issues in the operations of **India Post**. The actions which can be taken to make the India post activities commercially viable are mentioned. A case study of **Indonesia** is considered for suggesting the postal reforms.

Palacios (2001), while observing the challenges of old age income security in **India**, has concluded that reforms would provide current and future contributors with a viable alternative to a traditional family support system that will come under increasing strain of demographic transition.

Scher (2001) in their study had observed that in many countries **Postal Savings and Giro remittances** have long enabled provision of financial services to all segments of the population. The review of experiences of **Asian developing countries** suggests many ways by which developing countries can help themselves to mobilize domestic savings and provide domestic financial services through postal savings and remittances and thereby provide financial services to those most likely to be excluded.

World Bank (2002) observes that **India Post** is particularly well positioned to address the pressures of a changing environment by expanding services into non-traditional areas such as e-banking, e-government and e-commerce, reinventing the services and products it offers.

Richa (2004) argued that the **Post Office** continues to be a major attraction for savers going by the 32.45 per cent higher collections during the first quarter of the current fiscal relative to that mobilized over the same period of 2003 – 04. Between 1999 – 2000 and 2003 – 04, gross collections under the savings deposits shot up from Rs. 34,650 crores to Rs. 91,3000 crores.

Salam (2004) in their study had observed the **savings behaviour in India**. The objective of the study was to find the determinants of savings by analysing saving behaviour in India over a period

of nineteen years i.e., from 1980-81 to 1998-99. The methodology adopted was simple and multiple regression models were used. From the analysis, it was found that a favourable macro – economic environment supported by strong structural reforms including liberalization of financial markets should help domestic saving to increase substantially.

Suresh (2004) in an analysis of popular perceptions said that **retail investors** swarmed back to the stock markets in the year 2003-04. Households had deposited Rs.1,69,000 crores in bank deposits while investments in small savings rose 19 percent. The data suggests that in 2003-04 the household investor had turned extremely conservative.

Raghavan (2005) highlights that **India Post** needs to deal with the emergence of electronic alternatives to mail, improve the quality of its products and services to satisfy ever more demanding customers, and respond proactively to market competition. It is recommended that the training process needs to be reoriented to ensure that post office staff can move up the value and quality chain and help improve efficiency in the delivery of services. He discussed it using a comparative study with different nations. In the **United Kingdom**, the government gives **Royal Mail** an explicit subsidy for the provision of loss-making rural post offices. It is observed that to increase revenues, public postal operators there are increasingly diversifying the range of services distributed through post offices. In the Republic of **Korea** all post offices with sufficient space provided to access free telecentres, thereby meeting a social and development objective on behalf of the government. **Brazil** has developed a post bank in partnership with a private bank, which targets mainly communities that previously lacked access to banks. They have also introduced an easy export product that simplifies overseas trade for small and medium-size enterprises. To counter growing competition, postal operators there must be given a greater autonomy from government control so that they can operate on a more commercial basis. In **Trinidad and Tobago** introducing commercial management practices improved service and increased volume, revenues and productivity.
Ranganathan (2005) opines that with the Internet, Mobile Telephone network revolution posing the threat of making the letter mail obsolete, postal monopolies throughout the world are undergoing restructuring and/or privatization. He expresses that the ubiquitous post office, in **Japan and India** particularly, has also doubled up as a bank, exploiting the economies of scope of its vast number of branches and network, and mobilizing savings. Except for **foreign mail and Speed Post in India**, every other service is incurring a loss. He adds that the loss in turn is constraining the managerial autonomy of IP, with all major financial decisions being left to the Finance Ministry. He further acclaims that to promote its Speed Post IP is cannibalizing its letter mail market, by delivering normal mail inordinately late. In its quest for commercialization, it is eroding its own good reputation and good will in its traditional areas, letter post and money order. The first phase of this research has focused on identifying the reasons for this fall in performance.

Hari Sundar & Jacob (2009) tries to find out the investment pattern of the respondents of **Kumbalangi** a rural area in the outskirts of **Cochin** district. There exists no significant relationship between Age and Percentage of income saved by the respondents. The factors that influenced to invest in postal schemes were that the proportionate of investment is less and it provides high interest rate than banks. The analysis brings out that Kisan Vikas Patra stood first in the preference of respondents as the investment doubles and gives high return. The study reveals the fact that majority of the respondents were interested in investing in Post Office, irrespective of reduction in

interest rate because of its highest guarantee and safety features. It was also found that there exists a significant relationship between Income and Purpose of savings by the respondents and there exists a significant relationship between Age and Purpose of savings by the respondents. It is recommended that more awareness must be created among the people about the schemes introduced and the reach of the schemes must be checked. To understand the investor's investment pattern and their perception towards Post office saving scheme this study may be opted in future for an in-depth analysis with a caution should be mentioned here as the survey was limited to **Kumbalangi area in the outskirts of Kochi**. The study was carried out to analyze whether the Postal savings schemes have gained importance among the people.

Normany, et. al (2009) enumerates difficulties of post offices for manual sorting. Its attempt is to design a machine which will make the work of post office more efficient and effective.

Ganpathi & Malar (2010) studies the attitude and **perceptions of the investors towards** the various deposit's schemes available with **Post Office**. The schemes are meant to increase thrift and inculcate increase in saving habits of the investors. They compete successfully in the market due to their tax saving schemes, safety and high rate of interest.

Subrahmanian (2010) highlights in his paper the importance of **training of employees in department of post**. As per the study, the focus is on training in India Post to improve quality movement, continuous improvement. India Post has adopted AIM model – appraisal, intervention and measure model to enhance the quality and effectiveness of the training programme. He interprets that India Post has adopted a sound training strategy.

Planning Commission (2011) have emphasised on the need of the **modernization of India Post**. The improvement areas in the functioning of the India Post are analysed and specific recommendations have been given by the experts.

Rajeshwari & Sunmista (2011) states in their paper the comparisons of the customer's perceptions of service quality of Post Office in **Virudhunagar district and Madurai district of Tamilnadu**. SERVPERF dimensions were used to measure the service quality of Post. Customers have a positive attitude more than the negative attitude towards services of Post.

Agarwal (2012) concludes in her study the various factors which focus on influencing the investors to invest among the different savings schemes of the **post offices**. It explains that the educational qualification and occupations of the investors has a significant impact on the saving pattern as well as to choose among the various investment schemes and services available with post offices. The study states that the investment in senior citizen schemes are very low preferred by the customer and communication network of the post offices should be increased. Post offices provide a unique bundle of savings products.

Aggarwal (2012) depicts that even though there is a global revolution in financial sector, **India Post** is still a reliable government agency. There is diversity in the postal services, but awareness and overall improvement in the services is the challenge faced by the India Post.

Gupta & Gupta (2012) expresses that the **customer's satisfaction** is a key to success for a company. The paper studies the satisfaction of the customers which they derive from the services offered by banks and post offices. It is recommended that Post offices should improve their infrastructure and use the latest technology updating and should offer timely discount schemes to customers. Lastly, they should have fastest grievances handling system.

Moez & Gharbi (2012) in their paper studies the customer satisfaction in delivering services by the **Postal department in Tunisian city** relating to mail services and secondly loyalty of the customers towards the services of the post. It concludes that the satisfaction of customers for undertaking services from post has a positive impact on the loyalty of the customers.

Anand, et.al (2013), in his paper focuses on the **performance aspects of Indian Postal Services and its future growth strategy**. As per the study, the strength of India Post is its long traditional of handling financial services, and its reach to masses. It is recommended to improve the service quality and operational efficiency of the system.

Chhatbar (2013) tried to explain the satisfaction of consumers, which they derive from using services of the **post offices and in comparison, the satisfaction arrived from private courier services in Mumbai**. The study reveals that the customers are equally satisfied by using the private courier firms or Indian postal services.

Hosseini, et.al (2013) studies the strength, weakness, opportunities and threats of **Postal Services in Rasht (Iran)**. It focuses on the number of problems faced by the public relating to the services offered by the Postal Offices. It observes that the post office distribution and city environment are not properly organised and it offer various suggestion to improve.

Kanthi & Kumar (2013) analyzes the investor's preferences, awareness, satisfactions, their objective and purpose of investment in their schemes. It reveals that majority of investors are highly satisfied by **postal savings bank**.

Khator (2013) highlights the working way of traditional **Post Office services in growth with modern corporate entities in Kenya**, to find out tough competition faced by postal office from these private companies and to analyse the strategies adopted by them to reduce risk and uncertainties. 96 offices of private courier and mail services are registered in Kenya.

Malakar (2013) study the role played by **Indian post in financial inclusion and the challenges** before the Indian post in providing banking services to the masses. The information is collected from the department of post, using discussions with officials of Indian post. It is summarized that Indian post served Indian villagers as banker much before financial inclusion become buzzword and Indian post claims to be the pioneer of financial inclusion.

Malankar (2013) reveals about the role played by **post office in the financial inclusion and the challenges faced**. It mentioned various hurdles and challenges come in their way during the course of working of services. The study concluded that India Post has removed all those challenges by becoming the most reliable and safest way of investment agency.

Mokoena & Mbohwa (2013) discuss about the **performance management of Postal Organisation**. It is interpreted that the performance of the Post is at decreasing level in last decades in terms of revenue, customer satisfaction and has a tough competition from private mail companies. It focuses on transformation role which will lead to a positive performance of the Postal Organisation.

Samal (2013) put forward the thought that due to vast use of electronic media, more demanding customers, presence of Organised / Unorganised courier for mail service, Financial Institutions like banks and Insurance companies and above all the challenges of globalization, corporatization and liberalization, post should take the proper steps for its survival. He highlighted many points that taken by the **India Post** including Business Development, IT Modernization, Potential Service Provider.

Thangapandi (2013) conducted a study to assess the **opinion of the customers towards postal services** and how frequently they use the services and to offer suggestions for improvement in them. The focus of the study was on demographic profile of the customer namely literacy, occupation, location where there is a significant change in their relationship. The study depicts that no significant change usage rate and opinion of postal services has been observed in relation to demographic profile such as age, gender and income of the respondent.

Dutta (2014) has stated in her paper the role of **India Post in providing Postal life insurance** schemes for central and state government employees and rural postal life insurance (RPLI) schemes for general rural people. It studies the problem face by them in undertaking those services. PLI introduce on 1st Feb, 1884 and RPLI on 24th march, 1995.

Gayathri (2014) studies in general the **attitude of the investors towards the different schemes with the postal offices in Cumbum Town (Tamilnadu)**. It analyzes the study of the various problems faced by the customers in investing money in post offices. It highlights suggestion for improvement in the way postal department perform their services. Latest technology up gradation which will make services faster and reliable. Advertisement strategy should be adopted as lack of awareness is there as campaigning of services is not done. Post offices reach to the millions of people serving them the best products and schemes, especially rural ones.

Giri, S. (2014) discusses the Postal scenario prevailing today and the Financial Services using technology modernisation and it gives a brief idea of various financial services rendered by the **Pondicherry Division of India**. It also highlights the other technology driven services provided by the Pondicherry Postal Division to the urban and **rural people of Pondicherry, Cuddalore and Villupuram Districts** like Collection of Data for Consumer Price Index, Booking of Railway tickets, Booking of SRM ticket, Payment of Money gram, Western Union Money transfer, Payment of Instant money remittance etc.

Kaniganat & Chaipoopirutana (2014) has highlighted the Relationship between operational performance, relational performance, cost performance, organization, and customer satisfaction towards **Thai Postal Service (TPS) in Bangkok, Thailand**. The study shows a high positive relation between organisation image and customers satisfaction.

Kumar & Kannaiah (2014) shows in their study the **importance of investment avenues and attitude of the investors towards Post Office savings schemes**. The broad objective of the study is to identify the customer's opinion, their attitude towards post office schemes. 630 respondents are selected for study. Rural population is selected from **Dharmapuri District (Tamilnadu)**. As security it is the best investment tool for rapid economic development.

Kumar & Prakash (2014) attempts to study the importance of precious metal i.e. Gold and **expectations of customers in buying gold through 630 post offices** with various discounts are offered by them. The study summarizes that India post is moving towards technology innovation and modernisation for services and tries to satisfy customers with best products.

Lykogiannis (2014) attempts to study the **behaviour, perception and attitude of the customers relating to Greek Postal Services** to investigate the investors' awareness for schemes available in post offices. Big percentage of customers use Greek Postal offices and they are highly satisfied by the services and schemes. It is recommended that they should take more efforts to concentrate on raising satisfaction levels of customers.

Moorthy & Kumar (2014) have shown that for poor and lower income people usage of strategies are very less to meet their requirement. Various investment avenues are available with post to channelize savings of poor and allocate them for development of the country.

Shafee & Prabakaran (2014) in their paper has discuss the role of **Postal Department in implementing the ATM services**. Automated teller machines (ATMs) were the first well known machines to provide electronic access to customers. To analyze the present ATM facilities provided by India post, customer satisfaction by appraising the problems faced by the customers using ATM and to study the growth and development of ATMs in the banking sector and their functions. It is recommended that Indian Postal ATM Service needs technological, social, cultural & economic change to create a monopoly in the market.

Subatra & Plaban (2014) acclaims that customer satisfaction depends on the quality of services. The skilful and sufficient numbers of staff members are required for good services.

Kumar (2015) in his paper has made a comparative study of the role played by **Post Office in rural areas** in developed countries, underdeveloped countries and emerging economy. The role played by Postal department is vital one in fostering financial inclusion. Women empowerment can be increased by giving them facilities from Post Offices.

Mathew (2015) include in her study the role of postal administration in providing the excellence services and enjoying the trust and loyalty in customers by diversifying themselves through innovative products and services and the changing role of post offices by entering into new areas such as telephony and financial services. It is viewed as a critical window for the rural people to avail sophisticated products and affordable financial products.

Mohammad (2015) highlights the changing face and role of **post offices in Indian services sector**. India has the largest postal network in the world. Its plays a very crucial role in socio-

economic development. It also focused on the various suggestion for India post to provide better services to citizen. Thus, a transformation role is needed to the India Post.

Potadar et. al (2015) gives an overview of **challenges ahead of India Post**. The authors recommended that more revenue will be earned if India Post does directly any business instead of doing through intermediaries. They stress that the Department does not find any financial autonomy and commercial flexibility to respond to market forces quickly and efficiently since it is functioning as a corporate agent of the Ministry of Finance.

Potadar, et.al (2015) highlights the **challenges faced by the Indian Post Office from the private courier, banks and financial institutions** or companies in delivering services relating to letters, mails and parcels. It is reviewed that collection of feedback from employees and customers is the best way to review their performances.

Saranya & Karthikeyan (2015) worked in his study on the **importance of savings among the investors in post Offices schemes**, in order to analyse the satisfaction, they derive using the services of post Offices and to identify the strength, weakness, opportunities and threats. Thus, the prime reasons for investors to invest are emergency needs, family needs and future.

Birajdar & Joshi (2016) focuses on quality of services which are provided by **India post** to its customers. The quality is very critical to satisfaction in service sector organizations. The researcher has considered certain dimensions of quality of services like timeliness, reliability, responsiveness, ease of using services, competency of staff members, safety in dealings, complaint handling, layout etc. It is concluded that India Post is a reliable organization which takes necessary precautions while handling variety of transactions. The study points out the importance of maintaining the service quality for increased customer satisfaction. It is recommended that the waiting time, complaint handling, staff cooperation and delay in the service delivery are the major concerns of the customers. As per the study, emphasis should be given on the service quality improvement and urgent measures need to be implemented for process improvements. It is observed that there is lack of professional attitude and competitive foresight. Being the responses of the customers in **Dombivali region** are considered. Hence it may not be applicable to other parts of the country.

Kumar offers critical **lessons for India Post** on the importance of addressing **employee motivation**, establishing a dynamic management team, and pursuing a more aggressive marketing strategy to thrive in the market. The international example and especially the restructuring of **Deutsche Post** demonstrate that postal sector reform is a long-term process. They also show that reforms must be on clear consensus and support from government.

Mehta & Mirchandani focus on the **investment avenues for investing in the post office savings schemes**. The study observes that it is convenient for the customer of rural and urban customers to choose the investment in different schemes available. Good public image and confidence is to be developed among the general public as it offers the safety mode of return.
Mirchandani described ways to manage the **postal sector business by using information technology as a key enabler**. He also described the four pillars of strategic change and development for a postal system as: empower the customers, employees, and partners through great services and solutions; broaden the use of the post office and transform it into a gateway for

value added services; measure operational costs, productivity, and customer value; and improve the productivity of service delivery and employees. Information technology supports all four of these pillars. Both the **United States and New Zealand** have successfully used information technology platforms to integrate their postal networks. The **U.S. Postal Service** built a strong information technology infrastructure to support electronic postmarks and cost-effective delivery of services and **New Zealand Post** introduced an e-government platform.

Saidoun discussed about **Postal reform in Germany** that was carried out in **three phases** in 1990 to 2006 to respond to the challenges of globalization, liberalization and digitization. The first phase 1990 to 1997 focused on reducing cost, creating efficient processes and improving the quality of service in the domestic market. The second phase 1998 to 2000 focused on expanding the product range and offering the new services along the value chain. Value added services include direct marketing centres, Deutsche Post Print Com and pack stations. The third phase 2001 to 2006 consists of consolidating cross-selling potential.

Thakur & Singh expresses that the **customer satisfaction** can be raised by providing quality services and then employees play a very important role in delivering the good services. They have underlined the necessity of good staff for raising the overall customer satisfaction.

2.2 RESEARCH GAP

From the above review discussion, it becomes clear that well lesser studies are held on the topic in Indian context and further, no study has been found executed till date on North-Western India on the problem. Hence, it would be quite interesting to suggest the solution for the postal system in the given Indian region itself.

2.3 STATEMENT OF THE PROBLEM

The India post is one of the most trusted government organizations from last 150 years. It is facing the acute competition from other competitors. To become the leader in the mailing and financial services the department of post need to adopt certain important changes in its services and technology. The ease and convenience of the customer with timeliness in service delivery must be the utmost priority. The India post has a brand image but to make their services indispensable the service quality and other dimensions of satisfaction need to be focused. The India post has to concentrate on balanced growth in all its services for retaining the existing customers and attracting new one. Hence, here the problem scope will lie along exploring the ways ahead as a suggestion to let the India post achieve its zenith.

2.4 NEED AND IMPORTANCE OF THE STUDY

Only a few studies have been found to be conducted on the performance and other aspects of post offices in India. These have been conducted in some parts of southern India or south-western region of India. Hardly any comprehensive study on Indian post offices have been conducted in north western region of India. Further, the role of Post offices in the recent years have changed a lot, because many IT enabled services have been initiated in post 2000 Era. No comprehensive study on Post Offices in post 2000 Era (since the IT services were enabled) has been found. The

utility and efficiency of these services also need to be studied in north-western India. The previous studies in this respect on the Post Offices belong to the region of Kerala, Tamilnadu, Assam and Mumbai. Hence, the researcher feels the need to conduct study on Post Offices of North-Western Region in India in regard to utility, efficiency and customer satisfaction, because there are cultural and social differences in the regions (Mumbai, Tamilnadu & Assam), where such studies have been conducted, the results of the present study in this respect are expected to vary.

2.5 FEASIBILITY STUDY

Being a study based in India as well as covering only the region of North-Western India, the study will be well impactful as well as feasible to pursue. Primary data will include feedback from the service user and secondary input will be the officially available reports and both of them are easily accessible.

2.6 OBJECTIVES OF THE STUDY

The studies conducted in the said regions are till the time period of 2016 respectively. No empirical study has been conducted since the post offices were assigned IT enabled services. Further, because of difference in culture, habits and attributes of satisfaction, the level of satisfaction of the customers, may not be applicable to the customers / consumers of the post offices of north-western India. Similarly, the work culture and working habits of the employees covered in previous studies in regions other than north-western India, may not be similar to the North-Western India. Hence, there is a need to study work efficiently and performance of the post offices of north-western India in the light of this variable. This has interested the investigator to conduct study on post offices of north-western India with the following objectives:

1) To study the customer satisfaction of the customers of Post Offices of North-Western India.
2) To measure the performance of IT Enabled Services* in Post Office, i.e. percentage of people using, frequency of such usage, benefits and losses of these services to the customers.
3) To analyze the growth and performance of various saving schemes of the post offices.

*** IT Enabled Services offered by India Post**

Track Your Consignment, e-Payment, e-Post Message, e-Access to Postal Saving Bank Accounts, Internet Banking, Online information and application of various schemes and services, e-Grievance System, Instant Money Order (IMO), International Money Transfer (IMT), Money Gram - Money Transfer, Electronic Clearance Service (ECS), IFS Money Order, Mobile Money Transfer, India Post Payments Bank, Forex Services, Postal Life Insurance(PLI), Purchase philatelic stamps online, Platform for small businesses/weavers to enable them to sell their products online through the Snapdeal portal.

2.7 STATEMENT OF HYPOTHESIS

H_O: There is no influence of quality of services on customer satisfaction in case of Indian Postal Services, with a special reference to the Post Office Saving Schemes.
H_A: There is a significant influence of quality of services on customer satisfaction in case of Indian Postal Services, with a special reference to the Post Office Saving Schemes.

3. RESEARCH METHODOLOGY

A research method is a blue print of a research program, based on which we imply that how to execute upon our whole research activity and devise a solution to the problem. Likewise, following is the planned tentative schema of the present research plan for this study:

3.1 DATA COLLECTION, TABULATION AND ANALYSIS

Before we discuss about the techniques, it will be well impeccable to discuss about the tools applied by the earlier studies held by the researchers those are relevant to the content and context of the phenomena. The discussion of few studies in this regard is as follows:

Dipankar Malakar (2013) used both primary and secondary data to prepare his study on the Role of Indian Post in Financial Inclusion. Primary data was collected from Office of The Chief Post Master General, Assam Circle. Secondary data was collected from annual administrative report, annual report and websites of the Indian post and from RBI.

Charusheela Birajdar and Akshata Joshi, (2016) used primary data collection method for their Review of Customer Satisfaction for Indian Postal Services. The responses of the customers were collected through the questionnaire. The secondary sources of data collection were also adopted like books, journals, web sites etc. The responses of the customers are collected and analysed with tabular and graphical presentation. The opinions of customers regarding various postal services are analysed.

Hari Sundar G, Prashob Jacob, (2009) studied the investment pattern and the respondent's perception towards Post Office saving Scheme and the method of data collection was only by way of questionnaire distributed to the respondents. The data was collected on random basis.

As evident from the methodology of above studies in variant regions, it is proposed to collect primary data, by way of a pre-structured questionnaires from the customers of India Post from North-Western India Region visiting Post Offices of above region, on Simple random bases. A detail of proposed circle wise sample coverage is mentioned below. Officials from different circles of North-Western India* will be also interviewed to supplement the study. A secondary data supplement will be from the relevant and officially published reports and statistics. The data collected will be tabulated in two formats, viz., and simple table and cross table. The data will be then analysed by simple percentage, Chi - square test and other tests.

*** Postal Circles of India Post, coming in the North-Western Indian Region and proposed sample size**

S. No.	Postal Circle Name	Postal Circle Code	Proposed Sample
1	Delhi	C	100
2	Haryana	E	100
3	Himachal Pradesh	F	100
4	Jammu & Kashmir	G	100
5	Punjab	N	100
6	Rajasthan	O	100

3.2 DATA INTERPRETATION

The final thesis dissertation report will be prepared as per the provided university publication and reporting guidelines. The General Schema for the Dissertation Report will be as follows:

1) INTRODUCTION
2) LITERATURE REVIEW
3) RESEARCH METHODOLOGY
4) ROLE OF POST OFFICE IN FINANCIAL INCLUSION
5) ADMINISTRATIVE PRACTICES AND EFFICIENCY OF POST OFFICES
6) FINANCIAL AND ADMINISTRATIVE PERFORMANCE OF POST OFFICES
7) CHALLENGES BEFORE POST OFFICES IN PROVIDING FINANCIAL SERVICES
8) PERCEPTION OF VARIOUS STAKEHOLDERS OF POST OFFICES IN INDIA
9) PRESENT LEVEL OF CUSTOMER SATISFACTION FOR POSTAL SERVICES
10) SUMMARY, CONCLUSION AND RECOMMENDATIONS
11) SELECTED REFERENCES AND BIBLIOGRAPHY
12) APPENDICES: TABLES, GRAPHS AND FIGURES
13) ANNEXURES: QUESTIONNAIRES, FORMS AND REPORTS / STATISTICS USED

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Jobs in 4.0 Industrial Era

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Abstract

In the growing global economy and in the midst of the transformation of the Industrial era due to Information Technology, leading us towards Industry 4.0, the time is to now start preparing to study the changes in the Job expectations by the business industries. According to the Future of Jobs Report from the World Economic Forum the skills required by jobs will change and the current skill will be obsolete, hence it is essential to study the job requirements, so as the today's workforce can be changed. Fast-paced technological innovations mean that current work places soon will have to be shared with artificial intelligences and bots, so as to stay ahead of the curve. The workforce needs to start now by adopting a commitment to lifelong learning and acquire the skills needed to sustain in the future workplace of industry 4.0.

It is important for HR, as a function, to keep this in mind, after all, they're not only building the reputation of the company but also managing its most precious resource. And they need to 'handle with care!'

This research study is based on secondary literature published through articles and reports on future of jobs due to the transforming of workplaces and employment needs.

Key Words: Industry, transformation, job, employment, skills.

Introduction:

"Machines are coming to take our jobs" has been a concern for hundreds of years, but it has raised productivity and also fears that thousands of workers would be thrown out on the streets.
Innovation and technological progress have caused disruption, but they have created more prosperity than they have destroyed. Proactively identifying and engaging high-risk and high-potential talent is necessary to create a sustainable, capable talent pipeline. Yet today, businesses are riding a new wave of uncertainty as the pace of innovation continues to accelerate and technology affects every part of lives. It is known that robots are taking over thousands of routine tasks and will eliminate many low-skill jobs in advanced economies and developing countries. At the same time, technology is creating opportunities, paving the way for new and altered jobs, increasing productivity, and improvingthe delivery of public services. While considering the scope of the challenge to prepare for the future of work, it is important to understand that many children currently in primary school will work in jobs as adults that do not even exist today.
Many jobs today, and many more in the near future, will require specific skills which will be a combination of developmental know-how, problem-solving, and critical thinking as well as soft skills such as perseverance, collaboration, and empathy. In the evolving gig economy the days of staying in one job, or with one company, for decades are declining, employees may likely have

many assignments over the course of their careers, which means they will have to be lifelong learners.

Innovation will continue to accelerate, but developing countries will need to take rapid action to ensure they can compete in the economy of the future. They will have to invest in their people with a fierce sense of urgency especially in health and education, which are the building blocks of human capital to harness the benefits of technology and to foresee its worst disruptions. But right now too many countries are not making the critical investments in enhancing the human technological skills.

With the ascend into a new decade of technology, the study's approach is towards Talent Transformation and Job with skills not degrees, thus focusing on how the HR function is gearing up for changing business expectations to deliver outcomes in an era that is dominated by employee experience, effective adoption of digital and maturing data science.

If attracting and nurturing talent is essential to build a successful organization and a happy workforce, then equity, fairness and collaboration must be its cornerstones. Gender sensitivity, equal pay and safety go a long way to build trust between the employer and the employee. HR being the architect of any business organization needs to regularly revisit its policies promoting equal opportunity. Increasing gender diversity with more number of women at managerial positions helps build a global leader.

Industry 4.0 presents several challenges and opportunities to all the stakeholders in a country and it is needed to strive at finding solutions to these challenges at the same time taking advantage of the opportunities in achieving sustainable growth. A major challenge that Industry 4.0 will throw up is changes in skill required for new type of employments; at the same time decline in prospects of employment for persons not having the new requisite skills. There are also opportunities wherein the benefits of Industry 4.0 could help in education, telemedicines, effective disaster response, etc.

Objectives

- To study how we create talent with skills required by jobs in business and to understand the effectiveness needed of jobs in future sector needs.

Research methodology:

In order to understand the emerging trend in jobs we have done systematic review literature and secondary data study on jobs trends and new skill for the workplace. Research study for this paper was done through various open sourced from internet searches and use of management journal open databases such as EBSCO and websites of the corporate.

Literature Review:

The impact of globalization is expected to increase as digital technologies increasingly enable the movement of labor virtually (Baldwin, 2018). We are seeing teleworking becoming mainstream, the rise of the 'digital nomad' where a person can work from anywhere in the world, and contingent employment models (Roos and Shroff, 2017)

First, technology is blurring the boundaries of the firm, as evident in the rise of platform marketplaces. Using digital technologies, entrepreneurs are creating global platform–based businesses that differ from the traditional production process in which inputs are provided at one

end and output delivered at the other. Platform companies often generate value by creating a network effect that connects customers, producers, and providers, while facilitating interactions in a multisided model. (World Bank, 2019)

Technological advances – artificial intelligence, automation and robotics – will create new jobs, but those who lose their jobs in this transition may be the least equipped to seize the new opportunities. Today's skills will not match the jobs of tomorrow and newly acquired skills may quickly become obsolete. The greening of our economies will create millions of jobs as we adopt sustainable practices and clean technologies but other jobs will disappear as countries scale back their carbon- and resource-intensive industries. Changes in demographics are no less significant. Expanding youth populations in some parts of the world and ageing populations in others may place pressure on labour markets and social security systems, yet in these shifts lie new possibilities to afford care and inclusive, active societies (Work for a brighter future – Global Commission on the Future of Work International Labour Office – Geneva: ILO, 2019).

Demographic changes are a key determinant of prospects for the global labour force. The world population is predicted to expand from 7.349 billion in 2015 to 9.725 billion in 2050 and up to 11.213 billion by 2100. More than half of this global population growth will happen in Africa until 2050. Thereafter, Africa's dependency ratio is projected to stabilize as the continent sees its fertility rates converge to lower levels – similar to those observed in other world regions – and benefits from slowing growth of its younger population and a declining youth-dependency ratio. Other regions which had experienced similar trends much earlier are now expected to have a continuous increase in their dependency ratio, led by an ageing population and an expansion of the silver economy

Findings: Emergence of tech-driven careers

The healthcare ecosystem is rapidly shifting towards innovative care delivery models such as virtual, remote, and alternate care. The deployment of artificial intelligence (AI), advanced data analytics, Internet of Things (IoT) as well as other emerging technologies and data-driven tools, is changing the nature of healthcare solutions and delivery systems. A 2014 HIMSS Analytics survey shows that over 84 percent of healthcare organizations are using cloud technology. As advances in technology herald changes in business models, the demand for full-stack developers and proficient, diverse coding skills is increasing in health-tech. Let's take a look at eight key hiring trends that will impact health-tech companies in 2020:

High demand for full-stack technologists and skills in AI, ML, big data and analytics, cloud, blockchain, and robotics: A 2014 HIMSS Analytics survey shows that over 84 percent of healthcare organizations are using cloud technology. The Gartner Hype Cycle already highlights advanced AI and analytics, one of the emerging technologies with a significant impact on business, society, and people over the next five to 10 years. As advances in technology herald changes in business models, the demand for full-stack developers and proficient, diverse coding skills is increasing in health-tech. mainstream strategy will naturally be sought after.

Niche hiring: While conventional industries are experiencing a downturn in their hiring plans, health-tech companies are also focusing on right-sizing themselves. This means that niche hiring will continue to witness an upward trend. However, there are several technology skills for which it is challenging to find the right talent. Recruiter studies show that 20 percent of their current requisitions are for roles with which they are unfamiliar – and it takes 38 percent longer to fill such

roles. This also applies to positions in allied sectors such as nursing staff, therapists, and pharmacists, who now find technology playing a more significant role in their day-to-day work.

Upskilling/reskilling in emerging technologies: technology upgrade is facing issues around the irrelevance of a workforce that has not reskilled or upskilled themselves. As per a report, by 2022, nine percent percent of the workforce in the IT-BPM sector would be performing new roles that do not exist today, and 60-65 percent would be deployed in jobs with radically altered skill sets. Therefore, micro as well as classroom learning is becoming big and will be a major trend in 2020. Employees and employers are investing more in training on emerging technologies to be able to meet the work demands of the future. The advantage is two-fold; a skilled and relevant workforce and talent that is less likely to leave.

Hiring candidates with the potential to handle ambiguity and adapt: A key quality being pursued by employers to meet the demands of ever-changing technology and business landscape is the ability to handle ambiguity – which refers to the resilience, grit, willingness to experiment, risk-taking capability and learning agility required to navigate uncharted waters. This means that employers are evaluating candidates not only for intelligence quotient, emotional and social quotient, but also adversity quotient.

Hiring the best of talent via campus recruitment: Due to the constantly evolving skill requirements and technology landscape, health-tech companies are directly hiring from campuses and then coaching their hires and skilling them as per the need of the organization. However, there is a catch-22 here, as this investment in talent makes the organization an attractive poaching ground for competition. Thus, investing in creating growth opportunities within the organization and devising talent retention programs is now more critical than ever before.

Hiring through the digital and social route is picking up: As roles in the health-tech space continue to evolve, companies are taking to non-conventional routes to reach their target employees. As per recent studies, more than 50 percent of millennials in India use smartphones to search for a job While LinkedIn is an obvious platform, there are many other social tools and apps that are being used to identify opportunities and explore possibilities before making employment decisions.

Competition from a hiring perspective is changing: It's not just health-tech, but other surrogate sectors are also emerging as competitors when it comes to hiring in the technology space. Numerous organizations are setting up or planning to set up their Global In-house Centers (GICs) in India to support their technology needs. Therefore, health-tech companies will have to be quick in capitalizing opportunities in the market. This will further push the envelope for skill-based hiring.

Focus on building an inclusive and diverse workforce: In the technology space, especially in health tech, there is a lot of focus on diversity initiatives. According to Glassdoor, 67 percent of job seekers use diversity as a critical factor when considering job offers. It is believed that workplace diversity is crucial for promoting innovation and creativity within an organization. Given the rampant competition around acquiring the right talent, initiatives such as return to work programs, flexible work timing, work-from-home opportunities, are on the rise. These target to bring talented women, veterans, and any other skilled professionals back into the workforce and give recruiters a chance to look beyond traditional talent acquisition practices.

These eight trends show that hiring perspectives and mechanisms in the health-tech space must continue to evolve in alignment with the rapid speed at which this industry is advancing. There is increased competition for those skilled in new-age technologies; hence, companies will have to demonstrate great agility to secure the digital expertise needed to stay ahead of the curve.

The Banking Financial Services Insurance (BFSI) sector in India is changing at an exponential pace and the transformation has the potential to redefine in customer experience, partnership & alliances, technology and analytics-led business and revenue generation streams, et al. A report by the National Skills Development Corporation (NSDC) has alluded to the fact that the (BFSI sector in India is estimated to generate around 1.6 million jobs. These jobs, however, will assume a new avatar in 2020.

Key regulatory reforms and tech-driven innovations are disrupting the organizational landscape of the Indian BFSIs and creating new jobs within the sector. This will necessitate HR departments of BFSI organizations to recalibrate their talent acquisition strategies to deploy agile, tech-savvy profiles that are a part of mid-to-long term play for the organizations.

Emerging digital technologies and new-age intelligent automation tools are changing the operational frameworks of BFSI institutions and redefining customer experiences. Jobs in the banks and financial services industry of tomorrow will be split into three broad categories - data analytics, risk management and alliances. These are the jobs that will create USP, IP and differential edge for the organizations.

As the Indian BFSI sector struggles to increase business volumes and improve profit margins, leveraging big data will be central to BFSIs for steering their business on a high growth trajectory. The sector is anticipated to witness a substantial rise in the demand for skilled data scientists and business analysts.

As complex as the term may sound, blockchain technology is a key fintech tool which is easy to implement and holds the potential to simplify core transactional processes. A large number of BFSI organizations are fast realizing the user-friendly attributes of a blockchain database and its high-value utility in data security and scalability, ensuring asset protection.

A key characteristic of blockchain infrastructure is a decentralized customer database with a high level of transparency. In concurrent times, the BFSI sector is highly vulnerable to cyber-attacks such as malware which raises the risk of fraud and data theft. Blockchain can provide a complete security cover and be used to boost cyber security across the shared system network of BFSI organizations. The rising possibility of industry-wide adoption of blockchain in BFSI will require the specialized services of skilled blockchain engineers. These technically qualified professionals will specialize in devising online encryptions to allow only authorized account holders to access account information to ensure secure online transactions.

A high-quality book will be the best measure of a successful BFSI. Hence, seasoned Risk Management Professionals who are agile and can adapt to basing risk management and credit decisions on data as against traditional look-n-feel model will be in high demand. They will be the core when it comes to bringing stability to the organization.

Gone are the days when the core BD team was required to generate new business and revenue. Striking effective, meaningful alliances and partnerships that complement the strengths of each partner will be key to bringing newer avenues to the organization. Profiles that understand

emerging market places, have strong networks, know how to leverage tech to bring effectiveness and scale to alliance will be in demand always.

Jobs that will stay but will be non-core and automated at Godspeed

Operational framework is anticipated to become increasingly tech-driven and dynamic. Handling voluminous levels of data, mining it intelligently to deliver trends that impact and revolutionise internal processes and business approaches will be key to staying operationally relevant in a highly competitive environment. Jobs that will stay essential, will be largely outsourced, if not, at best will grow till middle management level of the organizations. Such jobs are related to simple operations, document collection, records management, etc.

Upskilling and Reskilling

As technological innovations and automated solutions are largely integrated into mainstream BFSI operations, skill redundancies will prove to be a tough operational challenge for the sector. Organizations in the BFSI sector will need to make substantial investments in reskilling and upskilling their employees. There is an urgent need to plug the widening skill gap in the sector and enhance employee capability as BFSI organizations transit to a highly tech-driven ecosystem.

Skills and Career Progression

Future workforces aspiring for a long-term career in the expanding BFSI domain will need to develop key soft skills along with technological and sector-specific knowledge competencies. Employees will need to be agile and flexible to develop cross-functional expertise to remain at the top of their curve in their areas of specialization. They need to become team builders to build trust and confidence among their colleagues and create a collaborative work environment.

True Test for 2020?

Unless for core-expert jobs like data scientists, breadth of skill will be as critical as the depth of skills for generic jobs and jobs that are on the verge of automation. However, the moot question is - do you have cross-functional expertise e.g. can you do under-writing as effectively and vice versa? If you are in underwriting, can you enhance the revenue pool for the organization and don the Business Development hat? If you are good at cross-functional synergies, chances that you will not just survive but thrive are far higher in 2020.

Conclusions:

Globalization is the new norm and, there is a dramatic shift in the way companies today engage with consumers externally and internally; and both require a strong technology backbone to boost productivity. If five years ago, e-commerce was the buzzword, today it is Artificial Intelligence (AI). There is tough competition over honing new skills in this digital economy. Adapting and steering through unpredictable technology advancement, training and upskilling are more important than ever, in order to remain employable skilled jobs need to be created. Simultaneously, we need to create a more diverse, inclusive and gentle workplace and world around us. So, for companies to leap into the next decade, while employees need adopt cutting edge technology and adapt to the fast moving environment, decreasing absenteeism and increasing productivity. Similarly, employers need to help them achieve this by ensuring work-life balance, physical and mental well-being.

The key message of this study is that the future of work is organisations need and will largely depend on the policy decisions countries make. It will be the nature of such policies, ability to harness the potential of the unprecedented digital and technological change while coping with the challenges it poses, which will determine whether organisations succeed or fail. Thus In this challenging context, it is crucial to refocus our attention towards people and well-being. In the digital era, it is important that people feel that their jobs will be supported if they lose out, and helped in their search for new and better opportunities. The pace and speed of this change requires swift and decisive policy action inspired by a new typeof growth, one that is more inclusive and more sustainable.

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Empirical Study on Determinants of Post Adoption Online Shopping Behavior amongst Indian Youth

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Abstract
This research work is an attempt to explore determinants an existing user's intention to continue with e-shopping, especially amongst Indian youth (15 to 24 age category). Existing knowledge base on online shopping behavior and its contextual determinants were studied to understand the theoretical advancements. Based on different constructs adopted by various researchers a conceptual framework was developed and seven factors were proposed as the determinants of a user's intention to continue with online shopping. By using previously validated scales and expert's opinion method a structured questionnaire was developed. The responses were collected and 707 completely filled responses were used for statistical tests. On the basis of statistical support, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) were found to act as the determinants of a user's intention to continue with online shopping. Interestingly, Perceived Trust (PT) and Perceived Risk (PR) were found to have insignificant impact on behavioral intentions which is contrary to the previous research. These findings underline the need for reinvestigation in trust and risk taxonomy and its impact on post adoption online shopping behavior. A dedicated investigation on determinants for post adoption online shopping behavior amongst Indian youth is the major contribution of this research work. Based on the findings, vital suggestions to e-retailing companies were made and scope for future research activities was discussed.

Keywords: online shopping Behaviour, perceived usefulness, Indian youth, Online shopping adoption

INTRODUCTION

During the last decade, the Indian economy witnessed some interesting developments. According to the report by TRAI (Telecom Regulatory Authority of India), the cell phone population grew from 120 million in 2008 to 1160 million in March 2018; resulting into a teledensity of 90.1% (teledensity is number of telephone connections behind every 100 citizens). Secondly, the global e-commerce giants such as Amazon and Wal-Mart entered Indian market with their ambitious expansion plans. The Indian telecom industry witnessed the entry of 'Reliance Jio' which propelled a price war, resulting in considerable decrease in cost of internet services. According to a research report by Economic Times, India became the cheapest internet providing economy in 2018, with per GB (Gigabyte) cost of USD0.26 compared to the global average of USD8.53. According to Assocham-PwC study, India's internet data consumption is expected to grow at 72.6% CAGR (Compounded Annual Growth Rate) during 2017-22, making it, the largest consumer of internet data across the world.

These developments coupled with growing consumerism and young, affluent population has created stupendous growth opportunities for e-commerce in India. According to a report by IBEF (India Brand Equity Foundation), Indian e-commerce industry is expected to grow from USD38.5 billion in 2017 to USD200 billion by 2026 at a staggering 51% CAGR. Such a growth momentum has gathered attention of academic scholars from India and the globe. Arora & Rahul (2018) and Vaghela (2017) tried to explore various behavioral aspects of online shopping in Indian context and underlined the need for developing a model of online shopping adoption behavior, specific to the Indian context. Moreover, the critical analysis of existing literature concludes that, the studies in Indian context do not explore determinants of pre and post adoption separately. This research work is an attempt to fill this gap by exploring determinants of post adoption online shopping behavior amongst the Indian youth. The specific research objectives are as follows,

a) To identify and collate various determinants of post adoption online shopping behavior on the basis of existing knowledge base.
b) To propose a framework for the post adoption, online shopping behavior and to seek statistical support for the theorized framework in context of Indian youth.

THEORETICAL BACKGROUND & CONCEPTUAL FRAMEWORK

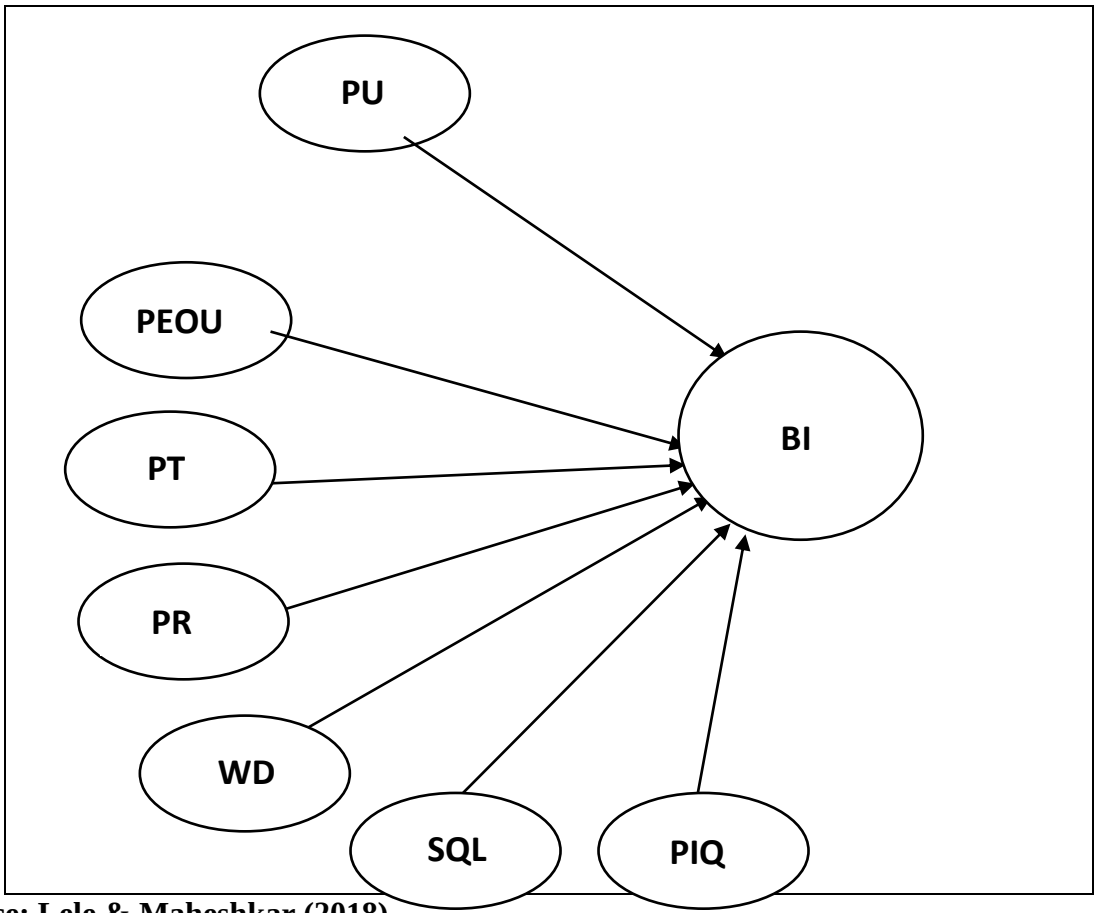
Technology and human interactions domain has been researched by the scholars in consumer behavior, psychology and technology research. Technology Acceptance Model (TAM) by (Davis, 1989) is considered as the seminal work in this context. This model provides studies the impact of external factors on internal beliefs, attitude and intentions. The model conceptualized Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) as the determinants of attitude of a user, which has a direct impact on behavioral intentions (BI). Although this model is based on classical theories such as TRA (Theory of Reasoned Actions) by (Fishbein & Ajzen, 1975) and Theory of Planned Behavior (TPB) by (Ajzen, 1985), it focuses more on actual adoption process of technology rather than cognitive factors such as attitude and perceived behavioral control. (Venkatesh & Davis, 2000) presented an extension of original TAM, which is coined as TAM 2. In a longitudinal study, this model tests proposed relationships for voluntary and mandatory usage in three steps (pre-implementation, one month after implementation and three months after implementation). Two major dimensions (social Influence process and cognitive instrumental process) were recognized as the predictors of behavioral Intentions. Discovery of antecedents of Perceived Usefulness such as Subjective Norms (SN), Image, job relevance, output quality and result demonstrability is the major contribution of this paper. It was proved that, Subjective Norms (SN) acts as better predictor of Intentions when compared with perceived usefulness and perceived ease of use, in mandatory settings and plays non-vital role in voluntary usage.

By considering dual entity of an online shopper (as a shopper and computer user), and using construct of four different technology acceptance models, (Koufaris, 2003) presented Online Shopping Acceptance Model (OSAM) to explain a user‘s adoption intention to return to a particular e-vendor. Consideration of a user’s intention for unplanned purchase and related behavioral engagements is the major contribution of this research work. Similar to this model, (Zhou, Dai & Zhang, 2007) conceptualized Online Shopping Acceptance Model which includes two dimensions of online shopping adoption determinants (online factors and shopping factors).

Although the study used TAM construction, the Perceived Usefulness (PU) was replaced by perceived outcomes to cover both, the benefits and risk in online shopping. The model also studied the impact of demographic variables such as gender on shopping orientation. Three new antecedents of BI (Shopping motivation, shopping orientation and online experience) were added to the construct and statistical significance of the proposed relationship was sought. The literature review indicates that TAM is used by various researchers such as (Al-maghrabi & Dennis, 2005) and (Lin, 2007) to unearth various aspects of online shopping behavior in different geographical settings. In Indian context, we found researchers such as (Balamurugan, Sathish & Satyanarayanan, 2013) and (Selvakumar, 2014) applying TAM construct to study online shopping adoption and related behavioral aspects.

In order to develop conceptual framework, the validated relationships from about 203 research papers on online shopping behavior were collated together. Based on the statistical strength demonstrated by each of the determinants considered, seven factors were proposed as antecedents of a user's intentions to continue with online shopping. Based on the statistical support and Meta-analysis results, various determinants of shopping intentions were considered and the conceptual model for post adoption online shopping behavior is conceptualized, which is presented as Figure no. 1.

Figure 1: Conceptualized Model for Post-adoption of Online Shopping



Source: Lele & Maheshkar (2018)

The definition, literature support for each of the proposed relationship and proposed hypotheses are discussed as follows,

Perceived Usefulness (PU): According to (Davis, 1989), PU is defined as "The extent to which a person believes that using a particular system will enhance his or her job performance". PU is one of the core elements of TAM construct and is being widely considered as a predictor of behavioral intentions by researchers from technology adoption (Al-maghrabi & Dennis, 2005 and (Celik & Yılmaz, 2011). Our conceptual model considers PU as one of the determinants of a user's intentions to continue with online shopping.

H1: Perceived Usefulness (PU) has a direct impact on an existing user's intentions to continue with online shopping.

Perceived Ease of Use (PEOU): (Davis, 1989) defines PEOU as " a person's belief that using a particular system will be free of effort". In other words, it is the degree to which a user finds a particular technology as suitable and by using the technology; a user's task can get simpler. Similar to PU, this factor is being widely considered as the predictor of behavioral intentions (Lin, 2007).

H2: Perceived Ease of Use (PEOU) has a direct impact on an existing user's intentions to continue with online shopping.

Perceived Trust (PT): PT is another widely used antecedent of a technology user's intentions. According to (Mayor, 1995) "Trust can be described as the belief that the other party will behave in a socially responsible manner, and, by so doing, will fulfill the trusting party's expectations without taking advantage of its vulnerabilities' '. Various researchers tried to explore dimensions of trust and trusting beliefs and tried to integrate these factors into the study construct (Murali & Mallikarjuna, 2014), (Mao, 2010). Our study considers PT as one of the determinants of the user's intentions.

H3: Perceived Trust (PT) has a direct impact on an existing user's intentions to continue with online shopping.

Perceived Risk (PR): Perceived risk has been defined as "The consumer's perceptions of the uncertainty and the possible undesirable consequences of using the system" by (Tshin, Tanakinjal & Sondoh, 2010). Similar to PT, we found a larger theoretical support for Perceived Risk as one of the predictors of intentions. Although, the researchers such as (Agag & El-Masry, 2017) did explore the relationship of PR with other variables such as PT, in our conceptual model, direct impact of PR on intentions is considered.

H4: Perceived Risk (PR) has a direct impact on an existing user's intentions to continue with online shopping.

Website Characteristics (WC): Although, there is no specific definition of Website Characteristics prescribed in the literature, (Korgaonkar, Silverblatt & Girard, 2006) defines it as, "Proper information services with the vendor includes features like option to communicate with the salesperson, reviews from other shoppers, third party evaluation and information exchange with online vendor". Since web interface is the first point of contact between a user and an e-retailer, the process of customer engagement starts with a good website design and speed of navigation. The ease at which a user can search and browse information it needs may have an impact on intentions to continue with online shopping.

H5: Website Characteristic (WC) has a direct impact on an existing user's intentions to continue with online shopping.

Service Quality Factors (SQL): Similar to any other services industry, the perceived service quality felt by a user is expected to have an impact on behavioral intentions. (Ha & Stoel, 2009) defined website service quality as "overall consumer perceptions of the excellence and effectiveness of an e-tailer's product and/or service offering through its virtual store". (Wolfinbarger & Gilly, 2003) conceptualized 'e-TailQ' to measure the quality of services offered in e-retail. Taking a clue from this, our study considered SQL as a part of the construct.

H6: Service Quality Factors (SQL) has a direct impact on an existing user's intentions to continue with online shopping

Product Information Quality (PIQ): Similar to WD, although there is no prescribed definition of PIQ, it can be broadly defined as the correctness and sufficient information about products displayed on the website. This includes all technical details, color, shape and details about the usage etc. (Yan & Dai, 2009) presented a decision making model for online consumers and concluded that, the improper or false information may result into loss to a user, which ultimately impacts the intentions to shop online. Considering theoretical support for this factor, it was considered in the construct of the study.

H7: Product Information Quality (PIQ) has a direct impact on an existing user's intentions to continue with online shopping

RESEARCH METHODOLOGY & SCALE DEVELOPMENT

The objective of this study is to identify determinants of post adoption online shopping behavior amongst India youth. For defining sample population, the definition of 'youth' by United Nations (15 to 24 age bracket) is considered. The respondents were chosen by using non probability convenience sampling in selected cities of India and were interviewed by a structured questionnaire, developed by pooling of items from previously validated scale on various factors included in the construct.

As a first step in designing the instrument, items from previously validated scales such as (Venkatesh & Bala, 2008), (Koufaris, 2004), Venkatesh, Morris and Davis, 2003) and (Davis, 1989) were collated together. With the help of expert's opinion method (5 experts each from the online shopping domain and from the academia) and focused group interview method, the face validity of the instrument was ensured. A pilot study was conducted on a sample of 143 respondents. The reliability score for the instrument with 43 items stood at 0.81, which is well above the threshold prescribed by (Nunnally, 1978). The reliability score of the instrument suggests that the scale is reliable in terms of producing internally consistent results.

1. Data Collection & Analysis

Since the survey target is youth (15 to 24 age category), the data was collected from premiere educational institutes offering graduate and undergraduate courses. The data was collected by both, online questionnaire and paper-pencil method. The participation in this survey was voluntary and

no financial remuneration was paid to the participants. The data was collected from 737 respondents out of which 30 forms were rejected due to incomplete data. For statistical analysis, data from 707 respondents was used. Out of this sample, 61% of the respondents were male and 68% of the respondents belong to the 21-23 age bracket. 79% of the respondents have more than 2 years of online shopping experience. The data for the developed questionnaire was collected during Jan 2018 to April 2018. The demographic details are shown as Table 1

Table 1: Details of Demographic Data (n=707)

Description	**%**
Sex	
Male	61%
Female	39%
Total	**100%**
Age	
Below 20	16%
21 to 23	68%
Above 23	16%
Total	**100%**
Occupation	
UG	21%
PG	71%
Working	8%
Total	**100%**
Online Shopping Experience	
Less than 1 year	6%
1 to 2 years	16%
2 to 3	29%

More than 3	50%
Total	**100%**

The reliability score for the data obtained from the entire sample stood at 0.859, which is well above threshold prescribed by (Nunnally, 1978). To uncover the underlying structure of large variables, Exploratory Factor Analysis (EFA) was applied. All 43 items related with seven theorized independent factors were considered for the EFA. All items with KMO value more than 0.5 were retained and clubbed into various factors. It resulted in the creation of five factors with an explanatory power of 56.6 %. The five factors extracted and their variance contributions are as follows, Perceived Usefulness (14.9%).Web Characteristics (11.7%), Perceived Trust (11%), Service Quality (9.7%) and Perceived Ease of Use (9%) respectively. The details of EFA are shown as Table 2

Table 2: Total Variance Explained-Exploratory Factor Analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.076	32.164	32.164	7.076	32.164	32.164	3.281	14.913	14.913
2	2.075	9.433	41.597	2.075	9.433	41.597	2.581	11.731	26.644
3	1.235	5.616	47.213	1.235	5.616	47.213	2.430	11.046	37.690
4	1.048	4.766	51.979	1.048	4.766	51.979	2.126	9.662	47.353
5	1.024	4.656	56.635	1.024	4.656	56.635	2.042	9.282	56.635

To verify the latent structure emerging out of EFA, the Confirmatory Factor Analysis (CFA) was applied. The measurement model consisted of 21 items from five factors emerged under EFA. The final measurement model obtained was close to good fit (Z 2 =625.3, degrees of freedom [df] =220, pb.000). Comparative fit index [CFI] =.92; root mean square error of approximation [RMSEA] =.05 GFI=.92 NFI=.88, the value of Standardized Root Mean Residual [RMR] = 0.03. The details of CFA are shown as Table 3.

Table 3: CFA Results and Comparison with Threshold Values

Name of the Indices	**Values Obtained**	**Threshold Values and references**	**Remarks**
(CMIN/df)	2.84	<3 Good, <5 Permissible, Hu and Bentler (1999)	Good
RMR	0.03	Smaller the better. Average =0.08*	In-line

GFI	0.92	≥ 0.90 (Hair et al., 2006), Average =0.90*	Good
AGFI	0.90	≥ 0.90 (Hair et al., 2006), Average =0.86*	In-line
CFI	0.92	≥ 0.90 (Hair et al., 2006) > .90 (Hu & Bentler, 1999)	Good
RMSEA	0.04	< 0.08 (Hair et al., 2006)	Good
NFI	0.88	.90 (Hair et al., 2006), Average=0.93	Below
IFI	0.92	≥ 0.90 (Hair et al., 2006) Average=0.93	In-Line

According to (Hair, William, Barry, 2006), GFI value of 0.9 or more is considered to be a good fit, so the GFI value obtained under the model is satisfactory. According to the same research work, all important indicators such as CFI, RMSEA, AGFI are within prescribed threshold limits. The only indicator (NFI) is slightly below the prescribed limit of 0.9 and hence it is considered. According to (Byrne, 1998) RMR value <.05 is preferred and the results of the study get a valid support (RMR=0.03).

After conducting reliability analysis, EFA and CFA, the data were tested for structural equation modeling to evaluate relationship between the independent variables (Perceived Usefulness, Web Characteristics, Perceived Trust, Service Quality and Perceived Ease of Use) and behavioral intentions. The goodness of fit indices was then evaluated to determine if the model could be considered reliable in testing the hypotheses. The structural model ($\chi 2$ (14) =102.953, CMIN/df =2.91, IFI=0.9, CFI=0.9, RMR=0.03, RMSEA=0.05, GFI=0.9) yielded a reasonable fit to the data. All goodness-of-fit indices also indicated a good fit.

CMIN/df stood at 2.91, which is a good result, according to (Hu and Bentler, 1999) The comparative fit index (CFI) and incremental fit index (IFI) were in line with the guideline of .90 prescribed by Hair et al. (2006)II. The RMSEA stood at 0.05, in line with the accepted threshold of less than or equal to 0.05 (Moosbrugger & Müller, 2009). Except NFI=0.86, all other indices are either in line or well within prescribed threshold limits. The details of SEM are shown as Table 4

Table 4: SEM Indices and Comparison with Threshold Values

Name of the Indices	**Obtained Values**	**Threshold Values and references**	**Remarks**
(CMIN/df)	2.91	<3 Good, <5 Permissible, Hu and Bentler (1999)	Good

RMR	0.03	Smaller the better. Average =0.087*	Good
GFI	0.9	> 0.90 (Hair et al., 2006), Average =0.915*	In-line
AGFI	0.88	>0.80 Hu and Bentler (1999)), Average =0.877*	In-line
CFI	0.90	≥ 0.90 (Hair et al., 2006) > .90 (Hu & Bentler, 1999)	In-line
RMSEA	0.05	<0.05 (good fit) (Schermelleh-Engel, Moosbrugger & Müller,	Good
NFI	0.86	≥ 0.90 (Hair et al., 2006) Average=0.93	Below
IFI	0.90	≥ 0.90 (Hair et al., 2006) Average=0.933	In-Line

2. HYPOTHESIS TESTING

Based on the conceptual model, seven relationships were proposed in the initial stage of the study. Seven factors (Perceived Usefulness (PU), Perceived Ease of Use (PU), Perceived Trust (PT), Perceived Risk (PR), Web Characteristics (WC), Service Quality (SQL) and Product Information Quality (PIQ) were proposed as the direct determinants of an existing user' intention to continue with online shopping.

As per the results obtained from EFA, only five factors emerged and two proposed factors such as Perceived Risk (PR) and Product Information Quality (PIQ) got eliminated. **As a result, H4 and H7 were dropped from the model.** All five factors emerged were tested for CFA and structural equation. As per the structural equation and path analysis, following relationships were tested, against the threshold prescribed by (AL-Majali & Nik Mat, 2011). The results of the proposed hypotheses are as follows,

H1: The relationship between Perceived Usefulness (PU) and Behavioral Intentions (BI) was found to be statistically significant as PU (CR=4.0, P=0.000) falls within the prescribed threshold. It indicates that PU is a determinant of a user's intention to continue with online shopping. **H1 accepted.**

H2: SEM results validates the relationship between Perceived Ease of Use (PEOU) and Behavioral Intentions (BI) as PEOU (CR=2.13, P=0.000) falls within the prescribed

threshold. It indicates that, Perceived Ease of Use (PEOU) acts as a determinant of a user's intention to continue with online shopping. **H2 Accepted.**

Three factors (PT, WC and SQL) did emerge from EFA. However, the results of the structural model indicate a non-significant impact of these factors on a user's intention to continue with online shopping. As a result, **H3, H4 and H5 got rejected.** The details of Hypothesis testing are shown as Table 5.

Table 5: Path Testing

Hypothesis	**CR Value**	**P Value**	**Results**
PU ⇨	6.426	0.001	ACCEPTED
WC ⇨	1.989	0.058	Rejected
PT ⇨	1.053	0.292	Rejected
SQL ⇨	-0.929	0.353	Rejected
PEOU ⇨	2.132	0.033	ACCEPTED

RESULT SUMMARY & CONCLUSION

The objective of this research work was to find out the determinants of post adoption online shopping behavior amongst Indian youth. On the basis of literature support, a conceptual model was designed. Seven factors were proposed as the determinants of a user's intention to continue with online shopping. With the help of a structured questionnaire, data from 707 respondents was collected. Out of seven determinants considered in construction, two determinants (Perceived Risk and Product Information Quality) didn't emerge from EFA. CFA confirmed the existence of five factors, emerging from EFA. The structural equation model and path analysis indicates that, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are the two determinants of behavioral intentions while three other factors namely, Perceived Trust (PT), Service Quality Factor (SQL) and Web Characteristics (WC) were found to have insignificant impact on a user's intentions to continue with online shopping. The statistically proven relationships and paths are shown as Table 6.

Table 6: Summary of all Paths proposed and Their Results

Sr. No	Hypothesis	Tests Applied	Results
1	PU BI ⇨	Reliability, Validity, EFA, CFA, SEM	**Path Accepted**
2	PEOU BI ⇨	Reliability, Validity, EFA, CFA, SEM	**Path Accepted**
3	PR BI ⇨	Reliability, EFA	Dropped due to EFA results
4	PT BI ⇨	Reliability, Validity, EFA, CFA, SEM	**Path Rejected**
5	WC BI ⇨	Reliability, Validity, EFA, CFA, SEM	**Path Rejected**
6	SQL BI ⇨	Reliability, Validity, EFA, CFA, SEM	**Path Rejected**
7	PIQ BI ⇨	Reliability, EFA	Dropped due to EFA results

The result obtained by this study partially supports the historical findings by various researchers. Validation of PU and PEOU as the determinant supports Al-maghrabi et al.(2005) , (Celik & Yılmaz, 2011) and (Lin, 2007) and (Halimi, Chavosh & Choshalyc, 2011) respectively. This underlines the need for further investigation to arrive at India centric model of online shopping adoption.

LIMITATIONS AND FURTHER SCOPE OF RESEARCH

As in case of any research in social sciences, this research work has some limitations. Since the study is based on understanding post adoption online shopping behavior amongst Indian youth, the outcomes obtained from this research may not be applicable to the other age categories or mixed age groups. Moreover, the sample was selected from selected cities of India. Naturally, the applicability of these results to a diverse country like India might not fetch appropriate results. This research integrates trust and risk elements into TAM construct. Any alternative model based on trust or risk only may fetch different results than those obtained from this research. So reinvestigation into interplay of risk, trust factors with online shopping intentions and usage of construct based on alternative models such as TPB (Theory of Planned Behavior) are some of the future research agenda.

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An Analysis of Trading Across Border Processes In India

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ABSTRACT

Customs authorities have traditionally been responsible for implementing a wide range of border management policies. The Central Board of Excise and Customs (CBEC) is the key government agency in India to overview policy planning and development of institutional infrastructure in this area. They have introduced several trade facilitation related measures in the recent past in accordance to the changing nature of border management.

Dealing with a large scope of turnover across the borders, customs authorities have a challenge of balancing the level of controls and interventions vis-à-vis the time and costs required to complete the established processes.

The primary objective of this applied research is to analyze the current trading across border processes in India. This is discussed in relevance to index score of trading across border, time taken and cost incurred to complete these activities published by World Bank every year in their 'Ease of doing business' report, comparing 190 nations. India ranked 63 in 2019 and its rank has improved drastically in the recent years from 100 in 2016; as an effect of the measures taken by Indian customs. This paper attempts to test the real life relevance between improving trading across border processes to countries trade volumes. This secondary research works towards testing the effects of these trade facilitation measures on the overall export and import volumes of India.

This research is an attempt to carry out an analytical research using a quantitative approach. Analysis of historical records is conducted using secondary data. Correlational research design has been adopted to carry out this research. Data is tested through statistical method using Statistical Package for the Social Sciences (SPSS).

Key Words: Trading Across Borders Processes, Documentary Needs, Border Compliance, Ease of Doing Business

INTRODUCTION

Every nation is attempting to boost their international trade volumes and trade facilitation is seen as the prime factor in achieving this objective. Trade facilitation is a very broad concept and includes any measure taken by the governmental bodies in line to boost the trade flow of the country. Nations are taking various measures as per the guidelines issued by World Bank, World

Trade Organization, World Customs Organization and other international bodies to increase their competitiveness.

World Bank releases 'Ease of doing business' report on yearly basis studying 10 factors across 190 nations. It gives scores and ranking to each nation based on their current performance in respective factor. In overall ranking, India is the only nation to rank among the top 10 improvers for the second consecutive year in 2019. India is taking serious efforts of improving its current processes and moving up the ladder. This paper focuses on trading across border factor of this report. In terms of trading across border ranking, India has jumped 78 ranks over the last 4 years, from 146 in 2016 to 68 in 2019.

For purposes of this study, trade facilitation can be understood as measures that directly affects the established trade processes. This research aims to look at trade facilitation in the real sense of trading across border.It is an attempt to understand, how improvement in trading across border processes; namely documentary needs and border compliance affect trade flow of a country. Firstly, to examine the effectiveness of trade facilitation in increasing trade flows. Secondly, to gain detailed understanding of the contribution of reduction in documentary needs and simplification of border processes on export/import volumes.

RESEARCH OBJECTIVE

This research is focused on achieving the following objectives.

1. To study if, an increase in trading across border score from the ease of doing business report correspondingly brings about an increase in the overall trade flows of India.
2. To analyze, will reducing the time and cost to complete the set processes of documentary needs in export and import procedures result in higher volumes of import and export from India.
3. To observe whether, cutting down time and cost required to fulfill border compliance procedures of export and import of consignment result in increasing the import and export volumes of India.

LITERATURE REVIEW

3.1 TRADE FACILITATION

Grainger (2011) defines trade facilitation as measures taken or policies made with an aim to reduce complexity and cost of international trade processes.It focuses at increasing the effectiveness of the process governing movement of goods across national borders. At its broadest, trade facilitation constitutes of any set of undertakings that has the potential of improving speed and volume of trade flows (WCO, 2017).

The extent of what constitutes of trade facilitation is far from standard. Facilitation measures can include a whole set of factors ranging from the local regulations and standards, logistics facility, border policies, port infrastructure, export/import processes and others. Basically, facilitation measures can be about any factory that can reduce the time and cost of exporting/importing a consignment (WTO, 2015).

The empirical literature on trade facilitation shows that substantial gains has been achieved across all nations/ geographical regions in bringing down the cost and time involved in the process (WTO, 2015; WTO and OECD, 2017). Adding on, cross-country studies by Calì and teVelde (2011); Helble et al. (2012) demonstrate positive effects of trade facilitation efforts on exports.

Existing Literature on this topic indicates that trade facilitation measures are most established for cutting trade costs and enhancing trade flows, Sourdin and Korinek (2011) in their study explain the seriousness of the impact of trade facilitation in terms of border procedures and logistics competence. These factors influence trade flow in a much significant manner when compared to distance between the countries or freight charges. Hufbauer et al (2010), in a study has estimated that trade facilitation reforms can result in increasing imports by $84 billion in developing countries and exports by $47 billion.

Over the period of time, trade facilitation has gained importance as an area of empirical research based on its resulting implication. Studying barriers in trade, Anderson and Van Wincoop (2004); Hummels (2007) find trade cost to be a more binding barrier to trade flow when compared to tariffs.Studying the multidimensional effects of these initiatives, Persson (2013) confirms that diversity of exported goods increase by 0.3 percent in case of homogenous goods and 0.6 percent in case of differentiated goods with 1 percent reduction in export time. Efficient trade procedures also aid in mitigating the negative efforts of global financial crises. With each additional day of delay in the time nations can face upto 0.5 percent more reduction in exports (Dennis, 2010).

3.2 WORLD BANK 'EASE OF DOING BUSINESS' REPORT

World Bank publishes the 'Ease of doing business (DB) Report' every year. This report studies 10 factors looking at diverse aspects of doing business across 190 nations. Individual scores and compared ranking is allocated to each nation based on their current status on each of the ten aspects of the report. Components of the Doing Business Report have proven to lead to consistent conclusions on positive effects of trade facilitation on trade flows (Sourdin and Korinek, 2011).

Among the 10 factors of Doing Business Report, 'Trading Across Borders' investigates and captures less directly observed trade cost and time elements of each country. This index hasthe benefit of direct coverage and comparability of facilities among nations and has been employed by various researchers working on trade facilitation (Okazaki, 2018). Iwanow and Kirkpatrick (2009) proves that 1 percent increase in the 'trading across borders' index score results in 0.20 percent rise in trade flows.

TRADING ACROSS BORDER

Trading across border index of the Doing Business report records the time and cost linked to the logistics process of importing and exporting consignments. It breaks down the overall process of importing and exporting into three parts and accounts for their respective time and cost (excluding tariffs) individually; namely; documentary needs, border compliance and domestic transport (World Bank, 2018).

This study focuses on documentary needs and border compliance. Literature shows that these less visible components of trade cost and time can have considerable effect on import and export. Moïsé and Le Bris (2013) discovered that these factors can result in increasing the overall transaction costs by 2 to 24 percent of a consignment's value. It is also identified that the both time and cost are inter-related. Time delays will invariably add on to the cost of the processes. Further, time delays cause uncertainties in inventory management and opportunity costs (Harrigan, 2010; Hummels and Schaur, 2013).

3.4 DOCUMENTRAY NEEDS

Documentary needs factor records the time and cost linked with preparing and presenting all documents required by numerous regulatory bodies at both exporting and importing country. It attempts to measure the burden of documentary compliance in completing the trade process (World Bank, 2019).

Documentary needs takes a holistic approach and covers time and cost for preparing documents, getting approvals, printing, getting them signed and stamped, presenting them to the required authority, submitting them online to respective authorities and obtaining certification from a regulatory body. It is the aggregate time and cost of completing all documentary formalities required in order to export/import a consignment. Such documentary needs can be of the based out of any law in exporting or importing country or even can be by mere trade practice. The time and cost spend on these documentary needs can be of the any stake holder involved in the process, namely; exporter, custom broker, shipping line or freight forwarder (World Bank, 2017).

Time taken for exporting or importing a cargo is positively related to the number of requirement to be completed and complexity of the procedures. One addition day taken to complete the procedures can reduce the overall export value by 1 percent (Djankov et al., 2010).

3.5 BORDER COMPLIANCE

Border compliance focuses on complying with the rules and completing the processes of the economy's customs/border regulatory bodies. All the processes that a shipment has to mandatorily undergo before it can be allowed by the respective authorities to cross the countries border. In addition, it also takes into account the time and cost for handling at the port or border. Incorporating the time and cost for inspection procedures and custom clearance conducted (World Bank, 2016).

Shepherd (2013) reported a fall of 0.07 percent in export values with 1 percent increase in border clearance time. Loses can be anticipated to be higher depending upon the buyers and products sensitivity to time. For developing nations exporting agricultural products, garments and electronics delay in time is a serious threat to overall exports value (Djankov et al. 2010; Hoekman and Shepherd 2015).

Empirical evidence suggests that, simplification of border procedures are positively correlated to trade costs reduction, resulting in growth of trade. On the contrary, trade related procedures are necessary for border protection objectives such as, national security, correct declaration of content and value, compliance with established rules and regulations, and custom duty collection (Draper, 2000). However, this has to be managed in a time and cost effective way as inefficiently administrated procedures can will not only inflate the time and cost of trade but also pose a serious threat to not fulfilling these objectives (Biljan and Trajkov, 2012).

Fernandes et al. (2015) observed drastic effects of reduction in physical inspections leading to shorter import clearance time. This resulted in 7 percent increase in overall imports value. Further, it also reduced the ambiguity in overall import clearance time, and mitigating costs attached to these uncertainties. In totality, USD 12 million was saved alone over a year by this effort.

3.6 INDIA'S CURRENT PERFORMANCE IN THIS SECTOR

Indian custom processes are lengthy and complicated. Number of restrictions is imposed on trade of goods on the basis of commodity, industry, origin country and quality. Although this is done for the safety and security of the nation, it is hampering the overall competiveness of the country (Directorate General of Foreign Trade, 2014). The longer time and higher cost of import/export procedures affect the trade negatively and are seen as potential future hurdle in rapid economic growth experienced by a country (Indian Institute of Foreign Trade & Ace Global Private Limited, 2012).

Following the widespread economic reforms, India undertook serious initiatives to improve the current processes. The Central Board of Excise and Customs (CBEC) is the primary authority under Ministry of Finance, which is leading the reform. India's rank in 'Trading Across Borders' indicator has improved from 146 out of 190 nation in 2016 (index score of 57.6 out of 100) to 68 in 2019 (index score of 82.5 out of 100)(Table 3.6). Correspondingly, India's overall trade figures grew by 31% from 2016 to 2019, while its imports showed a rapid rise of 35% and exports recorded a 26% increase (Table 3.6).

TABLE 3.6

Title: India's Trade performance statistics

Year	2019	2018	2017	2016
Trading Across borders Rank	68	80	80	146
Trading Across borders Score	82.5	77.5	58.6	57.6
Trade Value (in USD million)	844156.43	769106.40	660208.81	643298.54
Export Value (in USD million)	330078.08	303526.15	275852.42	262291.07
Import value (in USD million)	514078.35	465580.25	384356.39	381007.47

Source: Ease of doing business report by World Bank and Director General of Foreign trade reports.

3.6.1 INDIA'S PERFORMANCE ON DOCUMENTRAY NEEDS

Indian customs works on Electronic Data Interchange (EDI), named ICEGATE. This move towards complete digitalization and paperless environment in trade and custom processes has brought about a significant effect on the cost and time factors of the trade for India (World Economic Forum, 2017). Given the geographical spread of the country and the number of ports, airports and Inland container depots, 98 percent of India's import and export clearance is automated and is operated using the centralized digital platform, ICEGATE (Viswam, 2017).

TABLE 3.6.1

Title: Table showing statistics of time taken and cost incurred for completing documentary needs for export and import consignments

Year	2019	2018	2017	2016

Time to export: Documentary needs (hours)	**12**	**15**	**38**	**38**
Cost to export: Documentary needs (USD)	**58**	**78**	**92**	**92**
Time to import: Documentary needs (hours)	**20**	**30**	**61**	**61**
Cost to import: Documentary needs (USD)	**100**	**100**	**135**	**135**

Source: Ease of doing business report by World Bank

Looking at India's recent performance in export (Table 3.6.1), we can see that time taken to complete documentary needs has been cut by more than half from 38 hours in 2016 to 15 hours in 2018, it has further reduced to 12 hours in the most recent report of 2019. While, the cost to complete these activities reduced from USD 92 in 2016 to USD 78 and now stands at just USD 58 in 2019.

When compared to exports, imports procedures are noticed to be highly complex. However, drastic reductions have been witnessed in them as well. Time taken has been brought down from 61 hours in 2016 to 30 hours in 2018 and has been cut down to 20 hours in 2019. Despite all the efforts reduction in cost is not seen to be very effective. Although it has lessened from USD 135 in 2016 to USD 100 in 2019, it is still very high (Table 3.6.1).

These reductions are an effect of the continuous efforts that the regulatory bodies have been making in this area. Committees have been formed to study and suggest new reforms which are then being implemented. Single Window Interface for Facilitating Trade (SWIFT) was initiated, under which clearance from various government agencies can be obtained in advance by simple upload of documents into the portal. The main intent of this initiative was to cut the excessive time required to obtain a non-objection certificate (NOC) from related government authorities before cargo can be released by custom authorities. The effort brought about a nationwide standardization in the custom clearance process and lowered the dwell time and complexity in the system (Viswam, 2017). Online Document Exchange Platform (ODEX), an integrated platform has been established to facilitate a smooth communication channel between numerous stakeholders namely; shipping line, forwards, clearing agents, custom freight stations and custodians (Singh, 2018).

3.6.2 INDIA'S PERFORMANCE ON BORDER COMPLIANCE

Indian customs digital platform is supported by Risk Management System (RMS). In RMS, cargo is categorized into low/medium/high risk cargo by the system and it gives out orders to clear the shipment with or without assessment and/or inspection on the basis of risk ascertained (Central Board of Excise and Customs, 2015). However, customs has to exercise strict caution in clearing cargo without any physical inspections, as apart from compliance with rules and regulations, border protection and national security is a matter of concern.

TABLE 3.6.2

Title: Table showing statistics of time taken and cost incurred for completing border compliance for export and import consignments

Year	**2019**	**2018**	**2017**	**2016**

Time to export: Border compliance (hours)	**52**	**66**	**106**	**106**
Cost to export: Border compliance (USD)	**212**	**252**	**382**	**413**
Time to import: Border compliance (hours)	**65**	**97**	**265**	**283**
Cost to import: Border compliance (USD)	**266**	**331**	**543**	**574**

Source: Ease of doing business report by World Bank

When compared to documentary needs, time and cost of border compliance are significantly high indicating the complexity in the prevailing processes. Over the period, time taken to complete export border compliance has been cut from 106 hours in 2016 to 66 in 2018 and then to 52 hours in 2019. Cost for completing these processes has been brought down progressively year after year, from USD 413 in 2016 to 328 in 2017; and thereon from USD 252 in 2018 to USD 212 in 2019 (Table 3.6.2).

Import processes took a lot more time in 2016, 283 hours which was extremely high. With regular and drastic efforts in this area by the regulatory authorities this now stands at only 65 hours in 2019. Corresponding cost were as high as USD 574 in 2016 which has significantly cut to be at USD 331 in 2018 and recently was USD 266 in 2019 (Table 3.6.2).

To support RMS and facilitate the trade in real sense, the concept of Post Clearance Audit (PCA) was introduced. In this process, cargo is cleared based on RMS without inspection while audit of documents/goods is carried out at a later stage in importers/ exporters premises (Customs and Central Excise, 2015). This process of not carrying out the all the formalities before clearing the cargo has reduced the dwell time. Adding to this, is the recently introduced concept of Direct Port Delivery (DPD) which has opened avenues for shortening the lead time and also lowering the overall costs of importing cargo into India (Rambade, 2017). Similarly, Indian customs have been heavily promoting 24X7 clearances which have brought about the drastic reduction in time taken and cost to complete the processes (Sabnavis, 2017).

RESEARCH METHODOLOGY

This research is an attempt to carry out an analytical research using a quantitative approach. Analysis of historical records is conducted using secondary data. Correlational research design has been adopted to carry out this research.

Extensive literature review is carried out to understand the concepts and identify independent and dependent variables for this study. The research aims to discover and measure correlations among the variables. Post listing out the research objectives, hypotheses were formulated to carry out the research.

Purposive sampling method has been used to select the sample set. To keep the research relevant to the current time period, sample set consists of data from last four years, from 2016 to 2019.

Secondary data on trade, export and import volumes used in the study are published by Director General of Foreign trade (DGFT), prime authority in Indian government in this field. Data relating to trading across border, time and cost factors of documentary needs and border compliance are obtained from World Bank's yearly reports.

The collected data has been tabulated and tested through statistical method using Statistical Package for the Social Sciences (SPSS). Person linear correlation was used to validate the relationship between the variables and conclusions were drawn based on the results.

RESEARCH HYPOTHESIS

Reviewing existing literature on this subject and in line with objectives of the research, below hypothesis has been formulated.

First,

H0: There is no correlation between trading across border score and trade volumes of India

H1: Trading across border score and trade volumes of India are positively correlated

Second,

H0: Reduction in time taken and cost incurred in completing documentary needs will have no effect on export and import volumes of India

H1: Reduction in time taken and cost incurred in completing documentary needs will increase export and import volumes of India

Third,

H0: Reduction in time taken and cost incurred in completing border compliance will have no effect on export and import volumes of India

H1: Reduction in time taken and cost incurred in completing border compliance will increase export and import volumes of India

DATA ANALYSIS AND INTERPRETATION

ANALYSIS OF TRADING ACROSS BORDER SCORE AND TRADE VOLUMES OF INDIA

To understand the relation between trade volumes and trading across border score a pearson correlation analysis was carried out. From table 6.1, results suggest that there exists a strong positive correlation between trade volumes and trading across border score, as the correlation coefficient is 0.985. Since the P value is 0.015 which is less than 0.05, it can be said that this positive correlation between trade volumes and trading across border score is proven to be statistically significant.

Basically, an increase in the trading cross border score has proven to increase trade volumes of India. Therefore, our null hypothesis H0: There is no correlation between trading across border score and trade volumes of India is rejected and alternate hypothesis H1: Trading across border score and trade volumes of India are positively correlated is accepted.

TABLE 6.1

Title: Test result showing correlation between trading across border score and trade volumes

Correlations		**Trading Across Border Score**
Trade Volumes	**Pearson Correlation**	**.985***
	Sig. (2-tailed)	**.015**

	N	**4**
***. Correlation is significant at the 0.05 level (2-tailed).**		

6.2 ANALYSIS OF DOCUMENTARY NEEDS AND TRADE VOLUMES OF INDIA

6.2.1 ANLYSIS OF EXPORT PROCEDURES AND EXPORT VOLUMES

Correlation analysis between time taken and cost incurred to complete documentary needs for an export shipment and export volumes of India suggests that, both the variables of time and cost have a very strong correlation with export volumes. The negative sign suggest that variables are inversely correlated. Correlation coefficient for time taken to complete documentary needs and export volumes is -0.942 but that data shows that the results are not significant as the p value is 0.058. Whereas, correlation coefficient for cost incurred to complete documentary needs for export shipment to corresponding export value of India is -0.971 and it significant at 0.05 level (p-value, 0.029) (Table 6.2.1).

TABLE6.2.1

Title: Test result showing correlation between export volumes, time taken to complete documentary needs and related cost for export consignments.

Correlations		**Time Taken For Documentary Needs For Exports**	**Cost Incurred For Documentary Needs For Exports**
Export Volumes	**Pearson Correlation**	**-.942**	**-.971***
	Sig. (2-tailed)	**.058**	**.029**
	N	**4**	**4**
***. Correlation is significant at the 0.05 level (2-tailed).**			

6.2.2 ANLYSIS OF IMPORT PROCEDURES AND IMPORT VOLUMES

Similarly, correlation analysis of time taken and cost incurred to complete documentary needs for import consignments to overall Import volumes of India indicates a strong negative correlation. Correlation coefficient of correlation between time taken and import volumes is -0.993 and is significant at the level 0.01. Whereas, correlation coefficient of cost to complete documentary needs and import values is -.952, significant at 0.048 (Table 6.2.2).

TABLE6.2.2

Title: Test result showing correlation between Import volumes, time taken to complete documentary needs and related cost for import consignments.

Correlations	**Time Taken For Documentary Needs For Imports**	**Cost Incurred For Documentary Needs For Imports**

Import Volumes	**Pearson Correlation**	**-.993****	**-.952***
	Sig. (2-tailed)	**.007**	**.048**
	N	**4**	**4**
****. Correlation is significant at the 0.01 level (2-tailed).** ***. Correlation is significant at the 0.05 level (2-tailed).**			

In conclusion, it can be said that time taken and cost incurred to complete establish processes of documentary needs and export/import volumesare strongly inversely correlated and is significantly proven. A decrease in time and cost factors has resulted in the increase in export/import volumes of India. Hence, it can be stated that null hypothesis H0: Reduction in time taken and cost incurred in completing documentary needs will have no effect on export/import volumes of India is rejected and alternate hypothesis H1: Reduction in time taken and cost incurred in completing documentary needs will increase export/import volumes of India is accepted.

ANALYSIS OF BORDER COMPLIANCE AND TRADE VOLUMES OF INDIA

6.3.1 ANLYSIS OF EXPORT PROCEDURES AND EXPORT VOLUMES

Time taken to obtain border compliance for export consignments and export volumes have a high negative correlation of -0.969 and is significantly proven as p value is 0.031. It suggests the decrease in time taken to fulfill border compliance has increased the country's export volumes. Cost for completing this process is also inversely correlated to export volumes at -0.978 and is significant at the 0.05 level (Table 6.3.1).

TABLE 6.3.1

Title: Test result showing correlation between export volumes, time taken to complete border compliance and related cost for export consignments.

Correlations		**Time Taken For Border Compliance For Exports**	**Cost Incurred For Border Compliance For Exports**
Export Volumes	**Pearson Correlation**	**-.969***	**-.978***
	Sig. (2-tailed)	**.031**	**.022**
	N	**4**	**4**
***. Correlation is significant at the 0.05 level (2-tailed).**			

6.3.2 ANLYSIS OF IMPORT PROCEDURES AND IMPORT VOLUMES

From table 6.3.2, Pearson correlation coefficient of -0.980 suggest that time required to obtain border compliance and import volumesare strongly correlated and decrease in the prior will lead

to a rise in the latter. The significance of this correlation is proven to be 0.020. Likewise, the test results of correlation between cost of conducting this activity and import volumes are also negatively correlated at -0.989 and this has been proven with the significance level of 0.05 (p-value 0.011).

TABLE 6.3.2

Title: Test result showing correlation between import volumes, time taken to complete border compliance and related cost for import consignments.

Correlations		**Time Taken For Border Compliance For Imports**	**Cost Incurred For Border Compliance For Imports**
Import Volumes	**Pearson Correlation**	**-.980***	**-.989***
	Sig. (2-tailed)	**.020**	**.011**
	N	**4**	**4**
***. Correlation is significant at the 0.05 level (2-tailed).**			

Hence it can be concluded that, time taken and cost involved in completing the set processes of border compliance have a very strong negative correlation with export/import volumes. Reduction in these variables has led to the rise of export/import volumes for India. Therefore, null hypothesis H0: Reduction in time taken and cost incurred in completing border compliance will have no effect on export/import volumes of India is rejected and alternate hypothesis H1: Reduction in time taken and cost incurred in completing border compliance will increase export/import volumes of India is accepted.

FINDINGS AND RECOMMENDATIONS

7.1 FINDINGS

1. Increasing the efficiency of trading across border processes in India has resulted in higher trade volumes for the country. With simpler and cost effective border clearance process trade is facilitated and countries trade volumes have risen.

2. Export of the country boosted when time taken and cost to complete documentary needs of border clearance process was reduced. India's exports increased drastically with reduced time and cost of completing documentation to obtain border clearance.

3. Import volumes have showed a growth with cutting down the cost and time to fulfill documentary needs of border clearance. Reduction in time and cost to complete this process has brought an improvement in the import volumes of India.

4. Simplification of border compliance rules and regulations has resulted in reduced of time and cost required to complete the process. This has seen to be contributing factor in India's increased exports volumes.

5. Time and cost required to complete border processes for import shipments are very high in India. With great efforts they have been reduced which has boosted the import volumes of the country.

7.2 RECOMMENDATIONS

1. With several efforts and technological developments India has simplified its existing border clearance process to a great extent. Yet, there is a lot of scope for improvement and India should continue its efforts on this path. With more effective border clearance processes much high trade volumes can be achieved.
2. India's imports volumes are still much higher than its exports volumes. Country has to work towards boosting its export volumes.
3. With the use of new and online technologies time taken to complete documentary needs has been reduced by far but the high costs are still seen as a hurdle in the effectiveness of the processes. Specially, import processes cost needs to be brought down significantly. A lot of work is needed in this area.
4. In spite of the serious efforts, countries border compliance processes cost is still very high. Imports are suffering heavily due to this burden. More efforts are to be focused towards lowering these costs.
5. Overall, India is still very behind in terms of efficiency and effectiveness of its current border processes monitoring the international trade when compared to several developed nations. Modernization of the processes and building supporting infrastructure will help the country move up the ladder.

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A Study of Fourth Industry Revolution (Industry 4.0) and Challenges of Manufacturing Industries to adopt Industry 4.0

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Abstract

The objective of this paper is to study the progress of the Fourth Industrial Revolution (Industry 4.0) in the Indian manufacturing industries and what are the important challenges arising in progress with relevance of Industry 4.0. Also this paper is one of the initial attempts to draw the attention towards the overall challenges of the management in industry 4.0, as most of the recent studies are discussing the technological shift and change in manufacturing processes considerably. This paper also recommends empirical and qualitative investigation on core challenges of the management in implementing necessary changes at the initial stage. It is done by integrating the existing literature with the logical beliefs.

Overview

The global manufacturing is going through a deep digital transformation in the form of Fourth Industrial Revolution. The growing capability of artificial intelligence and big data represent in the Industry 4.0 era. The World Economic Forum in Davos has outlined that the Fourth Industrial Revolution has the most exciting and promising technological innovations in the manufacturing fields which includes Robotics, Nanotechnology, Machine Learning, 3D printing and most importantly Artificial Intelligence. Through the advancement and diffusion of digital technologies the manufacturing business is facing a challenge to its existing values and ideas radically. This is an implication of "paradigm shift" in the manufacturing business. In the Fourth Industrial Revolution the business has to operate in an environment of ambiguity, which make decision making risky and if challenge take place the ability revisit decisions and modify them is imperative to cut down the losses and reorient the business. To remain in the business and to be competitive in the market place it's imperative for the manufacturing industries to adopt the changes in line with fourth industrial revolution by overcoming challenges.

Indian manufacturing industry are not fully geared up in the digitalization journey few industries have started implementation and few are still in the wait and watch mode. In short we are in the first phase of Industry 4.0. The speed of responses is critical. How quick you are to sense and

respond proactively is key factor, variables such as Technology, Innovation, and Entrepreneurial ingenuity are fast reshaping the business scenario. The objective of this paper will focus in the context of Industry 4.0 and what are the challenges ahead for the manufacturing industries in India while entering into fourth industrial revolution.

Research Questions

RQ1: What are the challenges facing by the manufacturing industries to adopt Fourth Industrial Revolution (Industry 4.0)

Significance of Study

The purpose of this paper is to provide a comprehensive understanding of the Industry 4.0 concept, with the aim of investigating the challenges, issues, and progress of Industry 4.0 implementation.

The fourth revolution is heavily based on the integration of physical, digital and biological structures, especially the Internet and the industrial value chain (Hermann, Pentek, & Otto, 2016), with significant impacts on people, businesses and governments (Schwab, 2015). Industry 4.0 is also seen as closely related to advances in AI (Lee, Davari, Singh, & Pandhare, 2018), what makes us confident that great opportunities exist for research on the confluence of intelligent technologies, the development of human skills, and new organizational configurations, routines and expected outcomes.

Research design

The research described in this paper has basically been carried out through various types of literature review considering the electronic databases including scientific papers, journals, articles, magazines, newspapers and consultants' reports. Throughout the development of this paper, the main purpose is to understand the scope of Industry 4.0 definitions and challenges of manufacturing industries at the initial phase. The methodology enabled to achieve an overall understanding of the field and current developments and practices described in multiple studies.

Fourth Industrial Revolution (Industry 4.0)

The Industry 4.0 term was coined by the German federal government in the context of its High-tech strategy in 2011. It describes the integration of all value-adding business divisions and of the entire value added chain with the aid of digitalization. In the "factory of the future", information and communication technology and automation technology are fully integrated. All subsystems, including R&D as well as sales partners, suppliers, original equipment manufacturers and customers, are networked and consolidated. In other words: all relevant requirements concerning manufacturing and production capacity are already confirmed during product development. The entire process can be holistically considered and managed in real time from the very first step, including seamless quality assurance in production. (KPMG, 2016) According to KPMG (2016), networking and transparency in manufacturing provide for a paradigm shift from "centralized" to

"local" production. The industries witnessing profound shifts across all industries, marked by the emergency of new business module (Marolt, Lenart, Meletic, Kljajic B., & Pucihar, 2016)

The manufacturing industries have experienced three main revolutionary phases and shown significant changes in their workings and dealing one after another.

18th Century : Industry 1.0
with steam power from the agrarian to the industry society

19th Century : Industry 2.0
Using electric power for assembly line and mass production

20th Century : Industry 3.0
Computerisation of production

21st Century : Industry 4.0
Intelligent networking of humans, machines and products

The First Industrial Revolution was the Steam Revolution during 1760-1840, a form of manual production to the use of steam-powered engines and water as a source of power. **Second Industrial Revolution** was the Electrical Revolution during 1870-1914 in this era the electrification of factories contributed hugely to production. **Third Industrial Revolution** was the Electronics revolution during 1950-1970 which was the revolution of IT and ITes industry growth and establishments and the **Fourth Industrial Revolution** is the current revolution having conceptual frame work that includes rising technologies such as Internet of Things (IOT), Artificial Intelligence (AI), Big Data, Robotics, 3D printing. Machines will be flawlessly connected to each other in a factory to manufacture goods, converse with each other for anticipating problems before they arise and devise solutions without human interference.

The Term Industry 4.0 has been defined by various scholars and consultants as summarized below in their own way, however the gist of the definition lies within the fourth revolution and digitalization in manufacturing process which is the important revolutionary phase for the industries.

i. The term Industry 4.0 stands for the fourth industrial revolution and is best understood as a new level of organization and control over the entire value chain of the life cycle of products, it is geared towards increasingly individualized customer requirements (Koch et al. (2014))

ii. According to MacDougall, 2014 Industry 4.0 or Smart industry refers to the technological evolution from embedded systems to cyber-physical systems. It connects embedded system production technologies and smart production processes to pave the way to a new technological age which will radically transform industry and production value chains and business models.

iii. Industry 4.0 is the sum of all disruptive innovations derived and implemented in a value chain to address the trends of digitalization, automization, transparency, mobility, modularization, network collaboration and socializing of products and processes (Pfohl et al. 2015)

iv. The fourth industrial revolution, focuses on the end-to-end digitization of all physical assets and integration into digital ecosystems with value chain partners (Geissbauer et al. 2016)

Challenges of Manufacturing Industries in adopting Fourth Industrial Revolution

The Industry 4.0 concept (fourth industrial revolution) has become an increasingly important issue, being discussed by academics, consultants and companies. However, despite the increasing interest in the Industry 4.0 topic, it is still a non-consensual concept. There are still some vague ideas about this new manufacturing paradigm, regarding its implications and consequences. Also, most companies and factories are not aware of the challenges they may face when they want to implement the Industry 4.0 background (Mohamed, M. 2018) . Nevertheless, it has been assumed that there is still a misunderstanding in Industry 4.0 about this topic, especially about what involves Industry 4.0 and its meaning and vision. This new production system allows companies to take actions to prepare for this change, defining the most suitable manufacturing model and planning the target roadmaps in order to address the new industrial paradigm's challenges (MacDougall, 2014).

The modern manufacturing systems must be flexible/agile, reactive, integrated and cost-effective simultaneously to enable industrial companies to stay competitive in an international competition. To develop and run such complex systems, manufacturing enterprises need to design and engineer their production processes appropriately and in a systematic way following structured approaches based on sound principles and supported by efficient tools and methods (Schelechtendal et al., 2015).

The Management and Government Vision and Industry 4.0

The management vision towards digitalization and stay ahead in the competition and implementation of Industry 4.0 is the first step to enter in to the fourth Industrial Revolution. The Companies are far from ready for the great leap towards full automation. This is a gradual process. Companies first want to prepare their internal operations and consider automation the next logical step.

The companies first need to develop their internal organisation and encounter the first problem here. What does it actually mean? When is my company ready for further or full automation? We cannot forget that automation through robots and cobots has existed for years. This automation was mainly used in mass production, which no longer exists in that capacity. (Meurechy, De 2018)

The greatest challenge is collecting the right data, evaluating it correctly, and using it to reach unquestionable, rational decisions.

The Government vision is equally important to boost the fourth industrial revolution, however the challenge lies here with unclear message and program from the government. The report, commissioned by the Economic Advisory Council (EAC) to the Prime Minister, analyzed employment data from three surveys of the National Sample Survey Organization and found that since 2012, the organized sector in India has been increasingly hiring casual (or non-contractual) workers. Furthermore, the report found that the rate of employment growth (0.8 percent) has been nearly half the rate of population growth (1.7 percent) over the same period. (Bhandari, L. Dubey, A, 2019)

Business Environment and VUCA world

VUCA stands for Volatility, Uncertainty, Complexity and Ambiguity.

Economic Environment marked by high degree of uncertainty "what will happen is uncertain" and business is thus operating not on sound footing, but shifting gears. In this ability to adapt and sensitivity are important if the organisation is to be able to respond to the changes. A digital revolution can pole vault India's economy and development. Globally organizations experiencing VUCA in their respective businesses in terms of product costings, market demand and thereby pressure on overall business operations. In addition to the VUCA environment the industries are required to prepared for Industry 4.0 challenge.

As per World Economic Forum Report, 2016 he Fourth Industrial Revolution, combined with other socio-economic and demographic changes, will transform labour markets in the next five years, leading to a net loss of over 5 million jobs in 15 major developed and emerging economies. (WEF, 2016) in view of the VUCA world many organizations are on wait and watch mode on the fourth industrial revolution.

Required skill Set and Industry 4.0

We are living on the threshold of the next production revolution. Ongoing transformations in industry and production activities are unprecedented in terms of their scale and impact. Emerging technological developments are likely to bring widespread automation and irreversible shifts in the structure of jobs, raising major challenges on labor markets and for policymakers responsible for promoting the necessary skills and employment. (Kergroach, S. 2017)

To prepare for the future, various forward-looking groups operating at the international, national, and organizational levels have offered suggestions on the types of skills required to stay ahead of the game. For example, the Future of Jobs report has listed complex problem solving, critical thinking, creativity, people management, and coordinating with others among the top ten skills in 2020 (World Economic Forum, 2016). Given the disruptive nature of digital technologies, how should senior human resources practitioners manage organizational capabilities and develop talents to be equipped with future skills? Besides simply achieving productivity gains and value-adding, the ultimate goal must be to enable professionals, managers, and executives to develop the skills that create value through innovations. (Hoe, S.L., 2017)

In terms of work and workplaces there are a number of distinguishing features of the predictions associated with the Fourth Industrial Revolution (4IR). The first is the change in the composition and skillsets of the workforce. There will not only be labor displacement, but there will also be a shift towards new and different jobs and toward new skillsets. The challenge for governments will be dealing with labor displacement and labor reskilling. The second change is the very nature of work and workplaces.

Destructive Labour Market and Industry 4.0

Labor and technology have long nurtured a close and mutually beneficial relationship [Keynes, 1930]. While technological change has helped improve labor productivity and has been therefore translated at the firm- and macro-levels into economic growth and job creation, new technologies have substituted labor in many industries and occupations, displacing jobs across sectors, regions, or trades. Capitalization effects have benefited the sectors and enterprises in transition, as well as related sectors and partner firms that have captured positive spill-overs through pervasive supply chains. However, at the same time, destructive effects have disproportionately hit industries, territories, and populations that demonstrated a deficit of skills or lag behind the digital transition.

Looking at the present Skill and Age factor of the operating workforce in the manufacturing industries and the required skill set for the Fourth Industrial Revolution there is huge gap. Therefore the organizations are sensitizing turbulences in handling skill gap and transformation of workforce in view of rigid labour laws and Labour Union resistance.

Subsequently managing workforce during the initial phase of fourth industrial revolution would be a key challenge for the organization. Economic Environment marked by high degree of unpredictability – what will happen is uncertain and business is thus operating not on sound footing, but shifting sands. In this ability to adapt and sensitivity are important if the organisation is to be able to respond to the changes.

Decision on Make or Buy model of manufacturing

In the present revolutionary phase the make-or-buy question has always been a concern of complex nature which represents a fundamental dilemma faced by many companies. The cut-throat competition compels all the manufacturing and services companies to re-evaluate their existing processes, technologies, products and services in order to find an opportunity to positively impact the bottom line by making strategically-drawn out make-or-buy decisions. The make-or-buy decision is the act of making a strategic choice between producing an item internally (in-house) or buying it externally (from an outside vendor) (Katikar, S., Pawar M., 2012)

One of the major challenge industries facing to take decision on Make or Buy Model of manufacturing operations. Many organization are adopting for buy model. Buy model is nothing but outsourcing entire manufacturing.

In the phase of fourth industrial revolution decision making on Make or Buy model will be a challenging task for industries as it will add one more decision point.

Challenges of Human Resource Planning in Fourth Revolution

In the Fourth Industrial Revolution, Human Resource Planning has become an integral part of strategic planning of the Organization The adoption of Industry 4.0 will have a profound impact on the manufacturing workforce. Organizations should start planning the transition today (KPMG report, 2017). HRP provides inputs in strategy formulation process in terms of deciding whether the organization has got the right kind of human resources to carry out the given strategy. HRP is also necessary during the implementation in the form of deciding to make resource allocation decisions related to organization structure, process and human resources. IT is seen that HRP play as significant role as strategic planning and HR issues are perceived as inherent in business management. The fourth industrial revolution is considered by many to be the most important societal and economic trend in the world—one that will fundamentally change the nature of work, business, and society in the coming decades (Arntz, Gregory, & Zierahn, 2016; Brynjolfsson & McAfee, 2014; Ford, 2015; Frey & Osborne, 2013). These changes might lead to the elimination of thousands of jobs and the disappearance or fundamental change of many current occupations. At the same time, new occupations, new industries, and fundamentally new ways of work will likely emerge (Brynjolfsson & McAfee, 2014). It seems clear that digitization and automation might therefore be one of the most important challenging issues to shape the future career development and Human Resource Planning in the era of Fourth Industrial Revolution (Industry 4.0)

Conclusion

After going through literature review on research material, articles, news, bulletin and business conference conversations there will be a challenging face for the manufacturing industries to enter in to the fourth Industrial Revolution (Industry 4.0) and the Organizations first step is important to take a leap in the process. Challenges of Vision and other related issues are happen to come, however the best strategy of the management will help organizations to overcome challenges to have sustainable and long standing future for the organistion. Challenges summarize above i.e. Vision, Skill, Labour issue, Business model or Manpower Planning are certainly achievable, however structured implementation program has the key factor.

This paper offers direction for future research on management practices to identify challenge and strategy to overcome in the context of industry 4.0. Empirical and quantitative research in the future can validate the arguments made in this study based on the integration of literature and logics.

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To study effectiveness of Blended learning method in learning among Management, Information Technology and Commerce Students using Factor Analysis

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Research paper

Education is an important determinant for economic welfare of any nation. An economy growth over time, to innovate, to produce and for the growth of income requires a strong support of quality education provided to the major share of population in an economy. Intellectual and skills capital are important in a modern economy and educational institutions plays a central role in the development of valuable skills through quality education.

The foundation of new knowledge, the latest discoveries, new knowledge, entrepreneurship and innovation that trigger growth and prosperity of the individual as well as that of a nation depends upon good quality education.

Through channelizing education with technology, it has become one of the means of obtaining quality education. It renders better teaching and learning process in which students would be equipped with better understanding their skills and talents. These will help the students to better harass their resources towards their skills making with achieve proper personality development among them. It can be achieved through an appropriate blend of their way of apprehending the knowledge and the way of teaching process.

Historically, teaching comprised of range of activities including face to face presentations, visual materials, paper based assessment, research and group activities etc. Now with recent perpetration of technology Web 2.0 and applications in mobile have opened the opportunities of learning for students in every facet of knowledge. The plethora of technological opportunities has widened the scope of exploration of knowledge for students.

With an appropriate blend of technology quotient, the feature of traditional classrooms can be achieved for better results and value addition. The blended learning concept is the incorporation of technology in significant quotient keeping in view the merits of traditional teaching.

Blended Learning is the teaching practice that combines methods of traditional and online learning. It is an established and rapidly growing instructional model that providing highly effective solution

to teaching and learning objectives. It will help in achieving the expectations of 21st century learners.

It can be implemented in variety of modes from curriculum completely online to modes combining the intricacies of traditional instruction with integration of online components that helps to explore learning beyond the classroom.

Students in digital generation expect their learning environment to include technology and more technology because it is an intrinsic part of their lives.

The features supporting Blending Learning are as follows: -

- **Students can control of their own learning**

Through blended learning it would be easier for students to choose their convenient way of learning in according to their way of understanding the concepts, process or content of knowledge. It would facilitate the learning environment which can lead better understanding of learning material and also helps them evaluate learning objectives for better success.

The plethora of learning opportunities in blended learning will help them choose their style of learning and harassing through resources better skills and aptitude. The technology will students update with new and current set of resources of learning.

- **It helps in achieving learning objectives**

Online learning helps students benefit by putting them in control of their own learning. It can also be viewed as a pedagogical approach that combines the effectiveness of learning opportunities through technologically enhanced learning process. It helps in differentiating instructions from student to student across distinctive group of learners. It enhances the socialization opportunities of the classroom.

Objectives of the study: -

1. To study importance of blended learning method in learning for students among Management, Information Technology and Commerce Students.

Hypothesis of the study: -

H0: - There is no significant importance of blended learning processes in learning for students among Management, Information Technology and Commerce Students under graduation level.
Ha: - There is a significant importance of blended learning processes in learning for students among Management, Information Technology and Commerce Students under graduation level.

Review of Literature: -

Quality in education with blended learning has been widely discussed issue all over the globe. Many journals, Articles, research papers, University rating agencies have contributed to this topic. Some the contribution as a part of review of literature is given below: -

1	Roadmap for Educational Innovation in Institutions of Higher Learning with Inter-University Centre for Innovation by Prof. Anil k. Gupta,	The research paper discussed about technology & social media can create quality in classroom
2	A Study of Influential Factor on Quality of Education By Mohammed Abaalkhail & Zahir Irani, International Journal of Humanities & Applied Science (IJHAS) Vol. 1, No.3, 2012 ISSN2277-4386.	The paper investigates in general the major and minor very influential factors on quality of education
3	International Initiatives in Assessment of quality & accreditation in higher education Research India Publication, ISSN 2249-3093 volume-3.	The research discussed about various quality indicators prevailing all around the world.
4	A Study on teachers' perceptions of and their satisfaction with interaction type in blended learning environments by Brian R. Schroder, Andrew E. Walker and Belland, Kerstin E. Pages 360-381, Lifelong Learning, Jackson State University Published online on 20 Oct 2014	Blended learning is an approach that combines technology-based learning. With face-to-face interactions, within their article, the blended learning model approach structure is described in a classroom.

Research Methodology: -

Primary Data Sources: - Questionnaire devised for students among Management, Information Technology and Commerce Students under graduation level from different colleges.

SPSS Software used: - **Factor Analysis**

Secondary Data Sources: - Research papers, Journals, Reports, webliography links

Sampling: - Stratified Probability Sampling Method

Sample: - 60 respondents

Data Interpretation and Data Analysis: -

1. **Smartphone is most common, almost 100%, PDA is not used by any student.**

		Count	Column N %
Which of the following devices you use?	Cell or digital phone	13	21.7%
	Laptop	32	53.3%
	PDA	0	0.0%
	Personal Desktop	25	41.7%
	Smart phone	59	98.3%

	Total	60	100.0%

Factor Analysis

Factor analysis (FA) attempts to identify the variables, of factors which affect the effectiveness of blended learning in learning.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.630**
Bartlett's Test of Sphericity	Approx. Chi-Square	172.181
	df	45
	Sig.	**.000**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy value is greater than 0.5 so it indicates the sample is adequate for factor analysis.
Since significant value is less than 0.05 it indicates that the factor analysis is correct technique for reducing the large no of attributes into small no of factors.

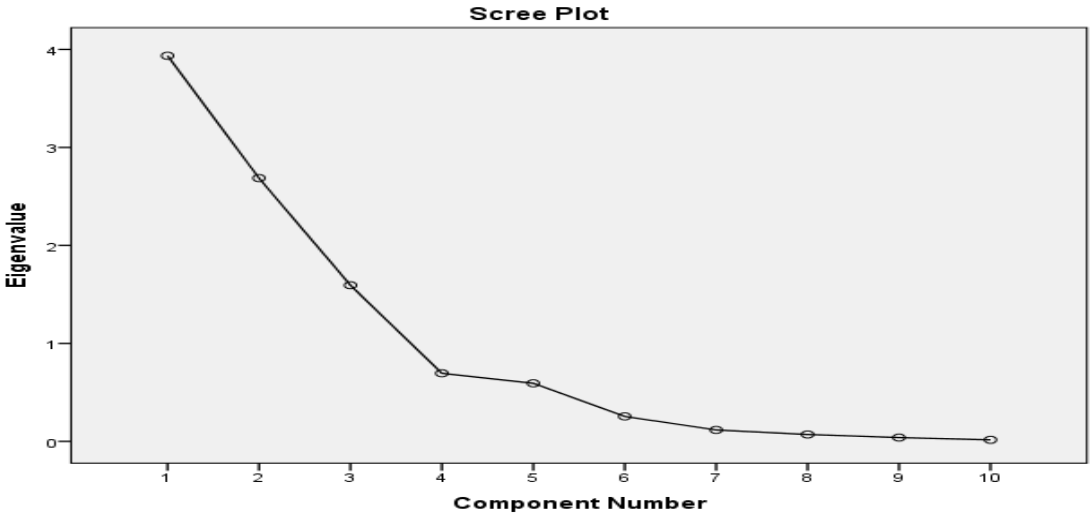
Communalities		
	Initial	Extraction
Learning retention	1.000	.941
Understanding of concepts	1.000	.969
Better Communication	1.000	.941
Practice and reinforcement	1.000	.825
Focus on real examples	1.000	.871
Interest in the subject	1.000	.705
Skill upgradation	1.000	.617
Quality of interaction with the instructor	1.000	.569
Personal devices help with my learning	1.000	.818
Quality learning	1.000	.960
Extraction Method: Principal Component Analysis.		

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.935	39.353	39.353	3.935	39.353	39.353	3.901	39.014	39.014
2	2.687	26.867	66.219	2.687	26.867	66.219	2.496	24.960	63.974
3	1.593	15.934	82.154	1.593	15.934	82.154	1.818	18.179	**82.154**
4	.695	6.951	89.104						
5	.593	5.928	95.032						
6	.255	2.546	97.577						
7	.117	1.166	98.744						
8	.071	.707	99.451						
9	.039	.389	99.839						
10	.016	.161	100.000						

Extraction Method: Principal Component Analysis.

Analysis: - The cumulative percentage is appropriate no of factors generated are 3 with a value 82.154 so the total variance can be explained by three factors



Rotated Component Matrix[a]			
	Component		
	1	2	3
Quality learning	**.974**	.067	.085
Learning retention	**.969**	-.054	.011
Understanding of concepts	**.961**	.182	.106
Better Communication	**.960**	-.137	-.007
Focus on real examples	.105	**.911**	-.176
Practice and reinforcement	-.187	**.889**	-.007
Quality of interaction with the instructor	-.257	**-.645**	-.295
Interest in the subject	.070	.101	**.830**
Skill upgradation	.100	-.125	**.769**
Personal devices help with my learning	-.205	.612	**.633**
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a]			
a. Rotation converged in 4 iterations.			

F1 factors	**F2 factors**	**F3 factors**
Quality learning	**Focus on real examples**	**Interest in the subject**
Learning retention	**Practice and reinforcement**	**Skill upgradation**
Understanding of concepts	**Quality of interaction with the instructor**	**Personal devices help with my learning**
Better Communication		

Component Transformation Matrix			
Component	1	2	3
1	.990	.052	.129
2	-.101	.905	.412
3	-.095	-.421	.902
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			

Component Score Coefficient Matrix			
	Component		
	1	2	3
Learning retention	.250	-.019	-.024
Understanding of concepts	.246	.069	.008
Better Communication	.248	-.053	-.026
Practice and reinforcement	-.044	.371	-.084
Focus on real examples	.037	.398	-.195
Interest in the subject	-.012	-.039	.468
Skill upgradation	-.003	-.127	.453
Quality of interaction with the instructor	-.058	-.242	-.098
Personal devices help with my learning	-.074	.193	.314
Quality learning	.249	.024	.007
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			

After Extraction, fixed no of factors into two

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.935	39.353	39.353	3.935	39.353	39.353	3.919	39.188	39.188
2	2.687	26.867	66.219	2.687	26.867	66.219	2.703	27.032	**66.219**
3	1.593	15.934	82.154						
4	.695	6.951	89.104						
5	.593	5.928	95.032						
6	.255	2.546	97.577						
7	.117	1.166	98.744						
8	.071	.707	99.451						
9	.039	.389	99.839						
10	.016	.161	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]	
	Component

	1	2
Quality learning	**.973**	.110
Learning retention	**.968**	-.031
Better Communication	**.962**	-.115
Understanding of concepts	**.956**	.223
Personal devices help with my learning	-.185	**.820**
Practice and reinforcement	-.233	**.799**
Focus on real examples	.043	**.751**
Quality of interaction with the instructor	-.246	**-.713**
Interest in the subject	.131	**.444**
Skill upgradation	.168	**.214**
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.[a]		
a. Rotation converged in 3 iterations.		

F1factors	**F2 factors**
Quality learning	Personal devices help with my learning
Learning retention	Practice and reinforcement
Better Communication	Focus on real examples
Understanding of concepts	Quality of interaction with the instructor
	Interest in the subject
	Skill upgradation

Reliability of data

Case Processing Summary			
		N	%
Cases	Valid	60	100.0
	Excluded[a]	0	.0
	Total	60	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
.615	10

Item Statistics			
	Mean	Std. Deviation	N
Learning retention	3.10	1.804	60
Understanding of concepts	2.80	1.508	60
Better Communication	3.00	1.622	60

Practice and reinforcement	2.85	1.899	60
Focus on real examples	3.00	1.522	60
Interest in the subject	2.35	1.309	60
Skill upgradation	2.75	1.446	60
Quality of interaction with the instructor	3.35	1.461	60
Personal devices help with my learning	2.30	1.129	60
Quality learning	2.65	1.496	60

Interpretation: -

1. After the extraction of fixed two factors, F1 factors do not change.
2. F1 factors are considered as important elements considered by students for understanding effectiveness of blended learning method in learning.
3. F1 factors are Quality learning, learning retention, Better Communication and Understanding of concepts.

Recommendations and Suggestions: -

- As Blended Learning is a novel interactive concept, its awareness requires immense important and action taken to create awareness
- It would an innovation which would radically change the traditional pedagogy for prospective future technological change happening
- Students would benefit immensely with the integration of Blended Learning as it would help them learn and grasp effectively
- Challenges of traditional pedagogy can be minimized or reduced through Blended learning incorporation
- With incorporation of Blended learning, technology quotient required to be addressed can be adapted as accordance to changing technological environment
- It would enhance the process of teaching pedagogy for teachers
- It would minimize the time and location challenges in today's educational industry
- Various new technological trends of PDA, Social networking, Blended Classes can be incorporated to minimize hurdles or challenges of effective learning
- It would help in good governance of teaching and learning practices
- Through personalized learning tactics, students can cultivate their own way of learning and assimilate the knowledge for better development of skills and talents.
- Skill development will lead to better application of knowledge for practical utility
- Cognitive, conative skills will be developed in students

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Study of Price trends in Onion (2013-2018)

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ABSTRACT:

Onion is an important crop; whose perishable nature is the chief source volatility of its price. It experiences a seasonal demand and is easily damaged by climatic conditions. This seasonal demand is on an account of religious occasions (Chaumasa/Navaratras/Pitru Paksh). The supply-chain for horticultural products, such as onion in India is highly fragmented, characterized by heavy post-harvest losses, cost inefficiency and thus resulting in low producers' share in consumers' price. The supply chain seems to be skewed away from producers for its inherent features like small land holding, illiteracy, and poor access to organized finance, markets and information. Suggestions such a storage facility, public private partnership and improving land under irrigation will help stable price trends in onion.

INTRODUCTION:

Onion is one of the important crops and it is commercially grown in most of the countries. Production and productivity not only depend upon area and cultural practices but also on genotype and environment of the crop. The onion prices experience a very high volatility due to it being perishable in nature. Onion is predominately a Rabi crop. Onion has an inelastic demand and also the production is not stable of onion. Understanding onion price fluctuation is important to make various polices and guidelines. China is the leading producer of onion having about 27% share. India ranks second but has the highest area for cultivation of onion. India is one of the largest exporters and hence India needs to improve its yields. India produces all the 3 types of onion i.e. red, yellow and white. There was a tremendous increase in the area under onion i.e., from 246 thousand ha (1982-83) to 1116 thousand ha (2011-12). Although onion is produced in all the States in India, the key onion producing states are Maharashtra, Madhya Pradesh, Karnataka and Gujarat.

CONSUMPTION OF ONION IN INDIA:

In the absence of reliable survey-based consumption estimates for Onion, we have to rely on NSSO based total annual household consumption and estimated indirect demand from all other users including wastage. Thus, there is a demand potential of 15.7 MMT as under:

Total Annual Consumption (Household) for 2009-10	**11.00 MMT**
Indirect demand (assumed at 30% of total consumption)	**4.71 MMT**
Total:	**15.71 MMT**

Exports ranges between 1.5 to 2 MMT, actual household consumption demand is not more than 9 MMT currently and indirect demand is around 3.5 MMT. The demand of onion at present in the country can be indicatively considered as under:

Total Annual Consumption (Household) 2011-12	**9.00 MMT**
Indirect demand	**3.50 MMT**
Export demand	**2.00 MMT**
Total:	**14.50 MMT**

LITERATURE REVIEW:

Seasonal Factors Resulting in Crop Loss

As per (India, 2012) production of onions in India reflected a steady uptrend in the last six years except in the year 2009-10 when onion production dropped to 12.19 million tonnes from 13.59 million tonnes in the year 2008-09, due to cyclone and unseasonal rains in Maharashtra, Gujarat and Karnataka accompanied by hailstorm in November 2009. In year 2010-11 again due to unseasonal rains the production was hit of late kharif crop in the aforesaid key onion producing states, which resulted in increase in onion prices due to temporary shortages across the country. Prior years to 2006, it has been reported that due to unreasonable weather resulted in crop losses during rabi 1997, kharif 1998 and kharif 2005.

Problem of Plenty

As per (India, 2012) the production estimates in onion tend to be misleading, as these are based on nursery stage estimates. Further the yields are subjected to changes. Hence it has been found out in the past that there is a pressing need to check and cross check acreage and adopt more reliable yield estimates. This will go on a long way in formulating guidelines and policies concerning domestic price support operations and exports.

Onion Consumption and Demand (Domestic)

As per (India, 2012) consumption of onion in India it is subjected to fluctuation on account of religious considerations. A section of the society avoids onions totally and a few others leave out onion from their daily diet during observance of religious occasions (Chaumasa/Navaratras/Pitru Paksh). The consumption of onions tends to decline when other fresh vegetables like carrot, radish and cucumber are available at an affordable price. Thus, during the winters, onion consumption in North India is comparatively lower.

Supply Chain Analysis of Onion

According to (Gummagolmath, 2012-2013) supply chain mainly focuses the flow of commodities from farmer to the consumer involving producers, traders and retailers. In such model producers are the vital link. Strengthening of farmers stake is also crucial so as to make him competitive with other players of supply chain during transition state i.e. from unorganized to organized supply chain. Undue advantage at the cost of farmers are taken by the better placed players in the commercially organized supply chain. The challenge will be to integrate large number of small-holder horticulture producers into the exiting supply chain and place them at par with other better placed players. The supply-chain for horticultural products in India is highly fragmented,

characterized by heavy post-harvest losses, cost inefficiency and thus resulting in low producers' share in consumers' price. The supply chain seems to be skewed away from producers for its inherent features like small land holding, illiteracy, poor access to organized finance, markets and information. A number of supply chains are operating in India for movement of commodity from farm gate to the ultimate consumer. Predominantly, traditional supply chain is still the followed where horticultural products are routed to the unorganized retailers through the wholesale markets. These wholesale markets are set up by the state government under Agricultural Produce Market Regulation Act wherein it is mandatory for buyers to purchase from these markets. However, in some of the leading states have introduced reforms in agricultural marketing. One such state in reforming agricultural marketing is Madhya Pradesh. According to amended Act, 2005 allows direct marketing and product to flow through alternate routes. These reforms are not in the right spirit as these channels are still in primitive stage as all the state governments have not enacted the reforms. The above observations shows that there still exist fragmented supply chain and is characterized by lack of connection between different players. The same has been observed in the study area where supply chain consists mainly of three players, the poorly placed farmers against better placed traders and retailers.

A comparative analysis of states of Maharashtra, Karnataka and Uttar Pradesh in case of onion production within the context of India:

As per (Pankaj Setiya, 2018) India ranks second in onion production, Indian onion productivity is lowest amongst the others. Inadequate certified seeds, poor seed replacement ratio (< 20%) and absence of investment in farm mechanization / improved farming practice are the main reasons for the low productivity. Improving commercial seed production and seed replacement ratios required. Banks need to give credit to commercial seed production and term loans which will lead to improved productivity.

As per (The Objective of Income stabilization of Onion Producers) the Maharashtra state contributes to 33 percent of all India onion supply and 40 percent of all India onion exports. It acts as a source of income generation for more than 5 million small and medium farmers yet the income from onion cultivation is unstable and uncertain in normal harvesting years, as well as in extreme situations like overproduction or underproduction. Unstable and uncertain revenues are the two factors from onion cultivation, which leads to economic factors and non-economic factors. Economic factors suggest the operation of and the perpetuating impacts of price variability and production instability, whereas non-economic factors point towards the defective marketing and trading practices.

As per (Ashok Gulati, 2017) in Madhya Pradesh there is an expansion of area under vegetables after 2010-2011.Vegetable increased from 284 thousand hectares in 2010-11 to 507 thousand hectares in 2011-12, with a growth rate of around 78 percent. This has almost doubled the share of area under vegetables in GCA from 1.3 percent in 2010-11 to 2.3 percent in 2011-12.

As per (Bagalkoti, 2017) vegetables continued accelerating their expansion in the 2000s as well, whereby area under vegetables expanded at even faster rate of 7 percent per annum. Their yield has also experienced growth rate of around 2.7 percent.

OBJECTIVES OF STUDY:

- To study the impact of various factors affecting onion prices fluctuation.
- To study the change in onion prices during the period.

RESEARCH METHODOLOGY:

The research method used is secondary data method. The data is sourced from Government sites. Data has been collected from journals like Horticultural Statistics at a Glance 2018, Making Rapid Strides-Agriculture in Madhya Pradesh: Sources, Drivers, and Policy Lessons, Baseline Data for Potato and Onion, etc.

NEED FOR THE PROJECT:

As per (Price and Competition Issues in the Indian Markets in Onion, February 2012) the on-going on food price inflation, has impacted on the increase of onion prices. This is one of the important issues that adversely affects food security and consumer welfare in India. Onions are important to the Indian diet and has a significant impact on the household food budget. The Indian Government responded to the recent price increases by banning exports and introducing direct market interventions to control prices. The subsequent price collapse in February 2011 then impacted heavily on the farm sector. Given that onion prices rose more steeply than can be explained simply by the supply shortfalls, the research focussed on market structure, price formation and competition issues.

In 2019, due to unseasonal rainfalls in Karnataka, Gujarat and Maharashtra, the largest onion growing state in the country was the reason behind the fresh hike in onion prices can be attributed to higher wholesale rates triggered.

DATA COLLECTION AND ANALYSIS

All India Area, Production and Productivity of Onion

Area in '000 Ha

Production in '000 MT

Year	Area	Production	Productivity
2013-2014	1204.0	19402.0	16.1
2014-2015	1173.4	18927.4	16.1
2015-2016	1320.0	20931.2	15.9
2016-2017	1305.6	22427.4	17.2
2017-2018	1285.0	23262.3	18.1

Source: (Ministry of Agriculture & Farmers' Welfare Department of Agriculture, 2018)

State-wise Area and Production of Onion

Area in '000 Ha

Production in '000 MT

SR NO	STATES	2015-2016		2016-2017		2017-2018	
		A	P	A	P	A	P
1	Maharashtra	522.35	6529.34	481.05	6734.74	507.96	8854.09
2	Madhya Pradesh	118.2	2848	150.83	3721.61	150.87	3701.01
3	Karnataka	190.21	2695.99	217.82	3049.48	195.28	2986.59

Source: (Ministry of Agriculture & Farmers' Welfare Department of Agriculture, 2018)

Monthly Series of State-wise Wholesale Prices for Onion (April 2017 to March 2018)

Prices in Rs/Qtl

STATE	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Maharashtra	511.07	437.69	551.64	726.5	1900.47	1451	2101.3	2738.76	2682.09	2487	1416	800.15
Madhya Pradesh	407.51	297.36	772.42	653.95	1074.59	1092.6	1630.4	2262.35	2500.76	2238.6	1300.8	734.65
Karnataka	677.35	628.55	824.07	831.53	1887.29	1507.9	2060	2779.89	2893.66	2644.1	1514.7	884.95

Source: (Ministry of Agriculture & Farmers' Welfare Department of Agriculture, 2018)

Monthly Series of State-wise Arrivals of Onion (April 2017 to March 2018)

Arrival in Tonnes

States	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Maharashtra	519771	695995	475131	632119	558904	476459	400364	313281	614900	637112	585052	417443
Madhya Pradesh	98397	102875	668793	52608	29938	35205	35488	61938	42250	37664	42632	45245
Karnataka	65303	85340	79135	77260	52939	70084	157777	110841	73461	70494	70504	83910

Source: (Ministry of Agriculture & Farmers' Welfare Department of Agriculture, 2018)

All India Monthly Average Wholesale Prices of Onion for Three Years

Unit (Rs./Qtl)

	2016	2017	2018
January	1814.63	1105.87	3517.81
February	1542.71	1075.55	2862.89
March	1332.16	1070.99	2047.78
April	1244.94	1050.96	1466.91
May	1174.58	1014.8	1250.93
June	1183.86	1049.06	1340.9
July	1255.35	1079.22	1618.8
August	1253.67	2023.4	1666.86
September	1154.05	2061.55	1573
October	1111.64	2392.32	1646.47

November	1178.04	3197.39	1710.03
December	1156.59	3549.3	1455.93

Source: (Ministry of Agriculture & Farmers' Welfare Department of Agriculture, 2018)

All India Monthly Average Retail Prices of Onion for Three Years

Unit (Rs./Qtl)

	2016	**2017**	**2018**
January	22.66	14.84	42.69
February	19.62	14.61	35.12
March	17.16	14.52	26.18
April	16.4	14.36	19.28
May	15.68	14.07	16.72
June	15.77	14.56	17.78
July	16.64	15.04	21.02
August	16.6	26.02	21.6
September	15.65	26.58	20.6
October	15.27	30.11	21.41
November	15.97	39.07	22.02
December	15.53	43.44	19.36

Source: (Ministry of Agriculture & Farmers' Welfare Department of Agriculture, 2018)

Estimated Irrigated and Unirrigated Area by Size Classes under Onion Crop

Area (in Hectares)

SR NO	**Size Class (in Ha.)**	**ONION**			
		No. of Holdings	**Irrigated Area**	**Unirrigated Area**	**Total**
	Below 0.5	242577	20383.99	11573.39	31957.38
1	(0.5-1.0)	213167	37296.43	29030.91	66327.34
	Marginal	455744	57680.42	40604.3	98284.72
2	(1.0-2.0)	288623	87779.83	80279.56	168059.39
	Small	288623	87779.83	80279.56	168059.39
3	(2.0-3.0)	134534	54249.97	54008.83	108258.8
4	(3.0-4.0)	62554	29989.15	34034.7	64023.85
	Semi-Medium	197088	84239.12	88043.53	172282.65
5	(4.0-5.0)	38407	20861.52	23455.3	44316.82
6	(5.0-7.5)	42680	27803.83	32202.54	60006.37
7	(7.5-10.0)	17373	13828.83	16706.08	30534.91
	Medium	98460	62494.18	72363.92	134858.1

8	(10.0-20.0)	14794	16017.98	17701.11	33719.09
9	20 & Above	2274	4137.81	4018.33	8156.14
10	Large	17068	20155.79	21719.44	41875.23
11	All Classes	1056983	312349.34	303010.75	615360.09

Source: (Ministry of Agriculture & Farmers' Welfare Department of Agriculture, 2018)

ANALYSIS:

In case of India:

Dependant Variable: Productivity

Independent Variable: Area, Production

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	1.000	.00941

a. Predictors: (Constant), Production, Area

Here R =1 which indicates that production, area and production have high correlations. This correlation is positive and linear.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.530	.097		160.871	.000
	Area	-.012	.000	-.816	-99.657	.000
	Production	.001	.000	1.516	185.106	.000

a. Dependent Variable: Productivity

Productivity is measured as crop per unit area. The regression equation for the same is given by:

Productivity =15.530 + (0.012) Area+0.001 Production

An increase in productivity is indicated by a decrease in area. Therefore, there is a negative sign for area.

In case of State-wise Area and Production of Onion Maharashtra:

Dependant Variable: Production

Independent Variable: Area

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.093[a]	.009	-.983	1812.16984

Here R= 0.093 which indicates a weak correlation. This is a positive linear equation.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4488.693	30811.232		.146	.908
	Maharashtra_A	5.725	61.124	.093	.094	.941

Maharashtra Production= 4488.693+5.725Area

Here the rate of change in the area of Maharashtra is measured at 5.725. Here the variability in production is measured at 0.093 which is a high rate of change in the productivity.

In case of State-wise Area and Production of Onion Madhya Pradesh:

Dependant Variable: Production

Independent Variable: Area

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	.999	15.31427

Here R=1 where the correlation is high.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-277.282	80.890		-3.428	.181
	MadhyaPradesh_A	26.441	.574	1.000	46.027	.014

Madhya Pradesh Production= (277.282) +26.441Area

Here the rate of change in the area of Madhya Pradesh is measured at 26.441. Here the variability in production is measured at 1.000 which is a very high rate of change in the productivity.

In case of State-wise Area and Production of Onion Karnataka:

Dependant Variable: Production

Independent Variable: Area

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.761[a]	.579	.158	173.08630

Here R=0.761 it indicates a moderate correlation.

Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	947.746	1677.646		.565	.673
	Karnataka_A	9.761	8.327	.761	1.172	.450

Karnataka Production= 947.746 + 9.761Area

Here the rate of change in the area of Karnataka is measured at 9.761 which is lower than Madhya Pradesh. Here the variability in production is measured at .761which is a moderate rate of change in the productivity.

All India Monthly Average Wholesale Prices of Onion for Three Years

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Y2016_WP	12	1111.64	1814.63	1283.5183	202.29111
Y2017_WP	12	1014.80	3549.30	1722.5342	914.97796
Y2018_WP	12	1250.93	3517.81	1846.5258	673.61737
Valid N (listwise)	12				

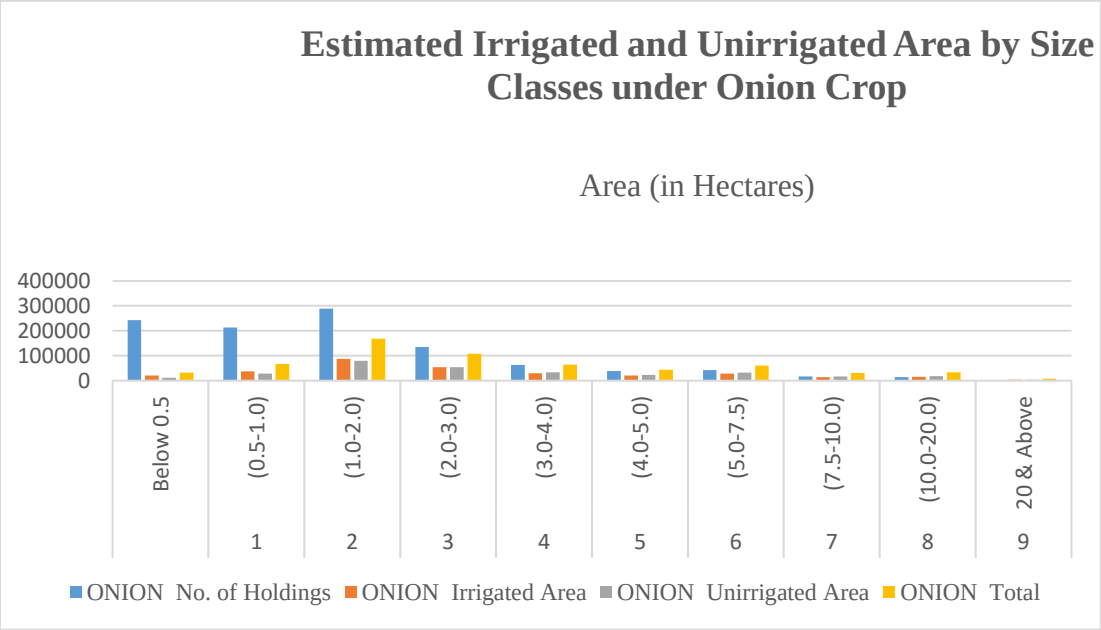
The highest volatility in the wholesale monthly prices of onion was witnessed in the year 2017, with standard deviation of 914.97796. The lowest standard deviation was witnessed in the year 2016, which was 202.29111. The year 2016 saw the lowest average price of 1283.5183. 2018 was marked with highest mean wholesale monthly prices of which 1846.5258 which indicates a large number of months were centred with high onion price throughout the year.

All India Monthly Average Retail Prices of Onion for Three Years

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Y2016_RP	12	15.27	22.66	16.9125	2.14848
Y2017_RP	12	14.07	43.44	22.2683	10.61723
Y2018_RP	12	16.72	42.69	23.6483	7.67856
Valid N (listwise)	12				

The mean retail price for onion in India for the year 2016 was 16.9125, 2017 was 22.2683 and 2018, was 23.6483. It is visible that the prices of onion experience a sudden rise form the year 2017 by 31.71% from 2016.



The number of holdings are classified as marginal where the holding of land is below 0.5 to 1 Hectares of land, small holders are between 1 – 2 hectares of land, semi-medium ranges between 2-4 hectares of land, medium ranges between 4-10 and large is 10 and above.

	Irrigated Area	Unirrigated Area
Marginal	58.68706753	41.31293247
Small	52.23143438	47.76856562
Semi-Medium	48.89588127	51.10411873
Medium	46.3406944	53.6593056
Large	48.13296548	51.86703452

Marginal and small farmers in case of onion production owned irrigated land over unirrigated land. This was opposite in case of semi-marginal, medium and large farmers, where a large number of farmers owned unirrigated land.

SUGGESTIONS:

1. A number of storage structures including pack house, ripening chamber, onion storage structure, cold storage, precooling unit, etc. have to be constructed at local level, due to the perishable nature of onion.
2. Leveraging public private partnership in farming technology assistance to farmers.
3. Area under semi-medium, medium and large farmers should be increased with irrigation facilities. This will increase an enormous production.

CONCLUSION:

India ranks as one of those countries which has the highest area under cultivation of onion. The prices of onion are highly volatile on an account of its perishable nature. This is one of the important issues that adversely affects food security and consumer welfare in India since onions are important to the Indian diet and has a significant impact on the household food budget. Maharashtra which is the highest producer of onion experiences lower variability in area under onion production as compared to Madhya Pradesh and Karnataka displays lower variability as compared to Madhya Pradesh. Some of the suggestions include improving storage facilities, leveraging public- private partnership as well as improving area under production.

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Volatile nature of Sugar Prices, Analysis and Suggestions

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ABSTRACT:

Sugarcane is an important cash crop in India with Uttar Pradesh as the largest producer of sugarcane followed by Maharashtra. Maharashtra has a high recovery rate of sugarcane as compared to Uttar Pradesh making it the largest producer of sugar. There is a large contribution of Uttar Pradesh to khandsari and gur production as compared to sugar. Sugar prices in India are assessed through FRP (Fair and Remunerative Price) and SAP (State Advised Price). the large contribution of Uttar Pradesh to khandsari and gur production as compared to sugar. The central government has entitled the state government the power to regulate the distribution- movement system of sugarcane. There are restrictions on the on the trade of sugar byproducts across inter-state boarders. The prevailing weather condition and prices that farmers get for sugarcane determines the volatile nature of sugar supply and hence the price. Suggestions to the volatile nature of sugar prices include the use warehouse bills and technology in micro-irrigation system, sucrose content detection.

INTRODUCTION:

India being the second largest country in the world, whose sugar industry impacts the rural livelihoods of sugarcane farmers, 60 million in number, with about 600,000 workers directly employed in the sugar factories. 12.5 million acres of land is under the cultivation of sugar which is produced in 11 states and delivered to 530 operating mills. The domestic need of sugar market extends to reach 24.0 million metric tons in India. There are a large number of small farmers (less than 0.5 acre),with low cane yields (28 mt/acre as compared to with 33 mt/acre in the USA), with a large number of small mills (50,000 tons of sugar by mill on average) and short duration sugar (125-130 days) with high cost of production.

The largest producer of sugarcane in India is Uttar Pradesh (36.5 percent in 2012-13) followed by Maharashtra (22.0 percent). Maharashtra is the largest producer of sugar in India (35.9 percent) followed by Uttar Pradesh (25.6 percent). This is because the high recovery rate of Maharashtra and the large contribution of Uttar Pradesh to khandsari and gur production as compared to sugar.

The 2012-2013 drought portrayed the need to develop sugarcane crops in the vicinity of water source. Sugarcane is water intensive crop. In Karnataka and Maharashtra, the pricing policy of sugarcane has semblance with revenue sharing formula and the sugar industry is growing in spite of severe water shortage. For long term growth of sugar industry in Karnataka and Maharashtra, it is necessary to adopt change in the pattern of sugarcane cultivation and shift to drip irrigation.

The sugar consumption for the year 2019-2020 is at 27.5 MMT, four percent above the current year (2018-2019) estimate of 26.5 MMT. India has witnessed a strong demand for sugar from wholesale buyers, food processing units, restaurant, as a result of growing population, rising income and changing consumption patterns. Two-third of total sugar consumption in India is

accounted to bulk users. Khandsari sugar is consumed for local use such as sweet shops while gur is consumed by rural household for food and feed.

LITERATURE REVIEW:

The Sugarcane (Control) Order, 1966:

Under the Sugarcane (Control) Order, 1966, the price of sugar is fixed annually.

The main players for the sugar sector:

GOI (Government of India):

he distribution of sugar to the Public Distribution System (PDS), sanction of soft loans, and the responsibility to subsidize sugar production and distribution lays on The Ministry of Consumer Affairs, Department of Food and Public Distribution.

- The central government's fair and remunerative sugarcane price (FRP) is calculated by a decentralized agency under the Ministry of Agriculture and Farmers Welfare by the name The Commission for Agricultural Costs and Prices (CACP).
- The sugar prices are approved by the Cabinet Committee on Economic Affairs (CCEA) which is chaired by the Prime Minister of India.
- Under the Sugar Development Fund (SDF) which was enacted in 1982, empowered the central government to fund research and extend and improve technological improvements in the sugar sector. Since 2008, it is also empowered to fund debt restructuring and distribution of soft loans to sugar mills.
- The Indian Council of Agricultural Research (ICAR), an autonomous body functions to coordinate agricultural education and research in India and corresponds and reports to the Department of Agricultural Research and Education, Ministry of Agriculture.

Sugarcane Pricing Policies in India:

As mentioned by (Meriot, August 2016), sugarcane derives its price through the dual price scheme namely from the Government of India's tool known as FRP and the State Government of India's tool SAP.

Fair and Remunerative Price (FRP): The FRP assures price to cane growers and was introduced in 2009/2010 and set the basic price of sugarcane on a standard recovery of 9.5% taking into account the following factors:

- Cost of sugarcane production
- Return to growers from alternative allied and alternate agricultural produce and commodity price
- Include fair price of sugar to consumers
- Price at which sugar is sold to small mill producer
- Recovery of sugar from cane
- Determining proceeds from sale of post sugar process by-products namely molasses, bagasse and press mud (filter cake) or their imputed value
- Reasonable margin to growers of cane

The Government of India (GOI), decides annual FRP, after consulting Commission for Agricultural Costs and Prices (CACP) and confirming with state government and state

bodies and expertise. It is at this price that all millers are supposed to purchase from growers.

The Rangarajan Committee Report, appointed by the GOI recommended reforming sugar policy by connecting sugarcane price and the price of sugar on the domestic market. The lack of this connection is a major issue and creates regular imbalance in demand and supply of sugar.

SAP (State Advised Price): The next level pricing of cane is also written down by many states. It is higher than the FRP by 30-35%. In case of the declaration of cane prices under SAP, it overpowers the FRP, in spite of prevailing market price.

SAP is announced in October-November but may suffer delay of a couple of weeks. The delay occurs when there is no common ground over the sugar price incase of cane growers want a higher price whereas mill worker resists the same.

Sugar Marketing Policy:

The current sugar industry is subjected to control and regulation under state government, for instance sugar industry licensing, cane area reservation, adoption of the cane price formula, specified cane procurement areas for sugar mills, and cane pricing. Also the public distribution system (PDS) operation devised by state/Union Territories, and the Central Government provides a fixed subsidy at INR 18.50 per kg for families who will be provided 1 kg of sugar per family per month under the Antyodaya Anna Yojana (AAY).

Trade Policy:

To anticipate an increase in the sugar surplus, as state The GOI has come out with policy measures namely:

- To stabilize fluctuating domestic sugar prices.
- To prevent imports at a subsidized rate.
- To encourage surplus stock export.
- To improve cash flow and profits of sugar mills.

The measures implemented were as follows:

- By implementing a limit to the stock holding period for 2 months beginning from February 2018 through March 2018.
- By doubling the duty on import of white and raw sugar by a 100 percent without an end date.
- Eliminated the duty on export from 20 percent to zero percent on March 20, 2018.
- Two MMT of exports was introduced under the Minimum Indicative Export Quota (MIEQ) scheme
- The Duty-Free Import Authorization (DFIA) scheme3, allows of white sugar until September 2018, under which exporters were permitted to import with zero duty for a period of three years.
-

The sugar mill sector and its laws and regulations:

Determination of cane area and its procurement (Central and State): According to (Meriot, August 2016), The Central Sugarcane (Control) Order,1966 (6), makes it essential

for sugarcane growing farmers to sell their cane to mills at a specified FRP or SAP. The central government has entitled the state government the power to regulate the distribution-movement system of sugarcane. On determining the crushing capacity of the mills, potential area under sugarcane, and availability of cane, the cane areas are allotted to sugar mills. The reason behind this regulation is to prevent speculation on cane procurement and uncertainty for both millers and cane growers.

Minimum mill distance criteria: (Meriot, August 2016), suggest that under the Central Sugarcane (Control) Order, 1966 (6-A), a new sugar factory shall not be permitted to set be established within the radius of 9.3 miles (15 km) of any existing sugar factory. The distance of such approval may be with prior approval of the Central Government. It suggests that the minimum distance must be followed and may extend the its limits but may not reduce in limits. In the states of Maharashtra, Punjab and Haryana, the minimum distance is kept at 15.5 miles (25 km).

Interstate regulations for the trade of sugar byproducts: According to (Meriot, August 2016), there are restrictions on the on the trade of sugar byproducts such as molasses and bagasse. This was implemented to prevent speculation on prices of these products. For instance, the of molasses can be extended to produce electricity and hence State Governments fix quotas for different end uses and imposes restrictions regarding movement or trade across state borders.

Summarizing the issues arising as a result of the price fluctuation:

(Rahil Shaikh, 2020) mentions that the regulatory and pricing policy in India has been oriented towards protecting the interest of cane growers and sugar manufacturers (to provide sustained income levels) and domestic consumers (to protect against sugar inflation). But meeting these objectives has been a concern, especially leaving the mills behind. Pricing here by the state and the center has been has been a disconnect from the market realized sugar prices. Hence the cane millers are not in the state to cut down their expenses incurred in paying support prices to farmers in line with the sugar price fluctuations in domestic and international markets. This significantly affects the chain participants. It raises the chances of credit default. Data reveals that outstanding bank credit to sugar industry as on March 21, 2014, has been Rs 34.8 thousand crore, which is an increase by a 5.5% over the previous year.

OBJECTIVES OF STUDY:

i. To study the effect of sugar prices on the sugar industry.
ii. To study trends in sugar prices.

RESEARCH METHODOLOGY:

The research methodology adopted is the use of secondary data through external sources. The external data sources used is in the form of published sources as well as government sources and external databases.

NEED FOR THE STUDY

Sugar displayed a higher average rate of inflation than overall WPI inflation during the period between 2005-2013. The WPI of sugar was 9% in the years between 1999-2012, 8% in the years between 1999-2005 (Q1-Q4) and 11% (Q1-Q2) in the years between 2005-2013 (Q3-Q4) as state by (Thangzason Sonna, October 2014) in the RBI Working Paper Series.

Deflation was evident among food sub-groups namely, fruits, vegetables, pulses and sugar with a combined weight of 12.7 in February 2019 as mentioned by (RBI, April 2019). Also, this period lasted from October 2018 to February 2019.The easing of food prices in early 2018-19 is the eminent cause.

The rise a fall of sugar prices is a cyclical process and influenced by demand and supply theory which in turn affects farmers and consumers who depend on it as mechanism of livelihood and routine consumption respectively.

Data Collection:

Trends in Sugarcane: Area, Production and Yield

('ooo hectares, 'ooo tonnes, Kg. per hectare)

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Uttar Pradesh							
Area	2125	2162	2212	2228	2141	2169	2160
Production	120545	128819	132428	134689	133061	145385	133704
Yield	56727	59583	59868	60453	62155	67029	61900
Maharashtra							
Area	965	1022	933	937	1030	987	633
Production	81896	86733	69648	76901	84699	73680	49689
Yield	108392	111362	97688	103575	106788	99083	104002
All India							
Area	4885	5038	4999	4993	5067	4927	4503
Production	342382	361037	341200	352142	362333	348448	306027
Yield	70091	71667	68254	70522	71512	70720	67967

Source: Commission for Agriculture Cost and Prices

State-wise Production of Sugar

State	2010-11	2011-12	2012-13	2012-13	2014-15	2015-16	2016-17
Uttar Pradesh	57.6	69.6	75.0	66.1	71.4	68.5	88.0
Maharashtra	90.7	90.0	79.9	77.2	105.2	86.1	41.9
All India	243.5	263.4	251.8	245.5	284.6	251.2	203.0

(In lakh tonnes)

Source: Commission for Agriculture Cost and Prices

FRP of Sugarcane

Sugar Season	FRP (Per quintal)
2010-2011	139.00
2011-2012	145.00
2012-2013	170.00
2013-2014	210.00
2014-2015	220.00
2015-2016	254.00
2016-2017	257.00

Source: Commission for Agriculture Cost and Prices

SAP of Sugarcane in Uttar Pradesh:

Sugar Season	SAP (Per quintal)
2010-2011	205
2011-2012	240
2012-2013	280
2013-2014	280
2014-2015	280
2015-2016	280
2016-2017	315

State-wise Sugar Recovery

State	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Uttar Pradesh	9.15	9.08	9.17	9.27	9.49	10.51	10.61
Maharashtra	11.30	11.67	11.45	11.47	11.67	11.21	11.24
All India	10.17	10.26	10.01	10.27	10.44	10.51	10.51

Source: Commission for Agriculture Cost and Prices

Ex-Mill Prices of Sugar in Major Sugar Producing States

State	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Uttar Pradesh	2807	3076	3203	3110	2578	3207	364
Maharashtra	2593	2860	2989	2760	2340	3045	351
All India	2660	2919	3072	2892	2447	3122	3609

Source: Commission for Agriculture Cost and Prices

State-wise Annual Installed Capacity (IC) and Utilized Capacity (UC)

State	2012-13		2013-14		2014-15		2015-16		2016-17	
	IC	**UC**	**IC**	**UC**	**IC**	**UC**	**IC**	**UC**	**IC**	**UC**
Uttar Pradesh	95	79.2	95	69.8	95	75.4	95	72.3	94.7	92.7
Maharashtra	98	81.2	101	76.6	106	99.4	110	77.3	112	37.5
All India	319	79.0	323	76.0	329	86.4	334	75.2	338.6	59.8

Source: Commission for Agriculture Cost and Prices

DATA ANALYSIS:

Relationship between area production and yield of sugarcane:

a. **Case of Uttar Pradesh:**
Where the dependent variable is yield and independent variable is area and production.

Model Summary of Regression using SPSS:

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	1.000[a]	1.000	1.000	29.90649

Here, R = 1.00 for Uttar Pradesh which indicates a very high degree of co-relation between the three variables.

Coefficients:

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	59728.221	722.809		82.633	.000
UP Sugarcane Production	.464	.002	1.083	258.079	.000
UP Sugarcane Area	-27.695	.361	-.322	-76.761	.000

Here, the linear regression model for the variables is demonstrated by:

Yield = 59728.221 + .464 (Sugarcane Production) -27.695 (Sugarcane Area)

The negative relationship indicates yield is inversely proportional to area under sugarcane production.

b. Case of Maharashtra:

Where the dependent variable is yield and independent variable is area and production.

Model Summary of Regression using SPSS:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953[a]	.908	.862	1820.36250

Here, R = .953 for Uttar Pradesh which indicates a very high degree of co-relation between the three variables.

Coefficients:

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	104934.514	5255.973		19.965	.000
Maharashtra Sugarcane Production	1.106	.180	2.844	6.145	.004
Maharashtra Sugarcane Area	-89.512	16.668	-2.485	-5.370	.006

Here, the linear regression model for the variables is demonstrated by:

Yield = 104934.514 + 1.106 (Sugarcane Production) -89.512 (Sugarcane Area)

The negative relationship indicates yield is inversely proportional to area under sugarcane production.

c. Case of India:

Where the dependent variable is yield and independent variable is area and production.

Model Summary of Regression using SPSS:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000[a]	1.000	.999	37.54270

Here, R = 1.000 for Uttar Pradesh which indicates a very high degree of co-relation between the three variables.

Coefficients:

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	68168.973	522.618		130.437	.000
India Sugarcane Production	.199	.003	2.571	69.376	.000
India Sugarcane Area	-13.580	.283	-1.777	-47.951	.000

Here, the linear regression model for the variables is demonstrated by:

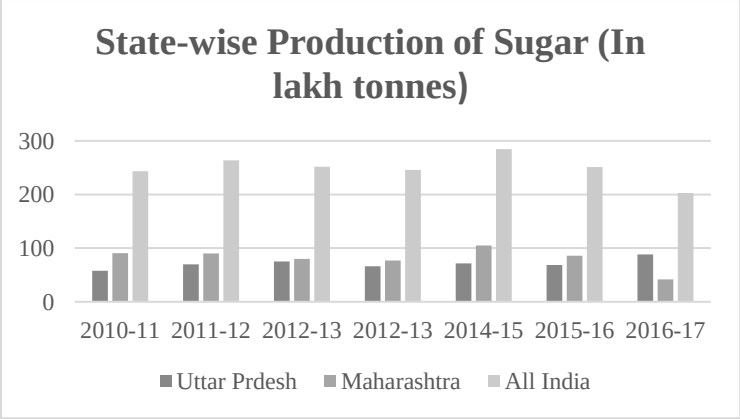
Yield = 68168.973+ .199 (Sugarcane Production) -13.580 (Sugarcane Area)

The negative relationship indicates yield is inversely proportional to area under sugarcane production.

d. Comparing Uttar Pradesh and Maharashtra with India:

Maharashtra has a higher yield of sugarcane as compared to Uttar Pradesh and pan India. This also indicates a high efficiency in the use of land resource in Maharshtra. But, (Meriot, August 2016), suggest that the sugar industry in India is not as competitive as the USA. There are a large number of small farmers (less than 0.5 acre), with relatively low cane yields (28 mt/acre compared with 33 mt/acre in the USA).

State-wise Production of Sugar:



The graph is a clear indication of the fact that Maharashtra produces more sugar than Uttar Pradesh. Also seen from the graph is the volatile nature of year wise production of sugar from 2010-2017. The share of the two states Uttar Pradesh and Maharashtra account for more than 50% of the total sugar production in India. For example, the year 2014-2015 saw 62.052 percent.

State-wise Annual Installed Capacity (IC) and Utilized Capacity (UC)

Paired Sample Statistics

	Mean	N	Std. Deviation	Std. Error Mean
UP Annual Installed Capacity	94.9400	5	.13416	.06000
UP Annual Utilised Capacity	77.8800	5	8.99928	4.02460
Maharashtra Annual Installed Capacity	105.4000	5	5.89915	2.63818
Maharashtra Annual Utilised Capacity	74.4000	5	22.61692	10.11459
India Annual Installed Capacity	328.7200	5	7.94934	3.55505
India Annual Utilised Capacity	75.2800	5	9.71658	4.34539

Here paired sample T-Test was used to find the relationship between the Installed Capacity (IC) and Utilized Capacity (UC) of Uttar Pradesh and Maharashtra with India.

Paired Sample Correlation

	N	Correlation	Sig.
UP Annual Installed Capacity & UP Annual Utilised Capacity	5	-.921	.027
Maharashtra Annual Installed Capacity & Maharashtra Annual Utilised Capacity	5	-.516	.374
India Annual Installed Capacity & India Annual Utilised Capacity	5	-.617	.268

Paired Sample Test

	Paired Differences		
	Mean	**Std. Deviation**	**Std. Error Mean**

UP Annual Installed Capacity – UP Annual Utilised Capacity	17.06000	9.12294	4.07990
Maharashtra Annual Installed Capacity – Maharashtra Annual Utilised Capacity	31.00000	26.15196	11.69551
India Annual Installed Capacity – India Annual Utilised Capacity	253.44000	15.90182	7.11151

	95% Confidence Interval of the Difference		**t**	df	Sig. (2-tailed)
	Lower	**Upper**			
UP Annual Installed Capacity – UP Annual Utilised Capacity	5.73238	28.38762	4.181	4	.014
Maharashtra Annual Installed Capacity – Maharashtra Annual Utilised Capacity	-1.47195	63.47195	2.651	4	.057
India Annual Installed Capacity – India Annual Utilised Capacity	233.69528	273.18472	35.638	4	.000

Comparing Uttar Pradesh and Maharashtra with India in terms of its capacity:
The difference in the means of IC and UC are recorded. The co-relation between the two variables of Uttar Pradesh is -.921(very high negative co-relation), for Maharashtra is -.516 (moderate negative co-relation) and for India -.617 (moderately high negative co-relation). The planned

capacity is greater than the required capacity because of negative co-relation between IC and UC. This indicates an optimum level of dedicated installed capacity in Uttar Pradesh as compared to Maharashtra. The 2-tail significance for Maharashtra is .057 (that is greater than 0.05). While in the case of Uttar Pradesh and India, it is .014 and .000 respectively.

There is a wide difference between SAP and FRP as seen above. In the year, 2016-2017, SAP was noted to be 22.7 percent higher than FRP and 9.6 percent higher compared with RSF, (Commission for Agricultural Costs and Prices, 2018-2019).

SUGGESTIONS TO THE PRICING POLICY:

i. Warehouse receipt facilitates the transfer of ownership of agricultural produce stored in the warehouse without the delivery of the physical commodity. Thus, the use of Warehouse receipts in agriculture finance.

Cane price payable to farmers as percentage of value of sugar in Uttar Pradesh:

Sugar Season	Ex-Mill Sugar Prices (Rs/qtl)		Cane Price Paid to Farmers		State Recovery Rate (%)		Total Sugar Value from 1 qtl of Cane (Rs/qtl) at Recovery Rate 9.5% or > 9.5 % (Rs/qtl)	Cane Price Payable to Farmers under RSF at Recovery Rate 9.5% or > 9.5 % (Rs/qtl)
	Uttar Pradesh (UP)	**Maharashtra (MH)**	**SAP (Rs/qtl) (UP)**	**FRP (Rs/qtl) (MH)**	**Uttar Pradesh (UP)**	**Maharashtra (MH)**		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) = (2) * 9.5	(9) = (8) * 0.75
2010-2011	2807	2593	205	139.00	9.15	11.30	267	200
2011-2012	3076	2860	240	145.00	9.15	11.30	292	219
2012-2013	3203	2989	280	170.00	9.15	11.30	308	231
2013-2014	3110	2760	280	210.00	9.15	11.30	295	222
2014-2015	2578	2340	280	220.00	9.15	11.30	245	184
2015-2016	3207	3045	280	254.00	9.15	11.30	337	253

2016-2017	364	351	315	257.00	9.15	11.30	383	288

ii. As per the analysis the difference in the means of the Utilised Capacity (UC) of Maharashtra was lower than Uttar Pradesh and India. This indicates scope to increase the shelf life, in the transportation cycle loss in case of sugarcane to sugar mills. This can be treated using digital technology. This shall prove beneficial to sugarcane growers in case of identifying the crops which have to be cut first and sent to the mills. This will curtail wastage and will enhance the underutilised capacity of sugar mills.

iii. Sugarcane is a water-intensive crop and meets challenges of producing it with less water. Sugarcane growing regions experience adverse impact of drought. Thus, it is recommended to promote micro-irrigation technology s such as drip irrigation for sugarcane cultivation on a larger scale to conserve water resources and improve production.

iv. Farmers concern in lack of transparency in the existing procedures of measuring sugar recovery. The sugar mills have to determine transparency in weighing sucrose levels. The use of technology can be employed for the measurement of sucrose content.

CONCLUSION:

Sugar is an essential commodity of consumption. The sugarcane used to process sugar is grown by a large number of marginal farmers. The consumption of sugar has increased in the recent years. Two-third of total sugar consumption in India is accounted to wholesale buyers. In spite, of the prevailing FRP, many states have included the provision of SAP which accounts much higher than FRP. The suggestions for the same include the use of warehouse receipt for financing, the use of technology for micro-irrigation and detecting sucrose content.

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A Study on Adoption of 4 Days Work Week in India

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ABSTRACT

Organizations consider employees as the backbone and thus every day brings in new strategies to motivate and encourage them to work more efficiently. One important strategy which is recently hitting the market is 4-days work week. The purpose of this research is identified if India is ready to adopt shorter work week culture. It is based on findings from qualitative research undertaken in Dec 2019. This Paper will provide an overview of advantages as well as disadvantages of a compressed work week, furthermore a brief Insight on essential factors that may serve as building or breaking parameters for the implementation of 4-day work week culture in India.

Keywords: 4 days' work week, Work Hours Impact on Health, Compressed work week, Shorter Work week, Increased Productivity, Workdays Culture, Reduced Work Week

INTRODUCTION

Four-day week work is a method where the five days working schedule is compressed into four days module by adding an extra two hours of compensation in every working day. i.e. to work 4 days a week 10 hours per day. By this, the employee gets a three day weekend, but still, the working hours of one extra day are also covered by working extra hours.4-day work week strategy is attracting most of the employers as well as employees as it satisfies the business perspective as well as gives a good work-life balance too. When provided with flexible schedules employers

"See an increase in productivity, it does have a positive impact on engagement. People who have flexibility feel reciprocity. They want to give back to the company", (Bill Castellano, professor at Rutgers' School of Management and Labor Relations, 2019). Some employers have employees working for 10 hours per day, while others shorten the number of hours worked each week. Some companies design the schedule in such a way that the employee ends up doing eight nine-hour of shift for three days and one eight-hour day and gets every other Friday off.

(i) Why India Should Adopt The 4-Day Work Week?

Working longer doesn't mean working better. A shorter work week will help improve efficiency and quality of life Since the Industrial revolution, one thing has remained constant -- a belief that working longer and harder begets great achievement. But if the benefits of new technologies are to be evenly spread around, employees can work less hours a week and employers can benefit from the increase in productivity and better attendance.

(ii) Pros - 4 Day Work Week:

- It motivates employees to work harder
- It does not disturb the flow of work
- It helps employees to take a break from Commuting to the workplace
- It helps the employee to choose their own Four-day work week strategy

- It personally helps the employees to do their personal activities
- It helps the employees to save fuel cost as well as environment friendly
- Lower unemployment rates
- Employee satisfaction

(iii) Cons - 4 Day Work Week:

- Increased fatigue and less productivity sometimes
- It might cause personal disturbances like finding childcare, late night dinners etc.
- The new working pattern might completely drain internally
- Stress might reduce the efficiency of work
- Might also cause overlap in working shifts for 24 hours working operations
- Employees tend to take more breaks

(iv) Microsoft Japan's 4-Day Work Week Boosted Productivity By 40 Percent

- Microsoft Japan trialed a 4-day work week for its entire workforce, calling the project the "Work-Life Choice Challenge Summer 2019". Approximately 2300 employees were given 5 Fridays off, with no reduction in salary and no days taken out of their annual leave.
- Results of its trial were, shortened week increased productivity by almost 40 percent - thanks in part to shorter, more efficient meetings. Employees took 25.4 percent less time off during the trial, and the benefits didn't end there either. As Microsoft Japan's offices were empty for 5 extra days, electricity use was down 23.1 percent. Employees also printed 58.7 percent fewer pages, meaning a shorter work week could be good for both people and the environment. Employees in customer-facing roles did state it was hard to relax on their Fridays off with the rest of the working world continuing apace. But overall the extra day off was a big hit, with 92.1 percent of employees saying they liked the shorter week.

(v) Finland Prime Minister's Aspirational Goal of a Six-Hour, Four-Day Workweek

Sana Marin, the prime minister of Finland, is the most recent high-profile proponent of shortening the amount of time people work. Marin put forth the idea of companies adopting a flexible six-hour day and a four-day workweek at a panel discussion before she became prime minister. Marin said, "This could be the next step for us in working life."

LITERATURE REVIEW

2.1 Four – Day Week Pays Off by UK Business (Henley Business School, July 2019)

Henley's 'Four Better or Four Worse?' paper exploring this growing business trend found that of those businesses who have already adopted a four-day working week, nearly two-thirds (64%) have reported improvements in staff productivity. The research also found that this working style increased overall quality of life for employees, with over three quarters (78%) of implementing businesses saying staff were happier, less stressed (70%) and took fewer days off ill (62%). Almost two thirds (63%) of employers said that providing a four-day working week has helped them to attract and retain talent, less stressed (70%) and took fewer days off ill (62%). Almost two thirds (63%) of employers said that providing a four-day working week has helped them to attract and retain talent.

2.2 Employee Happiness Have an Impact on Productivity (Clement S. Bellet Erasmus University Rotterdam

Jan-Emmanuel De Neve University of Oxford George Ward, 2017)

Quasi-Experimental Evidence on the Relationship between Employee Happiness and Productivity in the Field.

We study the universe of call center sales workers at British telecom, one of the United Kingdom's largest private employers. We measure their happiness over a 6-month period using a novel weekly survey instrument and link these reports with highly detailed administrative data on workplace behaviors and various measures of employee performance. We show that workers make around 13% more sales in weeks where they report being happy compared to weeks when they are unhappy. Exploiting exogenous variation in employee happiness arising from weather shocks local to each of the 11 call centers, we document a strong causal effect of happiness on labor productivity. These effects are driven by workers making more calls per hour, adhering more closely to their workflow schedule, and converting more calls into sales when they are happier. No effects are found in our setting of happiness on various measures of high-frequency labor supply such as attendance and break-taking.

2.3 Reduced Work Hours as a means of Slowing Climate Change (David Rosnick, Center for Economic and Policy Research, February 2013)

As productivity grows in high-income, as well as developing countries, social choices will be made as to how much of the productivity gains will be taken in the form of higher consumption levels versus fewer work hours. In the last few decades, for example, western European countries have significantly reduced work hours (through shorter weekly hours and increased vacation time) while the United States has not. Western Europe had about the same hours worked per person as the U.S. in the early 1970s, but by 2005 they were about 50 percent less. This choice between fewer work hours versus increased consumption has significant implications for the rate of climate change.

2.4 Finding Child Care When You Don't Work 9 To 5 (Robin McClure , Sept (2019)

It's hard enough to find quality childcare when you work traditional weekday hours. But according to a 2014 survey by the National Study of Employers, there is a decline in the number of companies awarding flexible work arrangements and more and more employees have to deal with rotating shifts, required overtime, evening hours, and out-of-town travel.1 Finding childcare to cover these non-traditional work schedules, or hours if you work more than one job, can be very difficult for many parents.

2.5 Go Home on Time! Working Long Hours Increases Your Chance Of Having A Stroke (Libby Sander, June 2019)

Australia is in the bottom third of OECD countries when it comes to working long hours, with 13% of us clocking up 50 hours or more a week in paid work. These long hours are bad for our health. A new study from France has found that regularly working long days of ten hours or more increases our risk of having a stroke. Other research has found that employees who work long work hours are likely to have poorer mental health and lower-quality sleep. Long working hours have also been shown to increase likelihood of smoking, excessive drinking, and weight gain. Long hours are bad for our health and effects of regular long work hours on our health are wide-ranging.

2.6 4 Days Results In 'A Healthier, More Loyal, More Engaged Staff' (Michelle Fox, April 2019)

If you want a more productive employee, give them a paid day off from work every week. That's the philosophy of Andrew Barnes, founder of the New Zealand Company Perpetual Garden. He tried the experiment last year, and the results made both Barnes and his employees happy. Now his workers enjoy a permanent four-day work week. This is all about working smarter, not working longer," We have this perception that you've got to work five days a week, 9-5. What we are really talking about is changing how people are behaving when they are at the office. In other words, less goofing off and more focusing on work. The idea is that employees give the company 100% productivity. They still get 100% of their salary, but only work 80% of the standard hours.

2.7 6-Hour Workday (Steve Glavesk, Harvard Business Review, December 11, 2018)

The eight-hour workday harkens back to 19-century socialism. When there was no upper limit to the hours that organizations could demand of factory workers, and the industrial revolution saw children as young as six-years-old working the coal mines, American labor unions fought hard to instill a 40-hour work week, eventually ratifying it as part of the Fair Labor Standards Act of 1938. So much has changed since then. The internet fundamentally changed the way we live, work, and play, and the nature of work itself has transitioned in large part from algorithmic tasks to heuristic ones that require critical thinking, problem-solving, and creativity.

RESEARCH MEHTODOLOGY

(i) Purpose of Research

4-day work week had a positive impact on various U.S companies, it enabled a better work-life balance to improve productivity and creativity in employees, still client deliverables are top priority for the company.

Despite the widespread enthusiasm for a four-day week, it is not convincing enough for India that such a schedule is beneficial for employees or businesses.

The Study is about analyzing and assessing if 4 days 'work week culture is feasible, and can it be the next big thing in INDIA?

(ii) Research Objective

- ✓ To study if India is willing to adopt 4 days a week work culture.
- ✓ Is 4 days' work week a gender biased choice
- ✓ To Identify which industry sector is most open to 4 days workweek
- ✓ Will 4 days' workweek increase productivity & Quality at work
- ✓ To identify opportunities and challenges in deploying 4 days' work week culture in India.

(iii) Hypothesis Framing

- Ho1: Gender and 4days' work week are independent
- Ho2: Marital Status and 4days' work week are independent
- Ho3: Married People with children and 4days' work week are independent
- Ho4: preference to do overtime is same among male and female
- Ho5: Preference to compensate more hours among male and female Is same

(iv) Research Design

This research is conducted using Descriptive, Exploratory & Qualitative approach.

Target audience which aims at exploring their experiences and preference towards 4 days' work week culture. The research design used to this research is the 'Survey' methodology, where the users were asked to answer a list of questions that are relevant towards their current work condition, work life balance etc.

The aim is to discover the feasibility & adoption of 4 days work week in Indian organization considering various other parameters.

(v) Limitations

The research is limited to the individual awareness, perception & experience about 4 days' work culture. Also, the survey respondents will be relevant but limited.

(vi) Data Collection

For any research, data - amount of data and relevance of data, is of prime importance for the success of the research. It is also essential to have the right data and the correct amount of data for analyzing and drawing inferences from the same.

For the purpose of this research, the data will be collected from the below mentioned two sources 1) Primary Data Sources and 2) Secondary Data Sources.

- **Primary Data**

Primary data for research was collected through Survey. Comprehensive and structured questionnaire was designed for the purpose of understanding the factors that should be considered to have 4 days work culture in India

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- **Sample size:**

  For the present study 556 respondents were selected.

- **Sampling technique:**

  Snowball sampling technique was used.

- **Sample Area:**

  Working professionals (Mumbai Region)

- **TOOLS AND TECHNIQUES**

- **Survey Questionnaire Method**

A Questionnaire of 10 Questions was prepared for which appropriate options were made available for respondents to select from. The questionnaire was created with the help of Google Docs which was in a format of Electronic Survey Form. It was easy to send the form via mail to n number of users. Apart from this the Questionnaire was easily uploaded on various social networking sites.

- **Secondary Data**

  These are second hand readily available data collected by some other agency but not by the researcher. Source could be internal or external records.

- **Sources of Secondary Data**

  Journals, Internet, Newspaper, Articles and Reports

HYPOTHESIS TESTING

1st Chi Square Test

Null Hypothesis: Gender and 4days' work week are independent

Alternate Hypothesis: Gender and 4 days' work week are dependent

Table RT: 1

Gender * Preference 4 days' Work week Crosstabulation						
			Preference 4 days' work week			Total
			Maybe	No	Yes	
Gender	Female	Count	27	82	195	304
		Expected Count	25.2	93.5	185.4	304.0
	Male	Count	19	89	144	252
		Expected Count	20.8	77.5	153.6	252.0
Total		Count	46	171	339	556
		Expected Count	46.0	171.0	339.0	556.0

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.527[a]	2	.104
Likelihood Ratio	4.516	2	.105
N of Valid Cases	556		

Level of significance 0.05 P Value - 0.104001184

Interpretation: As the level of significance 0.104 which is greater than the benchmark i.e. 0.05 hence, we accept the null hypothesis, thus we can conclude that there is no relationship between Gender and 4 days' work week preference

2nd Chi Square Test

Null Hypothesis: Marital Status and 4days' work week are independent

Alternate Hypothesis: Marital Status and 4 days' work week are dependent

Table RT: 2

Marital Status* Choose for Workday culture Crosstabulation							
			Choose for Workday culture				Total
			4 Days	40-45 Hours	5 Days	6 Days	
	Married	Count	87	41	26	19	173

Marital Status		Expected Count	80.9	46.1	30.8	15.2	173.0
	Single	Count	173	107	73	30	383
		Expected Count	179.1	101.9	68.2	33.8	383.0
Total		Count	260	148	99	49	556
		Expected Count	260.0	148.0	99.0	49.0	556.0

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.901[a]	3	.272
Likelihood Ratio	3.893	3	.273
N of Valid Cases	556		

Null Hypothesis: Marital Status and 4days' work week are independent
Alternate Hypothesis: Marital Status and 4 days' work week are dependent

Interpretation: As the p value > 0.05 which 0.272 hence, we accept null hypothesis, thus we can conclude that there is no relationship between marital status and 4 days' work week preference

3rd Chi Square Test

Null Hypothesis: Married People with children and 4days' work week are independent

Alternate Hypothesis: Married People with children and 4days' work week are dependent

Table RT: 3

VAR00001 * VAR00002 Crosstabulation							
			VAR00002				**Total**
			.00	4.00	5.00	6.00	
VAR00001		Count	1	0	0	0	**1**
		Expected Count	.3	.5	.2	.1	**1.0**
	No	Count	127	253	94	48	**522**
		Expected Count	138.9	244.1	92.9	46.0	**522.0**
	Yes	Count	20	7	5	1	**33**
		Expected Count	8.8	15.4	5.9	2.9	**33.0**

Total	Count	148	260	99	49	**556**
	Expected Count	**148.0**	**260.0**	**99.0**	**49.0**	**556.0**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.518[a]	6	.000
Likelihood Ratio	22.218	6	.001
N of Valid Cases	556		
a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .09.			

Null Hypothesis: Married People with children and 4days' work week are independent

Alternate Hypothesis: Married People with children and 4days' work week are dependent

Interpretation: As the p value < 0.05 which 0.01 hence, we accept alternate hypothesis, thus we can conclude that there is relationship between Married People with children and 4 days' work week preference

4th T - Test

H0: preference to do overtime is same among male and female

H1: preference to do overtime is significantly different from male and female

Table RT: 4

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
VAR	Equal variances assumed	5.036	.025	7.548	554	.000	.49990	.06623	.36981	.62998

00001										
	Equal variances not assumed			7.224	394.924	.000	.49990	.06920	.36386	.63594

Interpretation: Since $p < .001$ is less than our chosen significance level $\alpha = 0.05$, we can reject the null hypothesis, and conclude that the that the preference to do overtime is significantly different among male and female

5th T – Test

H0: preference to compensate more hours is same among male and female

H1: preference to compensate more hours is significantly different from male and female

Table RT: 5

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence nterval of the Difference	
									Lower	Upper
VAR00001	Equal variances assumed	11.646	.001	3.204	554	.001	.34096	.10643	.13190	.55002
	Equal variances not assumed			3.246	552.879	.001	.34096	.10503	.13466	.54726

Interpretation: Since $p < .001$ is less than our chosen significance level $\alpha = 0.05$, we can reject the null hypothesis, and conclude that that the preference to compensate more hours is significantly different among male and female

RESEARCH FINDINGS

- Out of our total 556 respondents, 54.7% were female and 45.3% were male. Therefore, responses received by the survey aren't inclined or gender biased opinions.
- 46.7% respondents' states that they will prefer 4 days culture over their current work week. Out of which 32.19% are female & 14.5% are male, Female Participants are more willing to adopt 4 days' work week culture in India.
- On the other hand, 26.6% respondents expressed that they would prefer 40-45 hours flexible timings irrespective of number of days. Among which 9.7% are female & 17% are male respondents.
- 17.8% and 8.8% out of total 556 respondents prefer to stick by 5 days & 6 days' work week respectively.
- 23.9% of the total respondents who are in favor of 4-day work week belong to the age group 25-34 years and 13.3% are from age group 20-24. Rest 9.5% belong to age group 35 to 54.
- Wherein 19.4% of the millennials also stated that they will prefer working flexible hours irrespective of number of days.
- Of the total respondents, 68.9% are single and 31.1% are married
- Out of the total married respondents- 50.2% are open to work 4 days a week. Wherein 45.1% single respondents to express that they will opt for shorter working week culture.
- Respondents are also willing to have flexible hour work week culture with 27.9% Single and 23.6% married respondents preferring Flexible hours over 4 days or traditional work week.
- 26.01% of the total married and 26.8% of total single survey participants are happy with their current 5 days & 6 days' workweek culture and would prefer working the same.
- 60 % of total Married respondents with children prefer Flexible work week rather than 4 days working week with elongated working hours. Only 20% of the total respondents are willing to opt for 4 days work week with 10-12 hours each day working.
- Majority of our respondents belong to 4 industries i.e.: 40.8% of our survey respondent are form Marketing & Sales Industry, IT forms the second highest with 28.2% Respondents, 20.1% Participants are from Banking & Finance, 4.3% are from Human Resources and other respondents belong to industries like Media, Manufacturing, Customer Service, E-commerce, Engineering etc.
- Out of total respondents belonging to Marketing & Sales industry 70% states that 4days work week is feasible or their organization wherein 28% disagree to the same.
- 41.8 % IT professionals says that 4 days' work week it is feasible for their current organization. Wherein 28.1% yet believe it is not feasible to have 4 days culture for IT industry.
- Banking & Finance is most open to 4 days culture with 81% stating that it is feasible to deploy shorter work week & just 13% disagreeing with it. Rest 6% are unsure if it will be feasible or not for industry.
- 54.1% Human Resources Professionals agree that shorter week can be the next big thing for their organization wherein 33.33% yet disagree for the future and feasibility of 4 days culture for HR Industry.

- Though the statistic suggest that it is feasible for most of the major industries to deploy 4 days' work week, 48.6% Banking & Finance professional wish to have 4 days culture while 37.8% are still in favor of 5 days' work week.
- 59% marketing & sales professional choose 4 days' work week while 70.8% HR professionals have chosen flexible Work week culture over 4 days' work week.
- 33% IT industry respondents choose 4 days' work week and 35% choose to work 40-45 hour a week irrespective of days.
- Medical & Healthcare industry is not in favor of 4 days' work week with 89% respondents choosing traditional work week culture with 8-9 hours shifts.
- 47.5% Employee choose 4 days and 25.3% choose 40-45 days per week irrespective of days as a preferred work culture. On the other hand,5 out of every 10 Employers are preferring Flexible work culture over 4 days or traditional work week.
- 62.5% of the respondents are working in shifts and 37.23% do not have work shifts at their current organization.
- 66% of the total respondent are well aware of 4 days' work week culture & its implications while considering the fact that 34% are yet not aware of the new shorter week culture with longer working hours.
- Majority of the respondents agree that 4 days' work week will increase productivity and promote engaged & Joyous workplace but at the same time it will have adverse impact on health.
- At the same time 9% (51) & 24.4% (136) expressed that it will hamper work coordination. On the other hand, around 28.23% believe 4 days' work week will not affect the work coordination
- Respondents are unsure if there is going to be any downfall or negative impact of shorter work week on salary package of professional
- 50% of the total respondents who do not have flexible working hours at office states that they will choose to opt for 4 days with 10-12 hours working each day.
- 55% of the total respondents who do not have work from home facility states that they would prefer 4 days' work week wherein people with WFH choose Flexible Work Week
- 82.7% respondents' states that they will choose 4 days culture so they can spend more time for self & family followed by 75.7% opt 4 days to they can spend more time on social & engagement activities.74.6% will choose 4 days in order to reduce commuting time & cost
- 60% of the total respondent from various industry believe that adopting 4 days' work culture for their respective industry is feasible

RECOMMENDATIONS

- **Mindset:**

- India moves towards more organized employment, some of the basic characteristics of having a job in India must change before the country at large, can debate the possibility of a four-day week.
  The implementation will require a 'social change' across hierarchies including the top management
- The competitive gene in the Indian mindset may cause this system to collapse unless we define clear ways to implement the four days' work week and alter the orthodox mindset of managers who may tend to measure performance in quantity rather than efficiency

- Give employees plenty of time to think about how they can work differently and encourage them to come up with their own measure of productivity

- **Trail:**

- Begin with a trial and engage outside consultants/academics to evaluate qualitative and quantitative measures of success
- Be clear that the aim of the initiative is to improve things not just in the context of the company but also as regards the wider social obligations
- Establish clear personal and team business goals and objectives
- 4 days' work week need not always to be deployed for entire organization but can focus on few departments initially
- Consider introducing an opt-in policy for employees/departments on an annualized basis. An opt-in form can keep track of an employee's productivity measures and roster information, as well as linking it to company values
- Startups can offer employees a consolidated workweek choice to attract talent pool from market with longer weekends as a attraction
- Organization should have facility like creche for Married women with children so the problem of finding childcare or days Centre with extended work hours can be solved.

- **Reskilling**

  There are multiple parameters to enhance productivity along with the four-day week such as upskilling employees, strong performance incentive policies.

- **Time Management**

- **End Long Meeting -** Indian offices are infamous for endless meetings that eat into the time for action.
  When you have less time to work each week, you're more mindful of how you utilize it with work colleagues and personal relationships. This will lead to shorter, and better run meetings at the workplace.
- **Commuting Time-** The commute time is the biggest buzzkill there is in India. An average Indian officegoer spend over two hours in commute every day. If this itself is brought down by a day, the levels of motivation will increase. Employees may even be willing to put in additional hours in 4 days rather than travel the additional day.
- **Remote Working-** Allow people to work remotely whenever possible. In recent years, flexible work timings, remote work options have been the top priorities of the Indian workforce, while considering a job opportunity.
  Avoid F2F meeting and promote remote calls & meetings to save time and utilize for more productivity at work.

CONCLUSION

Four-day work week idea will be good for Indians — but there is a lot to be fixed before that. However, our study showed that majority of Indians feel that 6 days is obsolete ,5 days is outdated and are willing to adopt 4 days' work week but we also cant negate the fact that many Indians still choose to work five days a week, even if they are paid equally for working four days as Indians feel the most pressure to extend their work hours to grow professional.

Banking & Finance and Marketing & Sales industries are most open to Longer weekend work culture on the other hand Medical & Health care along with IT professionals are skeptical about feasibility and implementation of 4 days culture for their industries with elongated working hours which may lead to fatigue, stress and mental breakdowns and

demand to deliver same results in lesser time may in force work pressure. Industries with 24*7 services may face overlapping of shifts issues which needs to be resolved. A drastic shift in Mindset of Management is required for measuring performance and productivity in term of outcome and not working days or working hours of an individual.

4 days' work week offer more time for individual to self-development and other productivities. Majority Indians states that, time for family and self and saving commuting time is major reason for them to opt for it. The idea of 1 day less at work will result in change in work dynamic, happier and engaged workforce and potential higher productivity at workplace.

Given the existing gaps, it may be a while before warms up to the idea of a four-day work week.

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A Study on the Impact of Employee Engagement Practices on Employee Productivity

Shwetali Dhamapurkar

ABSTRACT

Employee engagement is the burning topic for any company during the globalized era. It is a workplace approach resulting in the right conditions for all members of an organisation to give of their best each day. It is more than just a measurement of how content employees are with their job, department, company, income, or benefits. It is their level of emotional connection, involvement and commitment to their organization. Engaged employees are inclined to contribute more of organizational productivity. It also supports in maintaining a higher level of commitment. The purpose of this research was to find out the top-rated employee engagement activities that have an impact on productivity of the employees. Data was collected from various publications, websites & primary research. This paper gave us a brief on the various aspects considered in the study namely employee engagement, employee engagement practices and their impact on employees, productivity and drivers of productivity. This provided us with the psychology behind adopting employee engagement practices that specifically lead to enhanced employee productivity.

Keywords: Employees, employee engagement, employee engagement practices, productivity, employee productivity, productivity drivers.

LITERATURE REVIEW

Over the past decade, many authors have written on the topic 'Employee Engagement'. **Kahn** (1990) was the first to coin the term engagement as he described how people can "use varying degrees of their selves – physically, cognitively and emotionally in work role performances" [1].

According to **Kevin Kruse**, employee engagement is the emotional commitment the employee has to the organization & its goals. It is the level of enthusiasm & dedication an employee feels toward his or her job.

An "**engaged employee**" is one who is fully absorbed by and enthusiastic about their work and so takes positive action to further the organization's reputation and interests. To these engaged employees, it is far more than a pay cheque – it is the eagerness towards their task that makes them passionate in their work, and this passion is often reflected in their individual outcomes.

They care about their company & their work. They have sense of belongingness toward the company & their work. They tend to go an extra mile for the company without being asked or wanting recognition or credit for it. They often establish a common responsibility for themselves to the roles they took up. At the same time, they do want to feel appreciated by the company.

BENEFITS OF HAVING ENGAGED EMPLOYEES

The importance of improving employee engagement & happiness cannot be emphasized enough. Engaged employees will always be more productive & efficient than those who are engaged & average employee. The various benefits that come along with engaged employees are listed below:

1. Higher Employee Satisfaction

When employees are engaged at work & feel satisfied with their position, they tend to be enthusiastic about their day to day work & the growth of the company at large. They feel a greater connection to the company & are therefore more likely to produce quality work, which benefits the company as well as the customer [1].

2. Higher Retention and Lower Turnover

The hiring and onboarding process for new employees is very expensive and time-consuming. According to a 2017 report by Gallup 51% of the workers are looking to leave their current jobs. Having engaged employee's helps to retain your top employees & decrease your turnover rates by ensuring that your team is happy [1].

3. Commitment & Motivation

High levels of engagement at work support employees in 'taking initiative and pursuing learning. Individual level engagement is too complex to be able to reliably explain much performance & that engagement surveys measure the symptoms of performance rather than the causes. By providing incentive plans the employees are motivate towards the increase in productivity.

4. Employee Performance

Engagement affects employee performance. 'Engaged employees work harder, are more loyal & are more likely to go the 'extra mile' for the corporation. Engagement is an 'illusive force' that motivates an individual to achieve higher levels of performance.

5. Higher Productivity

Engaged employees work faster, harder & stronger because they like what they do. It's a no-brainer; when you're interested in & connected to what you're doing, you are more likely to do it well. According to a 2017 report by Gallup, engaged employees are 17% more productive. [2].

6. Increased Employee Loyalty

A huge benefit of having engaged employees is that they are loyal to your company & therefore act as company ambassadors [2].

7. Increased Customer Loyalty & Customer Engagement

Engaged employees tend to have a better understanding of how to meet customer needs & as a result, customer loyalty tends to be better in organisations where the employees are engaged. Ultimately, this may lead to what is sometimes termed 'customer engagement', where there is a mental & emotional connection between the organisation & the customer.

8. Increased Profitability

When your employees feel good at work, they work harder, & when they work harder, they produce more quality work which in the end points to a happy customer. Happy customers keep coming back & they refer other people to your company.

It's such a simple way to increase your company's profitability but so many organizations keep looking outward instead of turning inward. Without a solid foundation, no company can thrive & the best way to ensure this sturdy base is to have an engaged team [2].

EMPLOYEE ENGAGEMENT PRACTICES

There are some critical employee engagement practices, which are common to all types of organizations. These practices bring some critical factors that are to be considered carefully. These factors create a feeling of valued & involved among the employees. The practices & factors which influence employee engagement are:

1. Recruitment & Selection

Organizations enhance their engagement while recruiting employees for desirable jobs by maximizing the person-job fit & commitment by providing growth & advancement opportunities to employees in return for their loyalty [A].

2. Job Designing

Designing jobs encompassing challenge, variety & autonomy are more likely to provide psychological meaningfulness to employees & thereby affecting their level of engagement [A].

3. Communication

The organization should follow the open-door policy. There should be both upward & downward communication with the use of appropriate communication channels in the organization. If the employee is given a say in the decision making & has the right to be heard by his boss. Then the engagement levels are likely to be high [A].

4. Incentives and Compensation

Compensation is said to have a major influence on the employees' conceptions of their employment relationship. Compensation consists of financial elements but may also include nonfinancial elements or perks, such as on-site day care, employee assistance programs, subsidized cafeterias, travel discounts, company picnics & so on. The organization should have a proper compensation management system so that the employees are motivated to work in the organization [A].

5. Great Perks and Benefits

Offering your employees fun & helpful perks & benefits lets them know that you appreciate their efforts & hard work. It also makes work a more enjoyable place to come to, which will help keeps employees engaged. **Some of the ways you can offer simple benefits are:**

1. **Sufficient vacations**
2. **Gym membership**
3. **Healthy lunches**
4. **Remote work**

6. Career Development Opportunities

Organizations must provide employees with opportunities to develop their abilities, learn new skills, acquire new knowledge & realize their potential. Career development influences engagement for employees & retaining the most talented employees & providing opportunities for personal development [A].

7. Leadership

Employees need to feel that the core values for which their companies stand are unambiguous & clear. Successful organizations show respect for each employee's qualities & contribution

regardless of their job level. A company's ethical standards also lead to engagement of an individual.[3]

8. Empowerment

The leaders of high engagement workplaces create a trustful & challenging environment, in which employees are encouraged to give input & innovative ideas to move the organization forward [A].

9. Training and Development

Redundancy of skills has been cited as one of the reasons for employee turnover, thereby indicating the necessity for training, re-training & multi-skill training. Training will help new & current employees acquire the knowledge & skills they need to perform their jobs [A].

10. Give Frequent Feedback

One of the most important ways to engage your employees is to constantly communicate with them. They want to improve, so offering them frequent feedback on their work, & that includes constructive criticism, is greatly appreciated. Offering solely annual performance reviews is problematic. They don't allow for constant progression, & it will only instils fear in your employees, which ultimately disengages them. Monthly one-on-ones & frequent check-ins are the best way to keep employees interested, motivated & engaged.

11. Constant Recognition

It's extremely important to build a culture of employee recognition & offer praise to your team. When employees feel valued, recognized & appreciated for their hard work, they want to continue to do a good job for their company.

12. Being Social

Organize & encourage social gatherings for your employees. When you build relationships among people, you'll see productivity increase.

Employee Productivity

Productivity is defined as the ratio between outputs to input. Employee productivity is a metric that is calculated based on the amount of output of an employee on a project versus the amount of time s/he takes. It can also be evaluated in terms of the output of an employee in a specific period of time.

Typically, the productivity of a given worker will be assessed relative to an average for employees doing similar work [3]. Because most of the success of any organization relies upon the productivity of its workforce; the more productive they are, the more value they produce for their employers.

Drivers for Improving Employee Productivity

Employee productivity is vital to your business's success. Increasing employee productivity requires business owners to motivate, inspire & engage their workers. It's an employer's job to create a positive work environment that encourages high levels of productivity. Driving productivity gains isn't necessarily simple.

A literature review conducted from 1996 to 2013 to get the drivers of productivity. The literature review gives the details about:

1) Researcher
2) Theme of their research

3) The Drivers of Productivity identified by them in their research

The identified attributes are summarized in table 1.

Table 1: Drivers of Productivity [B]

Sr. No.	Researcher	Theme	Drivers of Productivity
1.	Kinni (1996)	To explore the factors of world class manufacturing (WCM) in Egypt	1. Customer focus 2. Quality 3. Agility 4. Employee involvement 5. Supply management 6. Technology 7. Product development 8. Environmental responsibility 9. Employee safety 10. Corporate citizenship
2.	Regan et al. (2005)	To explore the drivers of high growth in SMEs	1. Innovation 2. Ownership 3. Organizational capacity and capabilities 4. Strategic orientation 5. Operating environment 6. E-Commerce
3.	DTI-UK, Department of trade and industry (2006)	Study of productivity drivers of UK manufacturing sector	1. Investment 2. Innovation 3. Skills 4. Enterprise 5. Competition
4.	Ministry of Business, New Zealand (2013)	To find out factors driving productivity	1. Building leadership and management capability 2. Creating productive workplace cultures 3. Encouraging Innovation and the use of technology 4. Investing in people and Skills 5. Organizing work 6. Networking 7. Measuring what matters

Here are some key drivers to productivity, discussed in detail:

1. Clear Expectations About Work Deliverables

When work expectations are effectively communicated & explained to employees, they understand what exactly needs to be done in order to attain them. In this way employees can be inspired to pursue opportunities that contribute to the growth & development of business [4].

2. Culture that Focuses on Productivity

A company's culture is made up of a variety of elements, including work environment, company vision, ethics, & goals. Research published in the *IOSR Journal of Business and Management* found that cultures that emphasize relationship building & rewarding teamwork contribute to employee productivity, while companies that focus on hierarchies & individual success derail productivity. Building a culture that focusses & promotes these aspects facilitates an organisation to emphasize on productive work practices. [4].

3. Providing Employees with the Right Technology & Resources

Workers find not having the right tools for the job frustrating. According to a Global Engagement study 2018, only 44% of employees believe that their company provides them with the technology needed to effectively perform in their role.[7] According to a Randstad 2018 report, technology tops the list of what fulfils employees' basic needs: a work computer/laptop/device (75%); fast internet & Wi-Fi (68%); office space/cubicle space (55%); & air conditioning & heating (47%).[8] Providing your employees with the technology & resources they need to succeed is a great first step in increasing employee productivity.

4. Investing in your People

The more skills your staff has, the more they're able to contribute to your business. Providing your employees with adequate training can lead to further development & future operational success. It can also give them the confidence they need to effectively complete a project or even certain daily tasks [4].

5. Cross-Training and Development

For small businesses who have a reputation of employees wearing many hats, increasing employee productivity is easier when employees are cross-trained to perform within a variety of positions. Equipping employees with a diverse set of skills strengthens their engagement & can decrease the chances of employee turnover. Also having employees who can quickly step into different roles can help one avoid productivity gaps in the event that an employee leaves the company.

6. Effective Communication with Management

Managers who are accessible to their employees & effectively communicate expectations & responsibilities can more easily create a shared business. This approach helps with increasing employee productivity, as employees feel directly connected to the organization's mission & goals. Ultimately, better communication can foster efficiency & increase job satisfaction [5].

7. Consistent Feedback

Almost every employee long for a feedback, be it positive or negative. Feedback enables employees to feel appreciated, understand what they are doing great, what needs improvement & ultimately reach their full potential. A consistent feedback helps employees to learn & growth throughout the year & not only after the once in a year appraisal.

8. Offering Flexible Hours

Not everyone is designed for the typical 9 to 5 work hours. Allow people to come in early or stay later so that they are able to work when they are the most productive.

9. Empowering Your Employees

Don't micromanage teams. Give each team the power to make decisions by themselves. This instils more accountability & responsibility thus making employees go an extra mile to difference; were more likely to stay on-board.**Impact of Employee Engagement on Productivity**

Here's how employee engagement can have a positive impact on your business.

1. Satisfied and Happy Employees

Engaged employees are more satisfied with their jobs than the others. Focusing on employee engagement helps you create a positive workplace culture that drives organizational success. When employees are satisfied with their job responsibilities, they put extra effort into what they are doing & improve their overall performance [6].

2. Improved Customer Experience

A customer-centric approach always adds value to an organization. Focusing on employee engagement helps you fill the gap between how the company treats its employees & how the employees are expected to treat their customers. Engaged employees tend to be happier & thus tend to provide a better customer experience. When the customers are happy with the service provided to them it eventually leads to the success of your business [6].

3. Innovative Work-approach

Repetitive tasks lead to disengagement & loss of interest in employees. When you focus on employee engagement & design a challenging workflow for your employees, the way of approaching their workplace goals changes. Employees tend to use a more innovative approach to achieve their goals [6].

4. Better Employee Retention & Talent Acquisition

According to Gallup, organizations with highest performers have three things going for them:

i. They have tenures of a decade or more in their organizations.
ii. They are engaged in their work.
iii. They are in roles where the expectations of the job align well their innate talents. Each variable affects outcomes on its own, but the highest performance comes from the combination.

When your organization focuses on employee engagement & satisfaction, it not only attracts quality talent for your company but also helps you retain your existing employees better [6].

5. Increased Employee Productivity

Employee productivity is important to any business. The more productive your employees are, the more successful you'll be as a business. According to Gallup, highly engaged teams are 21% more productive & have 28% less internal theft than those with low engagement. Engaged employees are innovative. Their quality of being collaborative & enthusiastic towards work, allows them to complete their workplace goals more effectively; which leads to increased workplace productivity [6]

PRIMARY RESEARCH

Methodology

At the start of this project, we were introduced to various types of methodologies which can be used to research our topic. The four broad alternatives were surveys, questionnaires, interviews & case studies. The purpose of this study is to understand & analyse the impact of employee engagement practices on employee productivity. With this purpose, the combined qualitative & quantitative research findings will be generating detailed analysis. Hence, we finalized to conduct

a primary research using questionnaire. The tool used for making the questionnaire & collecting data is Google Forms. The questionnaire consists of questions that give details of the demographics of the respondents which will help us to evaluate the respondents on various aspects & the questions which give us insights into the topic of consideration.
We have also supported our research project with various secondary research data over readings of various articles, research papers on the similar domain topics like employee engagement, employee engagement practices & techniques, productivity in employees, the drivers of productivity, etc.

Purpose:
To find out which employee engagement activities have an impact on productivity of the employees

Respondent Definition:
For respondent short listing & selection following are the parameters considered:

- Working professionals
- From diverse industries
- Various age groups ranging from 20-50+
- Having experience upto 20+ years
- HR as well as Non-HR professionals to avoid the biasness of policy maker & the one who utilizes the policy

Sample Size: 30
Primary Research Tool - The Questionnaire

Topic: A Study of the Impact of Employee Engagement Practices on Their Productivity

1. **Name**
2. **Age**
    - 20-25
    - 26-35
    - 36-50
    - 50+
3. **Work Experience (in years):**
    - 0-5
    - 6-10
    - 11-20
    - 20+
4. **Company size (employees):**
    - <100
    - 101-500
    - 501-1000
    - 1000+

5. **Location**:
    - Mumbai
    - Pune
    - Ahmedabad
    - Others
6. **Industry**:
    - IT/ telecommunications
    - Manufacturing
    - Financial Services
    - Energy/Utilities
    - Healthcare
    - Education
    - Others
7. **Management Level :**
    - Junior level management
    - Middle level management
    - Top level management
    - Other
8. **Profile**
    - HR
    - Non- HR
9. **Does Your Company Invest in Employee Engagement activities?**
    - Yes
    - No
    - May Be

10. **What Is the State of Employee Engagement Initiatives carried out in your organisation?**

	Already Implemented	Not Implemented	Plan to Implement in the Future	No Plans to Implement	Do Not Know
Onboarding					
Proper Communication w.r.t. Work/ Clarity about expectations of Work Deliverables					
Leadership with Clearly Defined Goals					
Enabling Infrastructure (Tools, Resources, Processes)					

Peer Culture					
Team Collaboration					
Team Commitment for Quality Output					
Empowerment/Autonomy					
Wellness (Activities for Physical & Mental wellbeing)					
Employee Recognition					
Performance Management					
Training and Development					
Career Development Opportunities					
Employee Feedback					

11. In your opinion to what extent the below listed Employee Engagement Initiatives have an impact on Employee Productivity:

Activity	Low impact	Medium impact	High impact
Onboarding			
Clarity about expectations of work deliverables			
Leadership with Clearly Defined Goals			
Enabling Infrastructure (Tools, Resources, Processes)			
Peer Culture			
Team Collaboration			
Team Commitment for Quality Output			
Empowerment/Autonomy			
Wellness (Activities for Physical & Mental wellbeing)			
Employee Recognition			
Performance Management			
Training and Development			

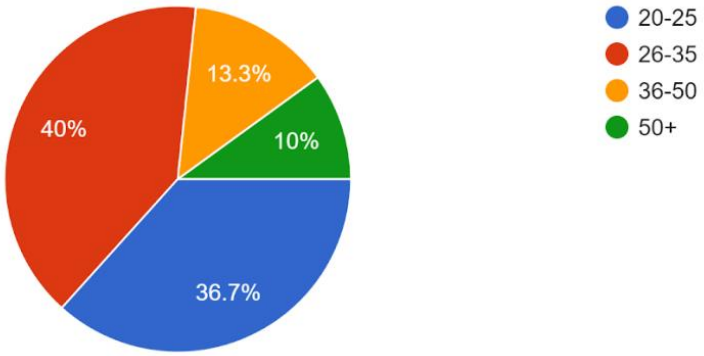
Career Development Opportunities			
Employee Feedback			

12. In your opinion please rate the degree to which the above mentioned employee engagement activities have an impact on outcome produced on the various aspects listed below:

Activity	Low degree	Medium degree	High degree
Employee Happiness			
Employee Satisfaction			
Belongingness			
Motivation			
Customer Service			
Employee Retention			
Talent Acquisition			
Leadership			
Empowerment			
Enhanced Productivity			
Ability To Innovate			
Continuous Learning			
Willingness To Go An Extra Mile			
Enjoyment Of Work			
Positive Word of Mouth			
Healthy Organisational Culture			

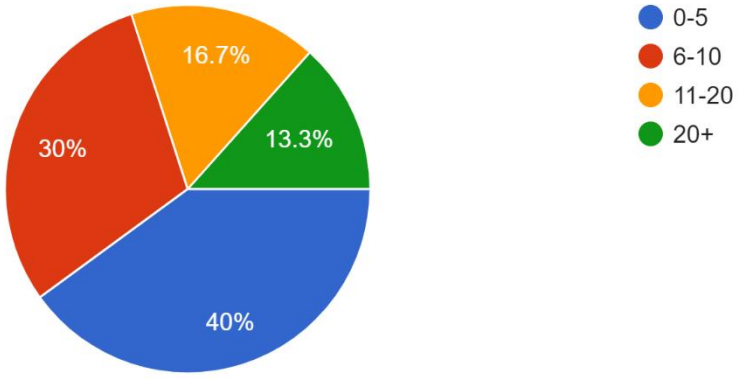
DATA ANALYSIS

Age (in years) Analysis:



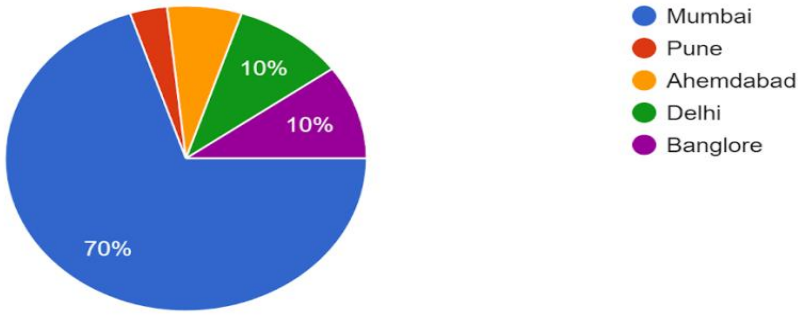
- A genuine attempt was made to collect responses from people belonging to different age groups.
- Maximum respondents belong from the age bracket of **26-35 years** followed by **20-25 years**.

Work Experience (in years) Analysis:



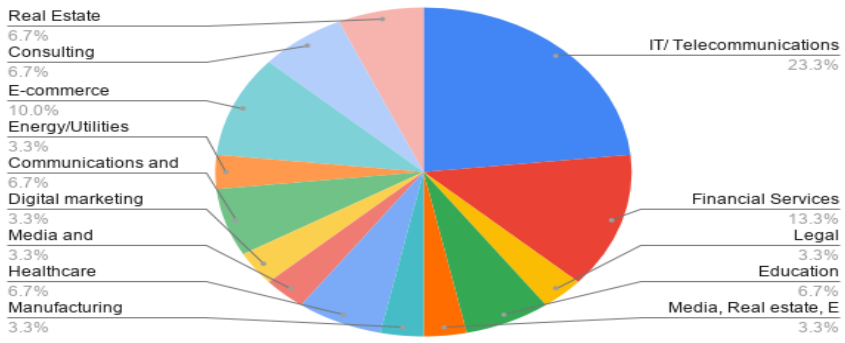
- A maximum of respondents had a work experience ranging from **0-5 years** followed by **6-10 years** bracket.
- **13.3%** of the respondents have an experience of over **20+ years**; this provides the survey opinions from seasoned industry professionals.

Location Analysis:



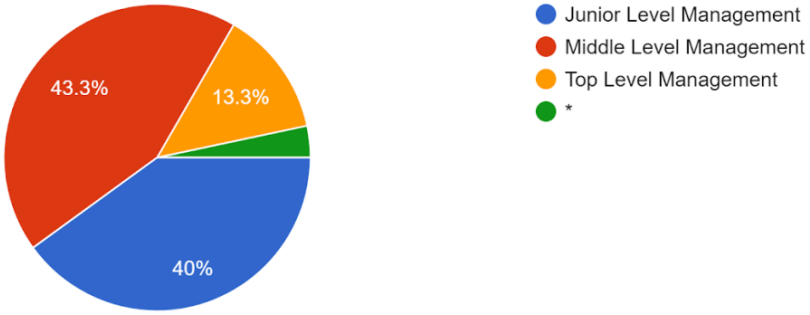
- A sincere attempt was made to tap working professionals from Tier 1 cities from different geographies of India.
- A maximum of **70%** the respondents are from the city of **Mumbai**.

Industry Analysis:



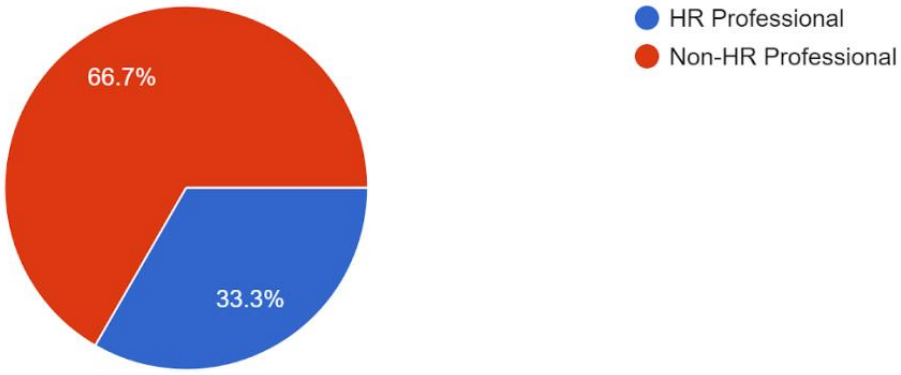
- Received responses from respondents coming from diverse industries namely – IT/ Telecommunications, Manufacturing, media & entertainment, add more etc.
- Thus, various types of industries have been tapped & the research is not limited to any one specific industry.
- The maximum of the respondents is from the **IT/ Telecommunications industry** followed by respondents from **Financial services** profession.

Level of Management



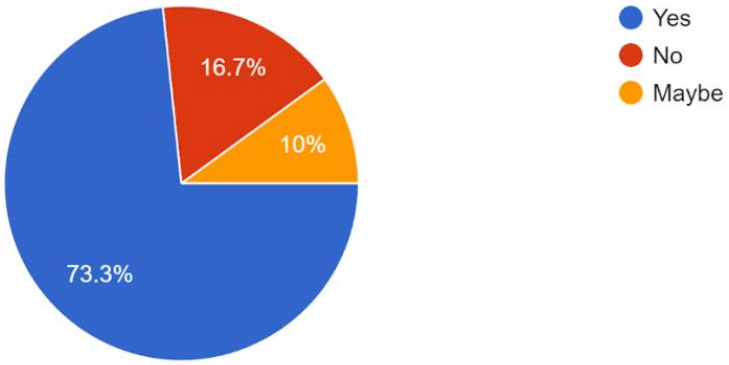
- This question attempts to find out the level of management at which the respondents work. The objective behind this question is to find & showcase the hierarchy at which the respondents work. Also ensures that the right audience has been surveyed.
- A majority of the respondents are working at the **Middle level of management** followed by professionals working in **Junior level of management**.
- We have a small yet a valuable share of professionals working in **Top level management.**
- Thus, we can say that a total of **56.6%** of total respondents comprising of **Top & Middle** level management professionals are bringing more valuable opinions to the study.
- An extremely small part of the respondents belongs from non-management positions.

Profile Analysis:



- In this study we tried to tap both **HR & Non- HR Professionals** to make the study **free from biasness** of policy maker & the one who utilizes the policies.
- **One-third** of the respondents constitute **HR professionals** & **two-thirds** form the **Non-HR professionals**.
- These two-thirds of respondents belong from **diverse professional backgrounds** such as teachers, doctors, engineers, banking & finance professionals, marketers, researchers & lawyers.

Q.1. Does your company invest in Employee Engagement activities?



- This question checks the awareness about the practice of employee engagement activities in their respective organisations.
- Majority of the respondents are aware & very well knowing the status of employee engagement practices in their organisation.
- In some organisations employee engagement activities are not carried out.
- Also, some respondents are not aware of the practice of carrying out employee engagement activities in their organisation or we can even say that they are not aware of the set of activities that are classified as employee engagement activities.

Q.2. What is the State of employee engagement initiatives carried out in your organisation?

The respondents were asked to select a status of employee engagement activities among the 5 options for the listed Employee Engagement Initiatives as mentioned below:

i. Already implemented
ii. Not implemented
iii. Plan to implement in future
iv. No plans to implement in future
v. Don't know

Note: For efficient data analysis Q.2 & Q.3 are analysed simultaneously because of their dependency in analysis on each other.

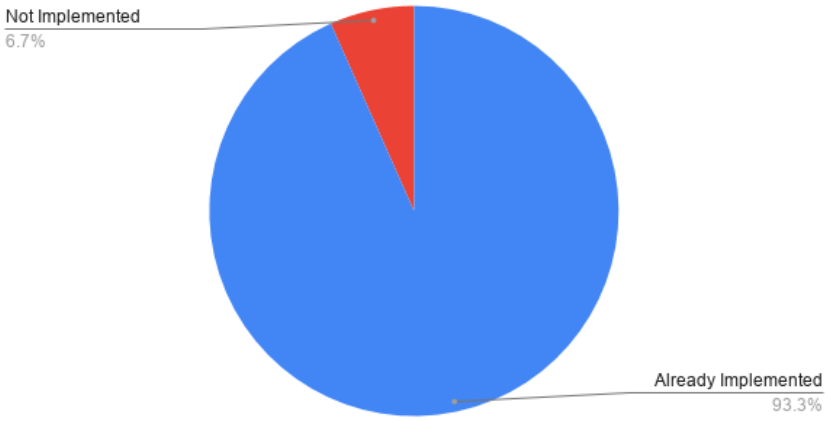
Q.3. In your opinion to what extent the below listed Employee Engagement Initiatives has an impact on Employee Productivity:

The respondents were asked to select an impact quantum among 3 options for the listed Employee Engagement Initiatives as mention below:

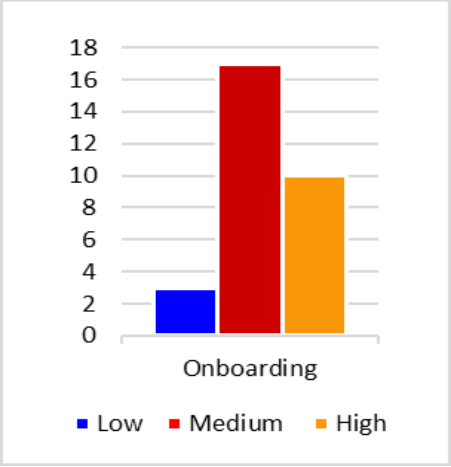
i. Low impact
ii. Medium impact
iii. High impact

The listed Employee Engagement Initiatives and their analysis for Q.2 & Q.3:

1. On-Boarding

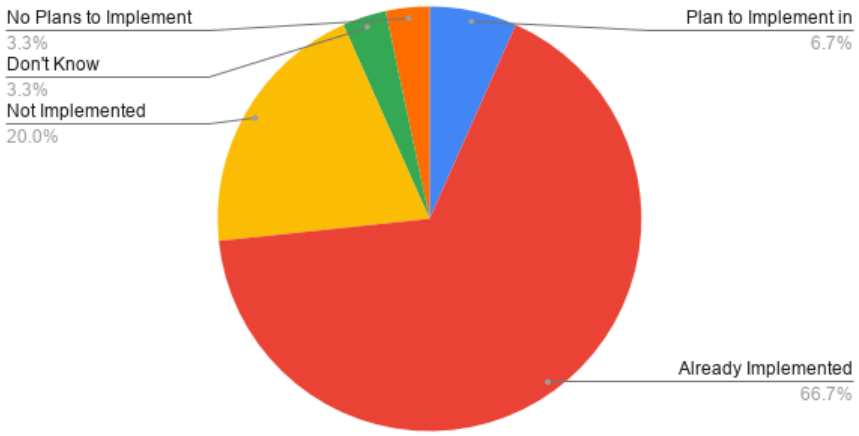


- **Onboarding** refers to the process of orienting new employees in a manner that aids in overall retention. This process focuses on helping employees to become acclimated to their new workplace in a timely fashion & bringing them "on board" with regard to company culture, understanding of job function & overall comfort level.
- As we can see in majority i.e. **93.3%** of companies Onboarding process is **Already Implemented**.
- Only in a small fraction of company it is **Not Implemented.**

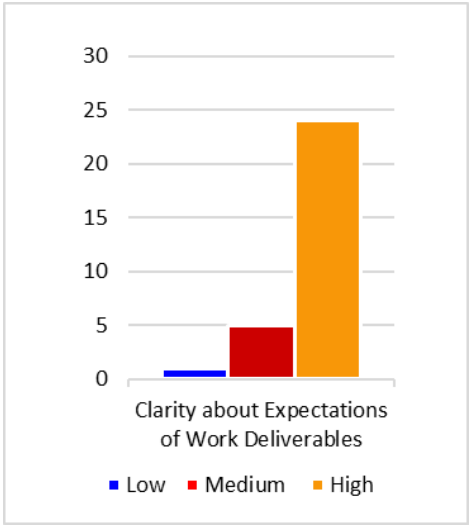


- From the above graph we can see that we have received mixed responses.
- The **majority** of the respondents believe that **Onboarding** process has a **Medium impact** on employee productivity. **One third** believes that it has a **High impact**.
- Thus, we can say that **Onboarding** process is carried out in various industries & it has considerable impact employee productivity.

2. Clarity about expectations of work deliverables

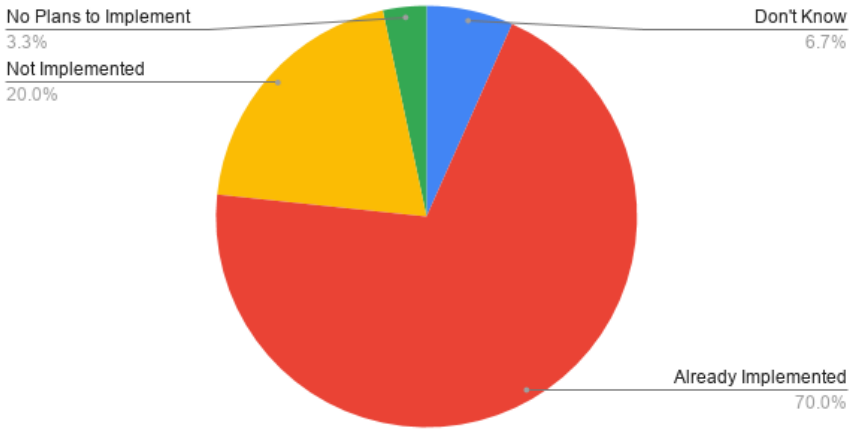


- In **majority** i.e. **67%** of the organisations this aspect is **Already Implemented.**
- Yet in **20%** of the organisations this aspect is **Not Implemented** which is not a healthy practice.
- If the expectation for work deliverables is not known then the completion & delivery of the work will eventually be not up to the mark. This condition will lead to unsatisfied customers & even sale loss.

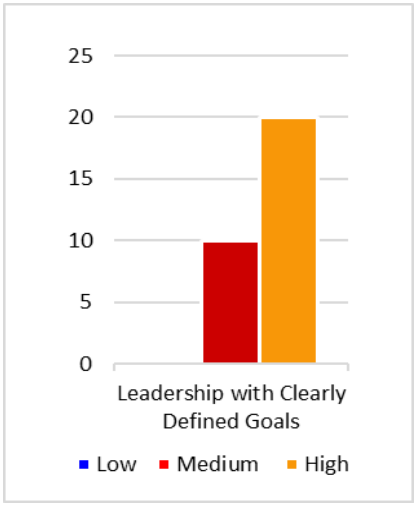


- **Majority** of the 24 respondents consider this factor as a **High Impact** factor on employee productivity.
- Thus, we can say that the aspect of **Clarity about expectations of work deliverables** is in widely practice & is considered as a **High Impact** factor in terms of employee productivity.

3. Leadership with clearly defined objectives:

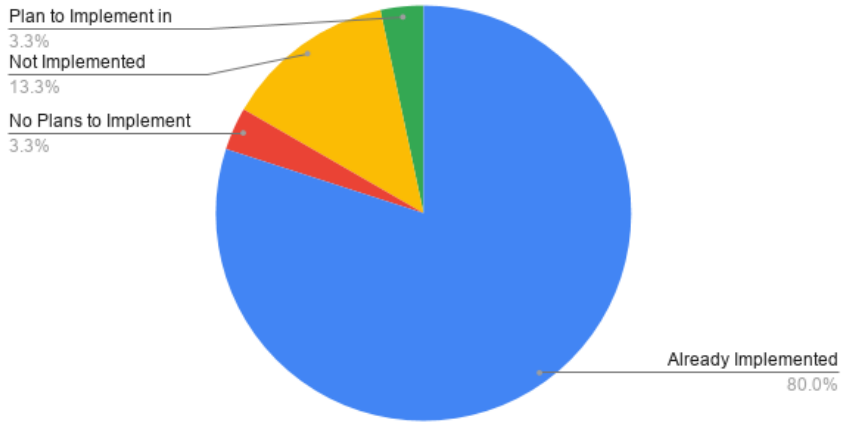


- This practice means communicating the leadership objectives for the organisation to the employees along with defining the clear goals.
- In **majority** i.e. **70%** of the organisations this practice is **Already Implemented** followed by a **20%** of where this practice is **Not Implemented**.

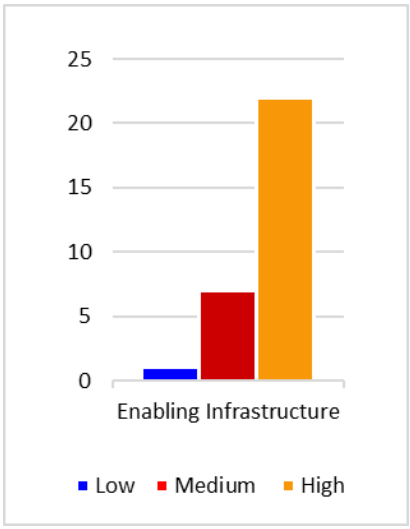


- This practice is considered as **High Impact** practice by a majority of respondents, thus highlighting the importance of it.
- A strong leadership with the backing of clearly defined objectives leads a better direction to employee efforts & thus higher employee productivity.

4. Enabling infrastructure (Tools, resources, etc.)

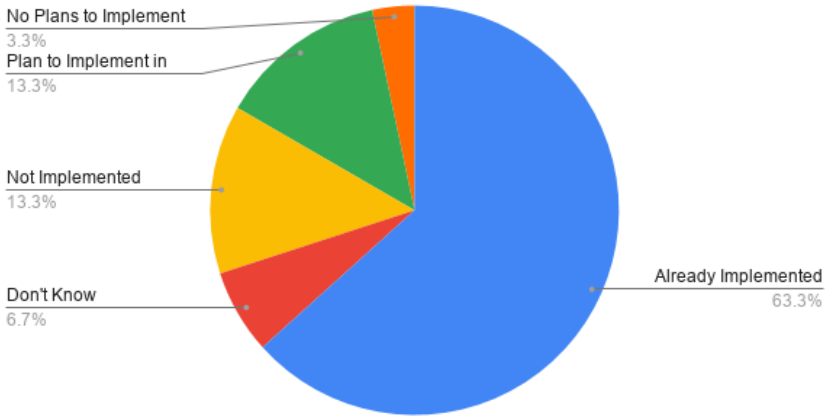


- This practice means providing the necessary tools, resources, processes, equipment, systems, etc. to the employees which is a very basic requirement but it contributes considerably to an employee's productivity. Absence or not offering these basic requirements hampers basic functioning of an employee.
- In **majority** i.e. **80%** of the organisations this practice was **Already Implemented**. Yet we can almost a **20%** of the organisation where this practice was **Not Implemented** in totality & for some organisations it was not even planned to be implemented in future.

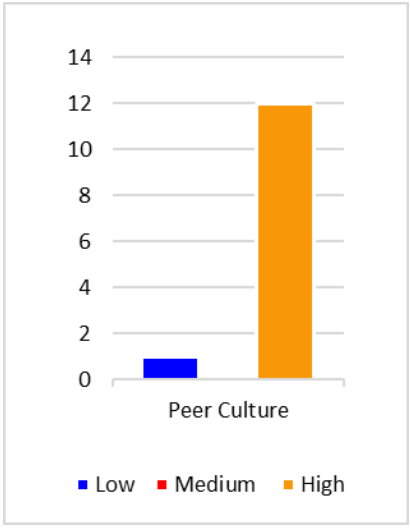


- This practice is regarded as **High Impact** practice for employee productivity.
- Certainly, if employees are equipped with necessary tools and resources then they tend to perform better.

5. Peer Culture

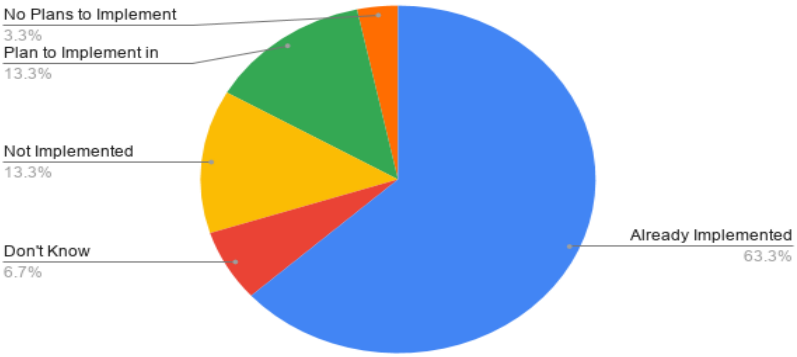


In **majority 63%** of the organisations this practice is **Already Implemented** followed by an equal distribution of organisations where this practice is Not Implemented as well as where the organisations have plans to implement this practice in future.

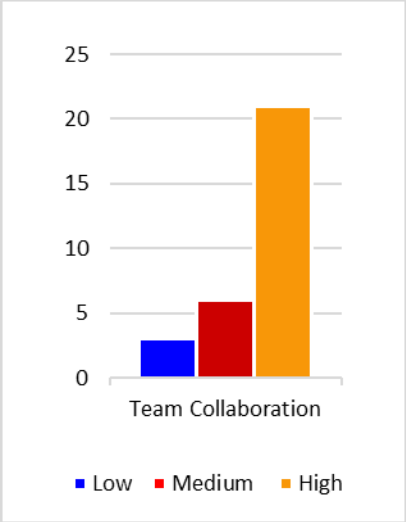


- This practice is regarded as **High Impact** followed by **Medium Impact** for employee productivity by majority of respondents.
- It is not at all regarded as a **Low Impact** practise thus considering this, organisations can make more use of this practice for achieving better productivity.

6. Team Collaboration

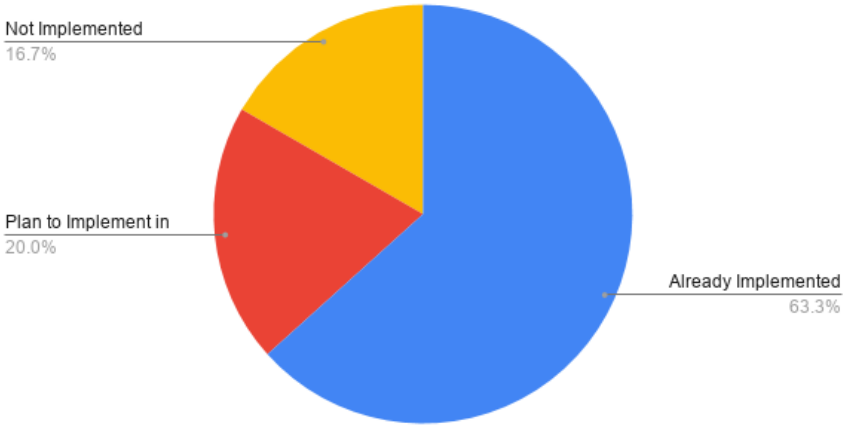


- **Team Collaboration** means making employees work in functional teams as well as making them work in various cross functional teams.
- In **majority 63%** of the organisations this practice is **Already Implemented**.
- In **13.3%** of the organisations this practice is **Not Implemented** & in another **13.3%** of the organisations this practice will be **Implemented In Future**.

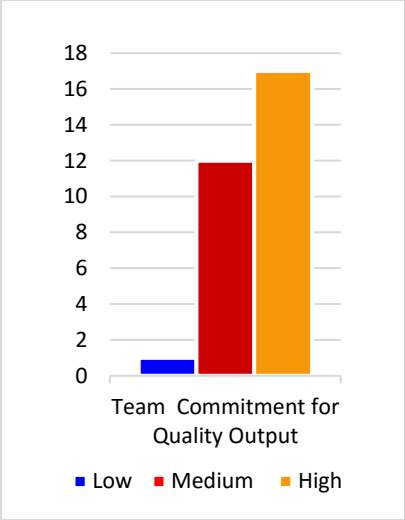


- **Majority** of **21** i.e. **more than two-third** respondents perceive it as a **High Impact** practice.

7. Team Commitment for Quality Output

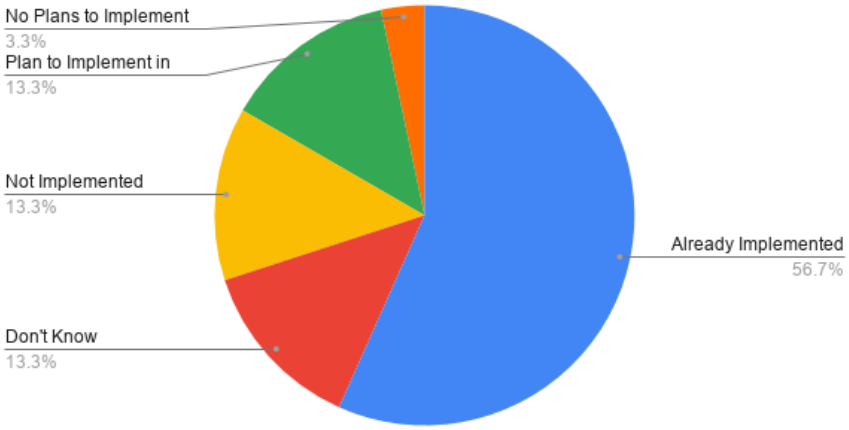


- It means the situation when the entire team commits to work to produce quality output. This practice leads to better team effort increasing the success ratio for the task at hand.
- In **majority** of the organisations i.e. **63.3%** this practice is **Already Implemented**.
- Since it is a good practice, we can see that **20%** of the organisations are also willing to **Implement it In Future**.

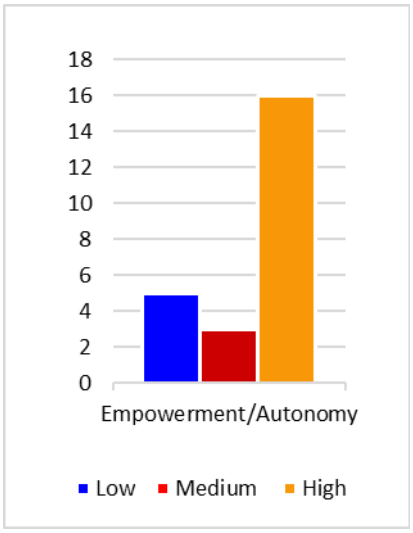


It is considered as a **High Impact** followed by **Medium Impact** practice by majority of the respondents

8. Empowerment/ Autonomy

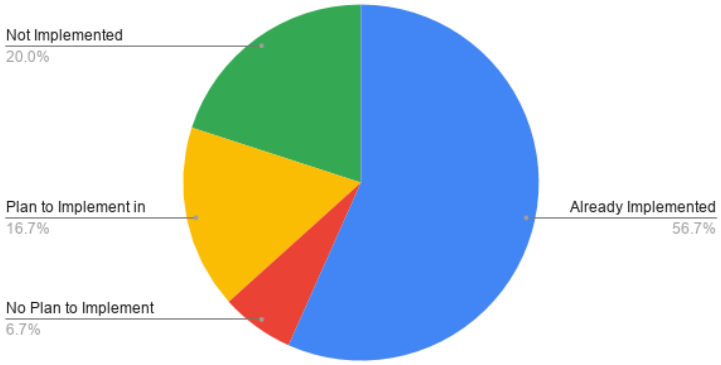


- It is a management philosophy that emphasizes the importance of allowing employees to take decisions independently & act on them. It is the direct opposite of micromanagement. It refers to the power & the freedom of decision making given to the employees.
- In **majority** of the organisations i.e. **56.7%** this practice is **Already Implemented**.
- We can see that 13.3% of the respondents have marked their response as **Don't Know**. This could be an outcome of either unawareness of the concept of Empowerment/Autonomy or unawareness of the status regarding the future plans of implementation of this practice since a large part of our respondents is Non-HR professionals.

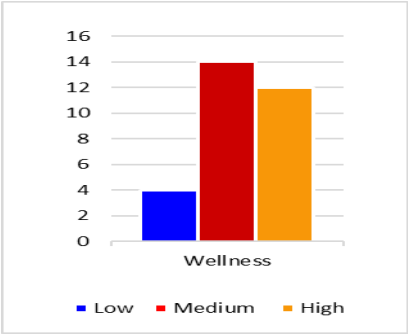


- This practice is regarded as **High impact** followed by **Medium Impact** practice by majority of the respondents.

9. Wellness (Activities for Physical & Mental wellbeing)

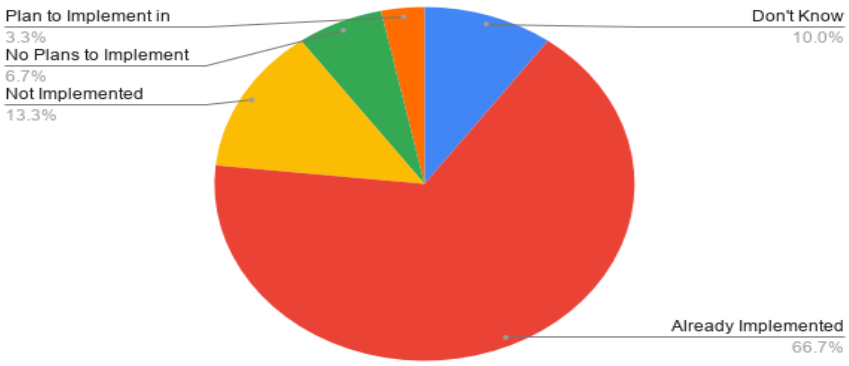


- **Wellness** refers to the activities carried out for physical & mental well- being of an employee. These include activities such as yoga, spirituality, some sports, games etc.
- In **majority** of the organisations i.e. **56.7%** this practice is **Already Implemented**.
- From the above graph we can see that we have received mixed responses.

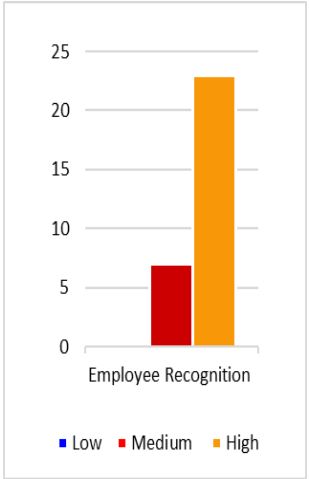


- The **majority** of the respondents believe that onboarding process has a **Medium impact** on employee productivity. More than one third believes that it has a **High impact**.
- Thus, we can say that overall wellness is regarded to have considerable impact employee productivity.

10. Employee Recognition

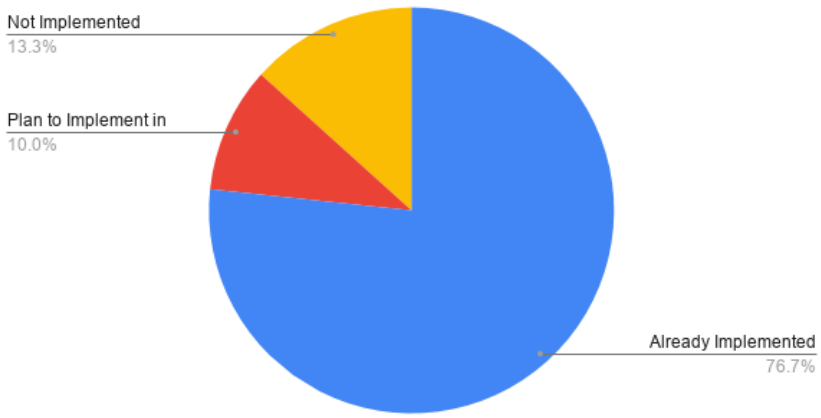


- **Employee Recognition** is the timely, formal or informal acknowledgment of a person's or team's behaviour for their performance. Essentially, the goal of employee recognition in the workplace is to reinforce particular behaviours, practices, or activities that result in better performance & positive business results.
- In **majority** of the organisations i.e**. 66.7%** this practice is **Already Implemented**.

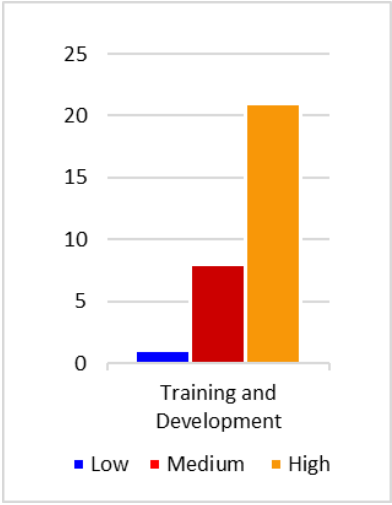


- Clearly, employee recognition is regarded as a **High impact** practice.

11. It is not at all regarded as a **Low Impact** practise thus considering this, organisations can make more use of this practice for achieving better productivity**Training and Development**

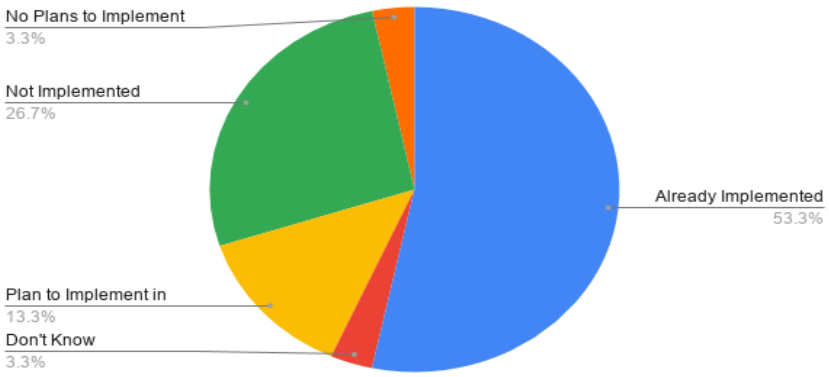


- **Training and Development** is one of the main functions of the human resource management department. Training refers to a systematic setup where employees are instructed & taught matters of technical & behavioural knowledge related to their jobs. Whereas, Development refers to the overall holistic & educational growth & maturity of people in their positions.
- In **majority** of the organisations i.e. **76.7**% this practice is **Already Implemented**.
- Since it is a good practice, we can see that **10%** of the organisations **Plan to Implement it In Future**.

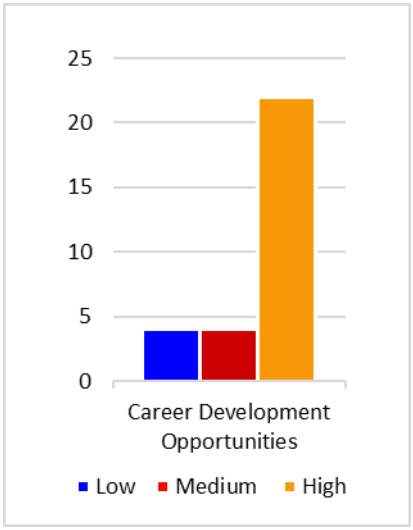


- This practice is regarded as **High Impact** practice by a majority of 21 respondents.
- Providing Training and development to opportunities to employees enables them to learn new skills & improvise themselves.

12. Career Development Opportunities

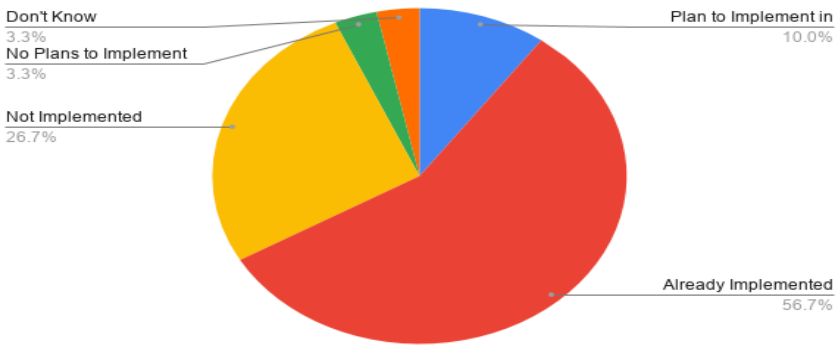


- **Career Development Opportunities** include on-the-job coaching, internal temporary transfers, professional networks & mentor relationships, temporarily performing duties of a higher classified position, job rotation, increased duties & responsibilities, secondments & staff exchange programs, etc.
- Here we have received a mix of responses.
- In **majority** of the organisations i.e. **53.3**% this practice is **Already Implemented**.
- Surprisingly in **27%** of the organisations this aspect is **Not Implemented** which is not a healthy practice.
- Since it is a good practice, we have **13.3%** of the organisations who **Plan to Implement it In Future**.

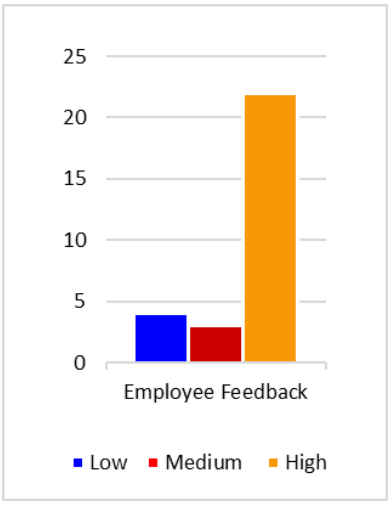


- This practice is regarded as **High Impact** practice by a majority of 22 respondents.
- The provision of development opportunities & activities to extend & broaden the scope of professional capabilities of employees in relation to their role & responsibilities.

13. Employee Feedback



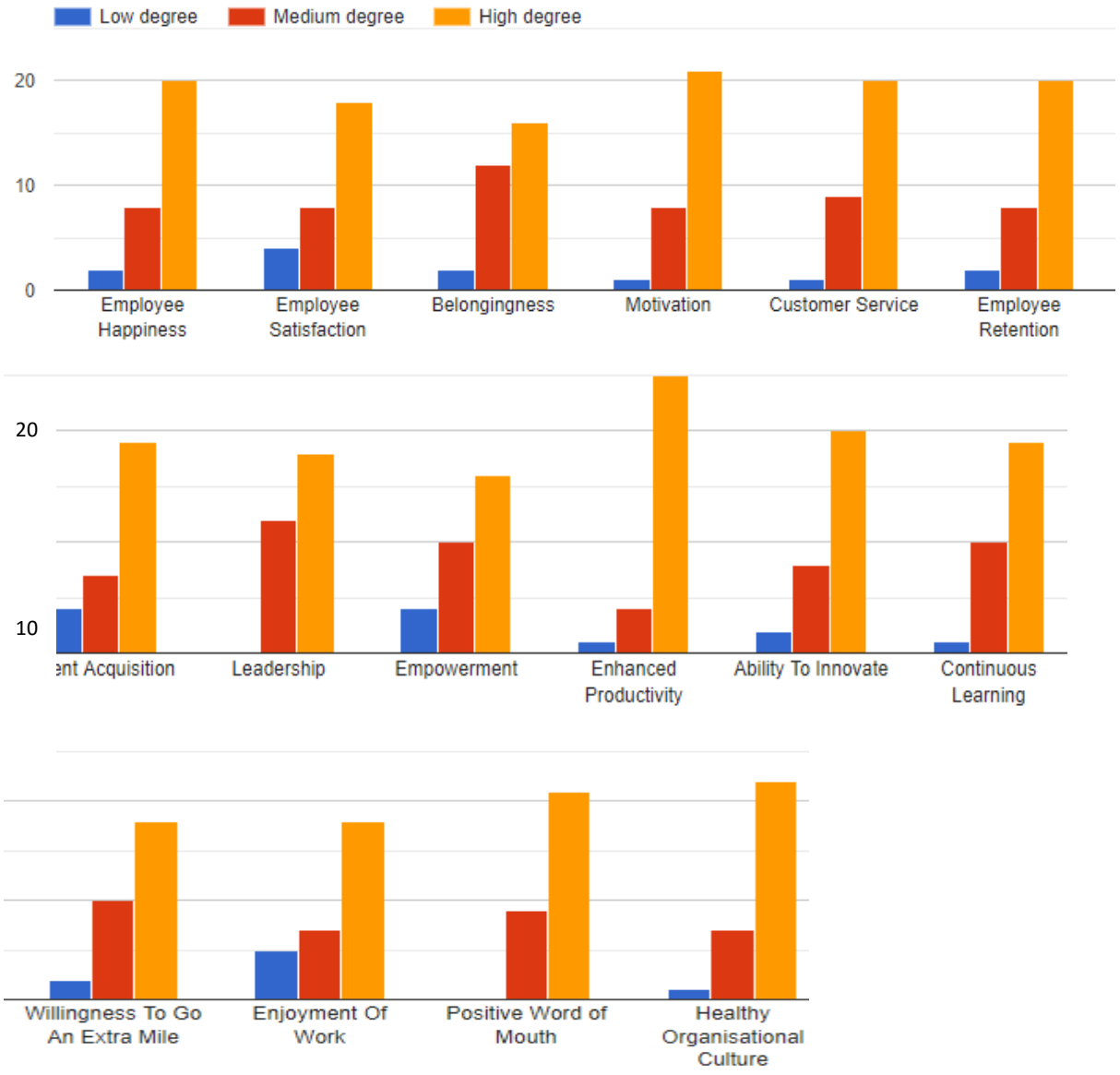
- **Employee feedback** is the helpful information or criticism about prior action or behaviour from an individual, communicated to another individual (or a group) who can use that information to adjust & improve current & future actions & behaviour
- In majority of the organisations i.e. **56.7%** this practice is **Already Implemented**.
- Surprisingly in **27%** of the organisations this aspect is **Not Implemented** which is not a healthy practice.
- Since it is a good practice, we have **10%** of the organisations who **Plan to implement it In Future**.



- This practice is regarded as **High Impact** practice by a majority of 22 respondents.
- Employee feedback improves performance, toll for continuous improvement, improves retention & decreases talent acquisition cost.

Q.4. In your opinion rate the degree to which the above mentioned employee engagement activities have an impact on outcome produced on the various aspects listed below:

The analysis of this question is done on the basis of degree of impact regarded by the respondents.

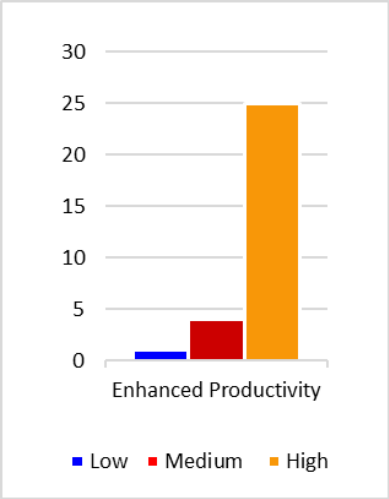


We can see from the above graph that most of the responses indicate a **High impact**. None of the employee engagement activities has indicated contributing to a majority Low impact. Thus, indicating that all the below mentioned activities have either a "High" or "Considerably Good" impact.

High Impact activities being activities with a clear majority & Considerably Good Impact activities being activities with a majority High vote but one-third votes in the favour of Medium impact. Hence, we have classified them as follows for their individual analysis:

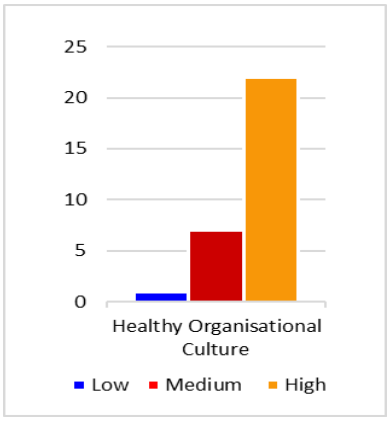
HIGH IMPACT ACTIVITIES:

1) Enhance Productivity



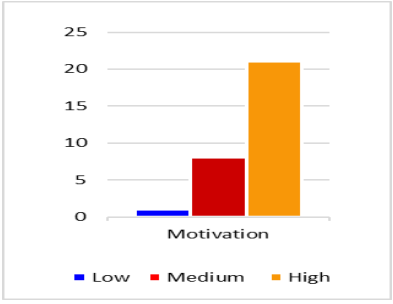
- This aspect has the **Highest of all majorities** of **25** respondents, who believe that the above mentioned employee engagement activities have a **High degree** of impact. Though we have few responses indicating **Medium degree** & **Low degree** impact, but overall, we can say that the above mentioned employee engagement activities have a **huge impact** on **Enhancing the Productivity** of the employees.

2) Healthy Organisational Culture



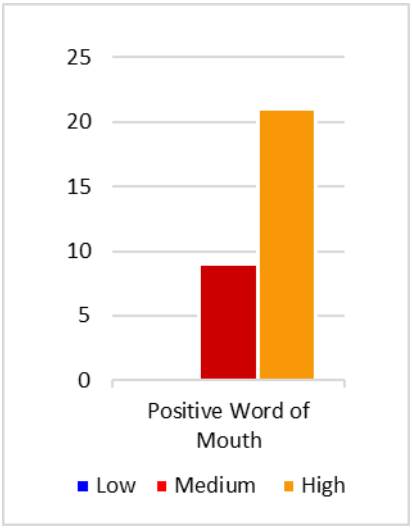
- Majority of **22** of the respondents are of the opinion that the above mentioned employee engagement activities' impact on the aspect of having a Healthy Organisational Culture is to a **High degree**. While we also have 7 & 1 respondents of the opinion **Medium degree** & **Low degree** impact respectively.

Motivation



- Majority of **21** respondents are of the opinion that the above mentioned employee engagement activities' impact on the aspect of Motivation is to a **High degree** followed by **Medium degree** response by **8** respondents.

3) Positive Word of Mouth

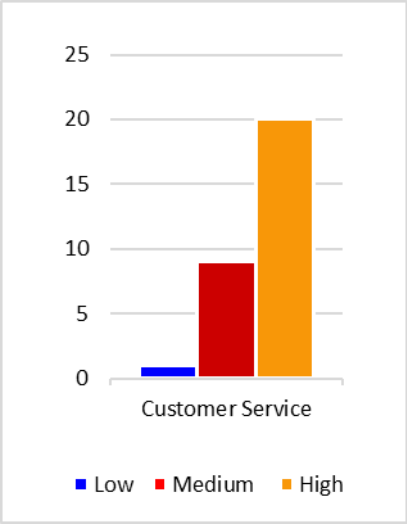


- Majority of **21** respondents are of the opinion that the above mentioned employee engagement activities' impact on the aspect of Positive Word of Mouth is to a **High degree** followed by **Medium degree** by **9** respondents.

4) Employee Happiness

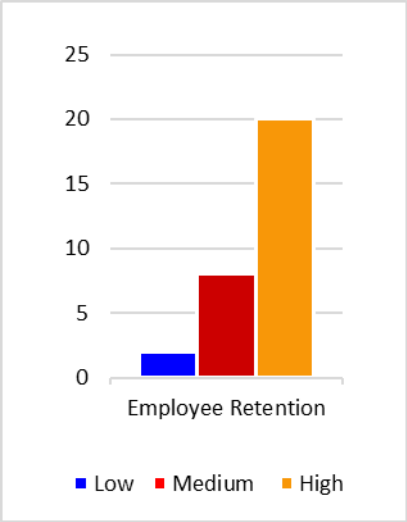
- Majority of **two-thirds** i.e. **20** of the respondents are of the opinion that the above mentioned employee engagement activities have a **High degree** of impact on Employee Happiness.

5) Customer Service



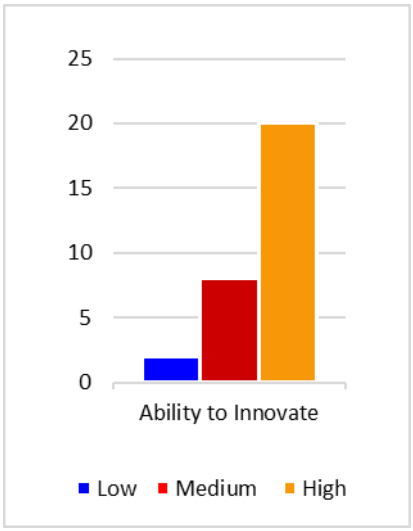
- Majority of **two-thirds** i.e. **20** of the respondents are of the opinion that the above mentioned employee engagement activities have a **High degree** of impact on Customer Service.

6) Employee Retention



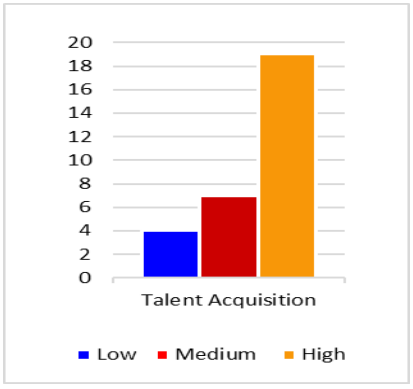
- Majority of **two-thirds** i.e. **20** of the respondents are of the opinion that the above mentioned employee engagement activities have a **High degree** of impact on Employee Retention.

7) Ability to Innovate



- Majority of **two-thirds** i.e. **20** of the respondents are of the opinion that the above mentioned employee engagement activities have a **High degree** of impact on Ability to Innovate.

8) Talent Acquisition

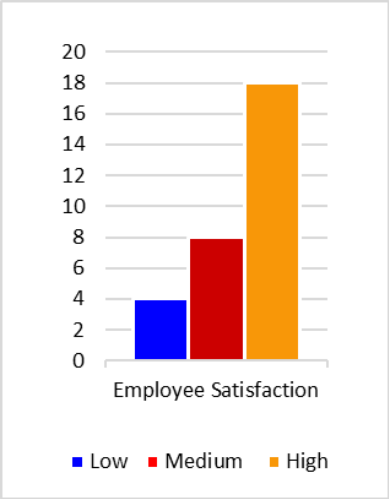


- Majority of **19** respondents are of the opinion that the above mentioned employee engagement activities' impact is to a **High degree** of Talent acquisition. 7 respondent's opinion is **Medium degree** & 4 of the respondents think that it has a **Low degree** of impact on Talent acquisition.

9) Enjoyment Of Work

- Majority of **18** respondents are of the opinion that the above mentioned employee engagement activities' impact on Enjoyment of Work is to a **High degree**. Yet 7 & 5 respondents are of the opinion of **Medium degree** & **Low degree** of impact respectively.

Employee Satisfaction

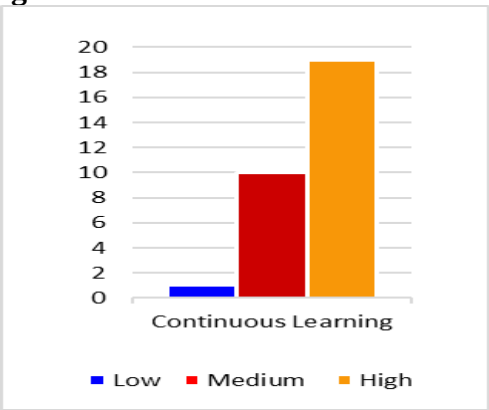


- Majority of **18** respondents are of the opinion that the above mentioned employee engagement activities have a **High degree** of impact on Employee Satisfaction. Yet 8 respondent's opinion is **Medium degree** & 4 of the respondents think that it has a **Low degree** of impact on Employee Satisfaction. Close to 50% of the respondents are of the opinion that there is a medium to low impact on Employee Satisfaction of various employee engagement activities.

<u>Considerably Good Impact Activities:</u>

These are the aspects wherein thought the majority of opinions reflect a **High degree** of impact yet a considerable amount of responses also displays **Medium degree** of impact.

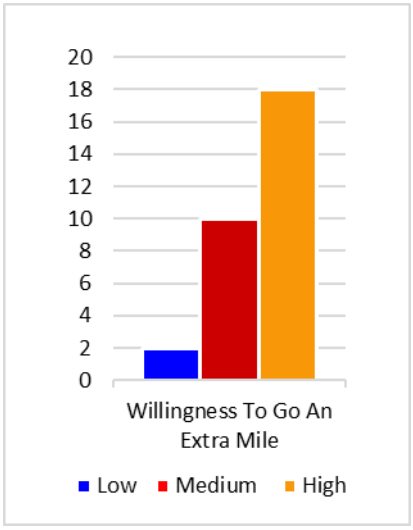
1) Continuous Learning



- Majority of **19** respondents are of the opinion that the above mentioned employee engagement activities' impact on Continuous learning is to a **High degree**. Yet 10 respondent's opinion is **Medium degree** & 1 of the respondents also think that it has a **Low degree** of impact on Continuous learning.

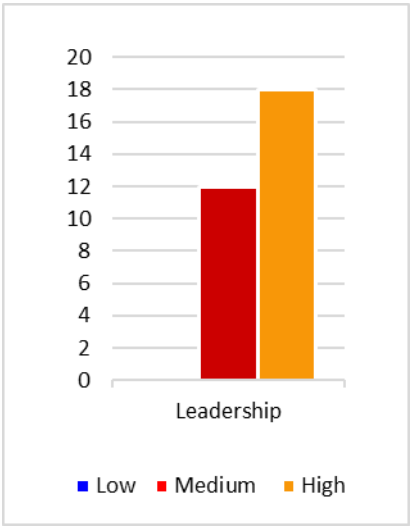
- Though, the majority points to a **High degree** impact yet almost one-third of respondents have a difference of opinion. This should be noted.

2) Willingness To Go An Extra Mile



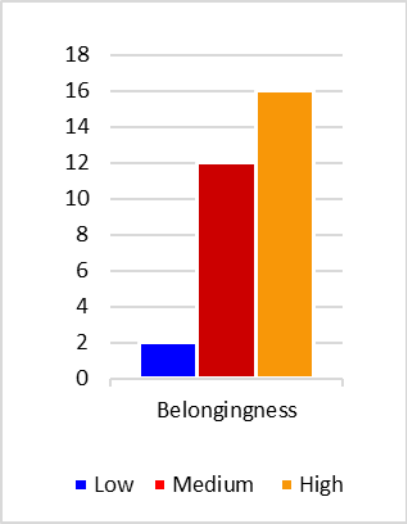
- Majority of **18** respondents are of the opinion that the above mentioned employee engagement activities' impact on Willingness to go an Extra Mile is to a **High degree**. Yet 10 respondent's opinion is **Medium degree** & 2 of the respondents also think that it has a **Low degree** of impact on Willingness to go an Extra Mile.
- Here we can see that **more than one-third** of the respondent's opinions are different from the majority.

Leadership



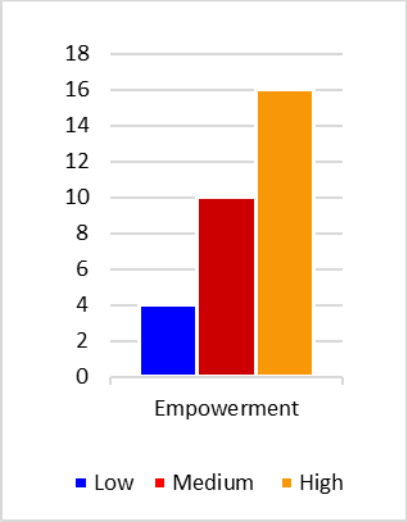
- Majority of **18** respondents are of the opinion that the above mentioned employee engagement activities' impact on Leadership is to a **High degree**. Yet 12 respondent's opinion is **Medium degree** of impact on Leadership. Here we can see that **more than one-third** of the respondent's opinions are different from the majority.

3) Belongingness



- Majority of **16** respondents are of the opinion that the above mentioned employee engagement activities' impact on belongingness is to a **High degree**.
- Yet 12 respondent's opinion is **Medium degree** & 2 of the respondents also think that it has a **Low degree** of impact on belongingness.

4) Empowerment



- Majority of **16** respondents are of the opinion that the above mentioned employee engagement activities' impact on Empowerment is to a **High degree**. Yet 10 respondent's opinion is **Medium degree** & 4 of the respondents also think that it has a **Low degree** of impact on Empowerment.
- Close to 50% of the respondents are of the opinion that there is a medium to low impact on the feeling of Empowerment of various employee engagement activities.

CONCLUSION

Employee engagement is a significant factor leading to success of millions of organisations all over the world. This workplace approach is meticulously designed to benefit the organisations by having employees with *higher satisfaction levels, higher retention levels, lower absenteeism levels, lower turnover levels, a greater number of satisfied customers & thus more profitability*. One of the focus areas of this approach is enhancing employee productivity which is often considered as one of the critical aspects for overall organisational success. The purpose of this research was to find out which employee engagement activities have maximum impact on productivity of the employees. *Employee productivity* is a sum total resulting out of various aspects such as *clarity of job role, productivity focused culture, technology in use, employee happiness, motivation, training provided for timely skill enhancement, opportunities for growing up the career ladder, continuous feedback on performance, attractive monetary & non-monetary rewards, timely recognition and freedom to innovate.*

The various employee engagement practices that were considered in this research received an overall **high impact** response in terms of their contribution towards enhancing employee productivity. The top-rated employee engagement practices according to the findings of this research are:

1) Clear expectations about work deliverables; 2) Employee Recognition; 3) Enabling Infrastructure; 4) Employee Feedback; 5) Career Development Opportunities; 6) Team Collaboration; 7) Training & Development & 8) Leadership with Clearly Defined Goals.

These employee engagement practices work as enablers to various above discussed aspects for enhancing employee productivity. Thus, we highly recommend these employee engagement practices to organisations irrespective of their industry to achieve high employee productivity.

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Impact of Google AdWords Marketing on Micro Enterprise in Tier II Cities of India: Study of Fashion Designing/Tailoring Business

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ABSTRACT

The aim of this research was to understand the influence of Google AdWords on Micro and Small-Scale Businesses located in Tier II cities of India. This was demonstrated by example of study of Fashion Designing and Tailoring Business which enabled the researcher to understand the impact on performance and growth of business in today's highly digital world. With advent of mobile revolution backed by telecom giant Jio entry in Indian market, led to widening the digital marketing throughout the businesses. Not only bigger but also smaller family businesses took advantage of this. This was enabled by Google's Analytics feature dedicated to mobile itself. With ease of doing the On- The- Go analysis and creating Ads, the presented case of business gained required momentum in market to sustain in current digital world. The complete package of Google system linked to one email id eased the handling of overall business. Here, the analysis was done on the basis of PPC, customer reach, customer satisfaction feedback, Ease to reach the location and visiting the business website. The results of such campaigning were very much insightful and proved to be great boost for business.

Keywords: Digital Marketing, Google AdWords, Impact, Small Business, Tier II cities, Business Performance and Growth

1. INTRODUCTION

The modern world is so much connected by mean of incredible happening technological developments, which in turn makes an organization to be so dynamic in its operations and marketing of its products. This applies to both big giants like MNCs to even small household business. With mobile as main tool for common man to have access to information, this platform made huge success for players like Amazon, Flipkart in India [1]. Mobile centric marketing enabled this firms to cater vast customer segments which are physically distant.

Concept of Google AdWords: Above situation led to widespread use of an innovative advertising program called AdWords in India introduced back in 2000 by Google. Its main algorithm depends on keyword which means the entire phrase that the user types in the Internet

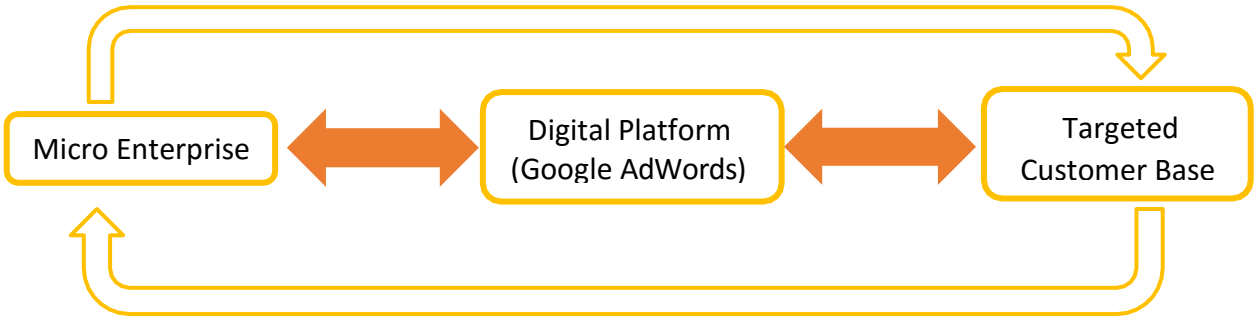

Figure No: 1 Functional Model of Google AdWords

Search Engine to find the information that interests him. A keyword is very rarely a single word– usually such a keyword consists of two, three or four words. The basic essence of AdWords was to support marketing activities through Google search engine. AdWords presents an advertisement containing a link to websites tailored to keywords.

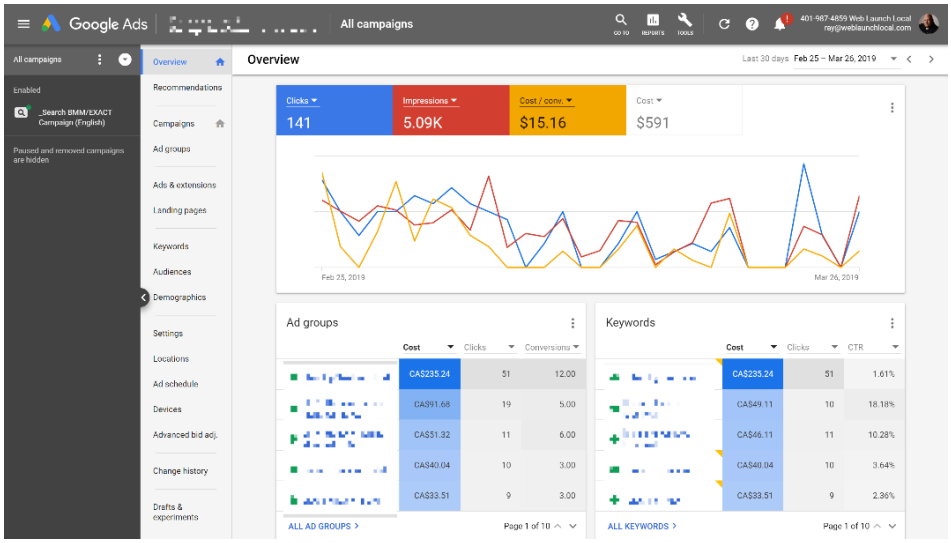

Figure No 2: Google AdWords Dashboard View

Meaning of Micro Enterprise in India: According to research conducted by Govt. of India-MSEs department, definition of Micro Enterprise is given with relation to investment in plant and equipment. For an enterprise to be termed as micro level, it has to have maximum of INR 25 Lakhs for Manufacturing Sector and maximum INR 10 Lakhs for Services Sector [3].

Meaning of Tier II city in India: According to Govt. of India, cities are classified on the basis of their population, as recommended by the Sixth Central Pay Finance making Mumbai, New Delhi, Kolkata, Pune as Tier I cities and Aurangabad, Nanded, Nashik as Tier II cities. With rising

urbanization in India, the number of Tier III and Tier II cities are increasing. Also, for Availability and Affordability, businesses, even residents are preferring tier II cities over metropolitan cities.

Importance of Digital Presence for Micro Enterprise in Tier II city: With small infrastructure available, smaller workforce (Mostly one person handled business) and not much developed market as compared to metro cities, researcher think there is utmost urgency of implication of digital platform like Google AdWords for micro businesses in tier II cities. This is not to be contradicted by any change in people mind-set in such cities as literature review suggests the rise of online presence of customer for not only viewing offers given by big giants like Amazon, Flipkart, etc. but also for knowing better local businesses running within the city.

2. OBJECTIVES OF STUDY

Here, considering the research gap, the following objectives were considered important to study in this research.

1. To understand the importance of Google Ads in tight financed working conditions of Micro Enterprise working in Tier II city of India
2. To study impact of Google AdWords on Micro Enterprise (as given in study) with respect to customer reach, product marketing
3. To study consumer behaviour through online listing and promoting via Google AdWords- Conversion from potential customer to realised customer

Here, all the objectives are then converted into step by steps procedural actions to understand the impact of each step on overall business performance. Here, for study of above mentioned objectives, a Fashion Designing business was taken into consideration and research was done on the same.

Hypothesis of Research:

Here, main hypothesis is as follows:

H0 = There is no significant influence of Google AdWords on marketing by Micro Enterprise in Tier II cities

H1 = There is significant influence of Google AdWords on marketing by Micro Enterprise in Tier II cities

These hypotheses are again divided into majorly 3 sections of objectives:

1. Customer Reach
2. Customer Conversion
3. Finding Optimised Cost Per Click per Conversion

Here, researchers have made out following sub hypothesis for each section:

1. **H0** = There is not much customer reach provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities
   H1 = There is increased customer reach provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities

2. **H0** = There is no significant positive impact on customer conversion provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities
   H1 = There is significant positive impact on customer conversion provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities

3. **H0** = The cost of conversion provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities is higher than conventional marketing techniques
   H1 = The cost of conversion provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities is smaller than conventional marketing techniques

Researcher have used all sub hypothesis to prove the main hypothesis. In the subsequent sections of Data Collection and Analysis these hypotheses are tested and analysed.

3. LITERATURE REVIEW

Researcher was aided by secondary data available from number of research papers and articles providing a detailed insight on Internet Marketing and use of this platform for SMEs. The findings from the literature are presented below: -

As per findings by Dr. Bala Madhu et al (2018, P. 333-336) [1], there is almost 10% impact of mobile marketing which comes within top 5 Digital Marketing Activities. Paper also states factors like cost involvement, ease of real time data and campaign success, easy stimulation of customer actions, and instant purchase through UPIs were major contributor to success of digital marketing.

Paper by Singh Tina (2017, P.40) [2] describes the Social Media as major factor to market their products and to have a better connect with their customers. It also reveals that internet marketing has least expenses and most exposure with the example of McDonald's social media campaign. The paper does not specifically state various methods of social media marketing and their analytics point of view.

In the report by IAMAI (2019, P. 29) [3], it is highlighted that, Digital payments have enabled easy and transparent transactions for businesses also helping them with lessening defaults from customers. This has led to category focus of MSME on Digital Payment to be high while digital advertising focus to be medium. This clearly shows the importance of going digital for micro enterprise.

Research paper published by Kaushik Rajiiv (2016, P. 17) [4] briefly describes the exploratory research done by researcher for current scenario of digital marketing in India. It clearly shows tremendous potential of increasing sales with proper strategy giving benefits like increased brand recognition and better brand loyalty. Paper describes the various factors for failure of digital marketing in startups, and also highlights the gains by Indian big giants like Nestle, Coca Cola, etc. in such scenario.

Now, Shirisha M. (2018 P. 616) [5] also have similar thoughts of importance of digital marketing as expressed by Kaushik [4]. It goes ahead and states that, for NPD, creating the product awareness, digital marketing plays important role.

In the exploratory research by Dar Ishaq, Lakha Reena (2018, P. 178, 179), the authors highlight the changing pattern of customers buying behavior from mall/ actual shopping to online shopping. But paper highlights some challenges for digital marketing like optimizing response and conversion, measuring and tracking the performance as a few.

Research done by Dr. Rathore, et al (2018, P. 112-114) shows digital tools and specifically websites play an important role in current era, where mobile market growth is much more responsible for this phenomenon. Paper describes various forms of digital marketing like SEO, content marketing, content automation, etc. Paper also highlights cost effectiveness of it its commercial impact on the business.

Szymanski Grzegorz et al (2018, P. 99) shows in their paper that, keywords selection, optimizing the websites and campaign parameters optimization are important stages for PPC (Pay Per Click) effectiveness.

Research Gap: The researchers found that most of papers published in India from the period of 2010-2019 were focused on exploratory research in field of Digital Marketing and no such paper was found relevant to the use of such platform like Google AdWords. So, this gap in research was found and work was carried on the same gap.

4. RESEARCH METHODOLOGY

The overall research framework was designed in proper method to help the researcher to have a detailed analysis of impact of Google AdWords on performance of Micro Enterprise located in the Tier II city- Nashik, Maharashtra, India.

Background of Micro-Business: The presented business is been working in the region of Nashik city from more than 25 years in primary fashion designing, tailoring and hobby classes. The business has used various tactics of marketing like pamphlet, advertisement in local newspaper, etc. previously. But the response was limited and got stagnant due to increased competition in the region from new entrants. With no such mechanism to analyse the customer behaviour and tack the business performance, the business required much needed boost in its strategy to promote itself strongly.

Step by Step Guide for Research:

Here, researcher followed the following procedure for setting up the profile of business (Online Listing) and then creating campaign and its analytics.

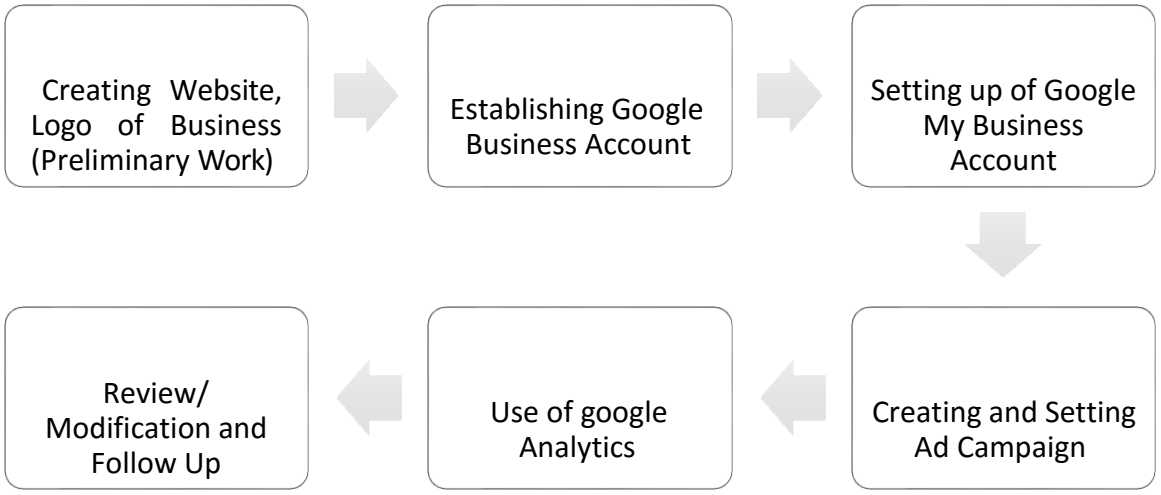

Figure No: 3 Procedure for Research

Step I: Creating Website, Logo of Business (Preliminary Work): Here, researcher assisted in creating the website (with free domain on WordPress.com) and creating the visuals of Business Logo, creating product images and visuals, E- Brochures, etc. This was ground work required for the further steps.

Step II: Establishing Google Business Account: Here, researcher created Google account and then My Business account. The business was listed on Google Maps first and then followed by setting the account.

Step III: Setting up of Google My Business Account: Here, basic information like, business address, working hours, brief history of business, product portfolio, business tagging categories were updated. Maps feedback were taken from various previous customers via initial personal communication. Here, another important thing was provided was acceptance of Google Pay digital mobile wallet facility. This proved major important aspect for performance boost.

Step IV: Creating and Setting Ad Campaign: After setting up profile and creating posts on Google My Business, the nest stage of creating campaign was done. Here, considering the financial constraints, the budget was set very less (Less than INR 500 per month) for initial phase. With giving search phrases, setting target location radius, the campaign were started.

Step V: Use of google Analytics: With initial success getting within first two months, the various parameters were analysed with inbuilt Google Analytics.

Step VI: Review/ Modification and Follow Up: With some modifications in campaign from Google Analytics, the modification was reviewed and followed up.

Importance of Search Phrases: Search phrases are representative of the terms that people searched for on Google to see Ad. According to Szymanski Grzegorz, et al. [8], researcher gave most importance in creating the campaign.

Here, Research Design used in this project is Descriptive Research design as this form of research does not fit neatly into the either side of quantitative or qualitative research methodologies, but instead it can utilize elements of both.

Also, for sampling, the sample size of 250 respondents were taken with use of Non-probability sampling technique. These respondents were among the visitors to business in person or on online platform via Google AdWords. The sampling size was taken based on quick thumb rule by calculating effect size based on alpha and beta values of type I and II errors respectively. Effect size is known as the difference between the sample's statistics divided by the standard error. 1-beta equal to the power and as the power will increase with different levels of alpha, sample size will also increase. So, with maximum acceptable error values of alpha, small effect size of 0.82, sample size of 180 was considered well enough for study of research project.

5. DATA COLLECTION AND ANALYSIS

In this section, the data collection method and its analysis are discussed which helped researchers to find results and make required recommendations. Here, as the source of data is of online basis, the data was correlated with actual conversions made during the stipulated period.

Data Collection: The campaign details are given in below table:

Table No 1: Campaign Parameters Details

Sr. No	Parameters	Details
1	Primary Goal	Visit Storefront
2	Duration	10 months
3	Radius of Location for Target Audience	13 Km from Business Location
4	Amount Spent	Rs. 650
5	No. of Impressions	2150
6	No. of Map Actions	850
7	No. of Clicks	215
8	No. of Phone calls received	145
9	No. of times Photos were viewed, compared to other businesses	450

It was active for period of March 2019 to December 2019 for the period of 10 months. Here, an impression is counted each time Ad is shown to someone visiting a search results page or website on Google. Comparing the number of impressions with the number of actions taken on Ad is required to understand how well Ad appeals to potential customers. Here actions taken by customer are: *No. of Clicks, No. of Phone calls received, No. of Map actions, etc*. The analysis was done considering the hypothesis presented. The above parameter of radius oftargeting was taken considering the amount to be spent. More the radius, more would be amount. This was aided by

Here, the researcher also used the actual conversion rate of customers for given period. It was found that, total of 58 customers were actually converted. Here the main 3 parameters were tested on following variables:

1. Customer Reach: Based on No. of Impressions, No. of Map Actions, No. of times Photos were viewed, compared to other businesses
2. Customer Conversion: Based on No. of Phone calls received, No. of
3. Finding Optimised Cost per Click per Conversion: Finding through actual conversion rate compared to actual amount spent

Here, researchers also did qualitative survey on converted customers to know about effectiveness of campaign. This was done informally while serving the customers. The data is presented below obtained from survey. Though this table or data was not used for testing hypothesis, but it gave some insights which were not found from Google Analytics.

Table No 2: Survey Findings

Sr. No.	Parameters	Converted Customer's Reaction (No. of Responses)
1	Ease of Locating	52 (90%)
2	Ease of Payment	44 (75%)
3	Ease of getting Information Related to Products	50 (85%)
4	Customer Satisfaction	46 (80%)
5	Customer Recommendation	41 (70%)

Data Analysis:

Here, researchers have analysed the data with the help of SPSS Version 13 as statistical tool. Researchers analysed above parameters to test sub hypothesis which further related to main hypothesis testing.

1. Customer Reach:

Table No: 3 Chi Square results for Customer Reach via Ease of Google Maps and Improved Business Revenues

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.097[a]	249	.452
Likelihood Ratio	24.346	249	.228
Linear-by-Linear Association	3.541	1	.060
N of Valid Cases	180		

Here, it was found that, significance value is more than 0.05, so the H_0 was accepted and H_1 was rejected. So, it was found that, there is not much customer reach provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities.

2. Customer Conversion:

Table No: 3 Correlation between Customer Conversion and Use of Google AdWords Campaign

Correlations Table

		Customer Conversion	Google AdWords Campaign
Customer Conversion	Pearson Correlation	1	-.294**
	Sig. (2-tailed)		.000
	N	250	250
Use of Google AdWords Campaign	Pearson Correlation	-.294**	1
	Sig. (2-tailed)	.000	
	N	250	250

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

Here, it was concluded that, as significance level is less than 0.05, so null hypothesis was rejected, so, there is significant positive impact on customer conversion provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities.

3. Finding Optimised Cost Per Click per Conversion:

Table No: 3 Correlation between Optimised Cost per Click per Conversion and Cost by Google AdWords Campaign

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.000	1	20.000	10.110	.002[b]
	Residual	352.111	248	1.978		
	Total	372.111	249			

a. Dependent Variable: Areas where Branding of Coca Cola is Relevant

b. Predictors: (Constant), Country of Belongingness

Now, considering ANOVA test for Optimised Cost per Click per Conversion and Cost by Google AdWords Campaign, it was found that, significance value is 0.002 which is less than

0.05. So H0 was rejected and H1 i.e. the cost of conversion provided by Google AdWords Campaign run by Micro Enterprise in Tier II cities is smaller than conventional marketing techniques was accepted.

With all sub hypothesis getting accepted, researchers concluded that, main hypothesis, H1 was accepted, i.e., there is significant influence of Google AdWords on marketing by Micro Enterprise in Tier II cities.

6. RESULTS AND FINDINGS

After analysing the data collected from 180 respondents then doing data analysis, it was concluded that, ease of reach and ease of payments were important factors for increased business turnover. It was also found that Rs. 11.2 was cost per conversion for given period of time by Google AdWords. With increased awareness, the customers were found satisfied with service given and created much needed loyalty via recommendation to other customers. Also, Google AdWords created new opportunities for business to attract the customers through digital platform. The cost of campaign was recovered within 3 months of period by given business and proved to be long lasting solution for further marketing activities. Researchers also recommended further continuation of this campaign for more increasing sales, and thus recommendation was considered and implemented by micro- enterprise. This proved the effectiveness of overall digital campaign on which whole study was based.

7. DISCUSSIONS AND CONCLUSIONS

After analyzing the data collected from 250 respondents then doing data analysis, it was concluded that, Google AdWords campaign have positive effect on marketing by Micro Enterprise in Tier II cities. The given business matures along with demographics of targeted customers by it, researchers clearly found that, the campaign was effective not only in increasing customer reach, but also for cost efficient marketing- which is hustle-free, backed by real time analytics, and easy to operate with just mobile fingertip. Researchers found that, availability of website, digital payment facility and easy navigation through Google Maps were important requirements by consumers and all these were fulfilled by Google Campaign. Researchers truly acknowledged power of such platform and its significance for small ventures which can compete with bigger companies. It was also concluded that, change in strategy is what is needed when your business is not performing well or getting stagnated with due course of time. Researchers recommend this kind of strategy to be implemented by all micro businesses in Tier II cities as to deal with changing customer behavior and effectively improving business performance in 21st century.

8. LIMITATIONS AND RECOMMENDATIONS

The study was definitely for very specific time and limited sample size considering sole impact by Google AdWords. Also, possibility of information being incorrect, and inability of recording unconscious responses posed some limitations to the research study. Researchers suggest that future research should include more specific demographics of India (both rural and urban).

Lastly, researchers hope that further work accompanied for actual performance marketing coupled with digital campaign would help the study further.

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FINANCE IN TECH STARTUPS

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ABSTRACT:

Entrepreneurship is one of the ways to solve unemployment problem in India. And emerging country like India wants many problem solvers that mean there is huge scope of entrepreneurship. Tech startups have emerged a lot and in industry 4.0 there is huge scope for tech startups. Finance is a major aspect of startup ecosystem which we tend to study in this research. To study financial structure of Tech start ups we observed the information of 15 tech startups for the financial sources, challenges, factors influencing financial decision. We found that Finance plays a vital role & should be given importance in startup ecosystem. This research explores Finance in Tech start ups and we found that even though there are many sources of funds for startups but still most of the start ups are self financed (bootstrapped), there are various challenges that they have to raise the funds, even after many government policies very few have materialized for funding. With this research we would like to bring the findings to notice of stakeholders.

Key Words: Start up financing, Entrepreneurial Finance, Tech start up.

INTRODUCTION:

For emerging countries where the rate of unemployment is the biggest problem that governments have to face, encouraging the spirit of entrepreneurship is presented to be one of the best ways to reduce it. Thus, the governments of India focus on the development of start-up firm to promote the economic growth, & reduce the unemployment. As per the ILO report, unemployment rate stood at 3.5 per cent in India (Economic times 3/7/2019). Entrepreneurship is one way to solve the problem.

Start-up is an entrepreneurial venture which is typically a newly emerged business that aims to meet a market place need by developing a viable business model around a product, service, process or a platform (Wikipedia). The issue of finance has been viewed as the immediate reason why most start-ups fail to start or to grow. There is limited access to financial resources available to smaller enterprises compared to larger organizations. The financing choices are the most important decisions for the growth and survival of any organization. Capital structure (financing decisions) can be defined as the proportion of debt and equity used by a firm to finance its operations. The capital structure of the firm is determined by several factors. Start-up capital refers to the money that is required to start a new business, whether for office space, permits, licenses, inventory, product development & manufacturing, marketing or any other expense. Start-up capital is also referred to as seed money. The money can come from a bank, in the form of a business loan; or from an investor, group of investors, or venture capitalists. In the case of

a bank loan, the business will be expected to make monthly payments to pay down the debt plus any interest. India has witnessed a phenomenal progress of the technology start-up ecosystem in the last 10 years. The period was marked by the inception of several thousands of start-ups, rise of unicorns and the emergence of category leaders in areas of Robotics, Analytics, EduTech, HealthTech, Fintech, etc. In 2017, the start-up base in India is expected to cross 5000 with a 7% growth from 2016. The number of new start-ups is likely to come down from 1400+ in 2016 to 1000+ 2017 as entrepreneurs pivot their business models & explore untapped opportunities (Indian Start-Up Ecosystem – Traversing the Maturity Cycle - Edition 2017 NASSCOM).

Definition for a Startup given by the government of India:

- Up to a period of seven years from the date of incorporation/registration or up to ten years in case of Start-ups in Biotechnology sector.
- As a private limited company or a partnership firm or a limited liability partnership.
- With an annual turnover not exceeding Rs. 25 crore for any of the financial years since incorporation/registration.
- Working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation. (Start up India Scheme)
- Working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation. (Start up India Scheme).

The term 'start-up' or "start-up company" means a private company incorporated under the Companies Act, 2013 or the Companies Act, 1956 and recognised as start-up (Companies Act 2013)

Capital structure: It is the proportion of debt and preference and equity shares on a firm's balance sheet. (Khan & Jain, Chapter 19, page no. 19.1).

REVIEW OF LITERATURE:

Waleczek, Peter, Flatten, Tessa Christina in 2014 studied financial behaviour of 3,017 new business owners and found that bootstrapping is a strategic choice rather than a necessity. (The pecking order hypothesis: does it apply to startup firms? Emrald).

Stuart Paul, Geoff Whittam, Janette Wyper in 2007 finds that where external funds are required, the main source is equity rather than debt. In the majority of cases, in depth interviews show that a bridged pecking order applies in that the businesses move from self funding to external equity in preference to, or instead of bank finance. Two reasons for this pattern can be established. First, entrepreneurs consider debt to be a personal liability as it invariably requires to be underwritten by personal guarantees. Entrepreneurs place a self imposed limit on the extent to which they are prepared to mortgage their assets. Second, entrepreneurs deliberately seek out equity investment as a means of obtaining added value over & above the finance invested.

Andrew Atherton in 2012 studied new venture financing across 20 business start ups. initial discussions with the founder(s), and follow up contact to confirm sources of financing acquired during new venture creation. This approach was adopted because of the challenges associated

with acquiring full details of startup financing, and in particular informal forms of new venture financing. Found the significant variation in, and scale of, new venture financing. In multiple cases, funding patterns did not tally with established explanations of small business financing. (Capitalization structures and patterns, Emrald)

As per provision of companies Act 2013 start-up entity is further allowed to raise deposits from members (shareholders), with exemption from procedural compliance for five years otherwise mandatorily required under the Act. Further as per the Companies (Acceptance of Deposit) Rules, 2014 have been amended to provide that an amount of twenty five lakh rupees or more received by a start-up company, by way of a convertible note (convertible into equity shares or repayable within a period not exceeding five years from the date of issue) in a single tranche, from a person shall not be treated as a deposit. Further, since the launch of startup India program, a number of initiatives have been taken to promote startups.

Timo Fischer and Gaétan Rassenfosse studied Debt Financing of High-Growth Startups (2011) conducted experiments with 55 senior venture lenders. They tried to understand venture lending activity, loan portfolio. They provided empirical evidence that VC backing substitutes for cash flow and that intangible assets in the form of patents are taken as collateral.

David B. Audretsch/Erik E. Lehmann, 2004, Financing High-Tech growth: The role of banks & venture capitalists, analyzed data set of the firms listed on the Neuer Markt (New Market) in Germany, they demonstrate that venture-backed firms differ from firms with other financial resources, especially debt. Thus, results of study shows that small and innovative firms are more likely to be financed by venture capitalists rather than banks. They also provide evidence that the presence of venture capitalists enhance the growth rates of firms positively

OBJECTIVE:

- To determine the most preferred or feasible source of financing in a Tech start-up.
- To evaluate the factors influencing the selection of source of financing.
- To ascertain the challenges faced by tech start-ups in raising the funds.

RESEARCH METHODOLOGY:

This research is a exploratory research to better understand the topic and problem and to gain insights into the topic. To meet the research objective, empirical study is undertaken. The research is based on primary and secondary data both.

Sampling Method: Non-probability sampling method: Convenience Sampling

Sampling Size: For this research sample is comprise of 15 Tech start Ups of any domain.

DATA COLLECTION:

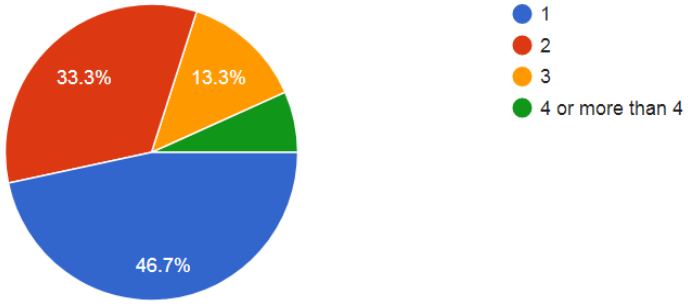
Primary Data: To know the response, the questionnaire method comprised of dependent and independent variable. It has been designed as a primary research instrument. The questionnaires were used as an instrumentation technique, because it is an important method of data collection. The success of the questionnaire method in collecting the information depends largely on proper drafting. So in the present study questions were arranged and interconnected logically. Also, telephonic interview was used to get some more insights from tech start ups founders.

Secondary Data: The secondary data includes articles, reports available in journals, books, magazines, JBIMS library literature & electronics media sources. The expectation from the secondary research included information on:

- Financing sources of Tech start ups.
- Finance as a important factor in startup ecosystem.
- Government policies for start ups.
- Start ups challenges with respect to finance.

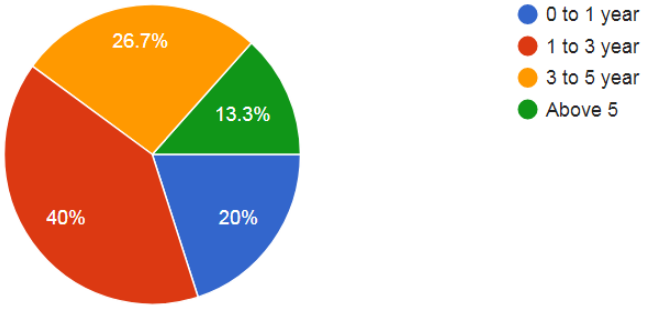
DATA ANALYSIS:

The startup has how many founders?



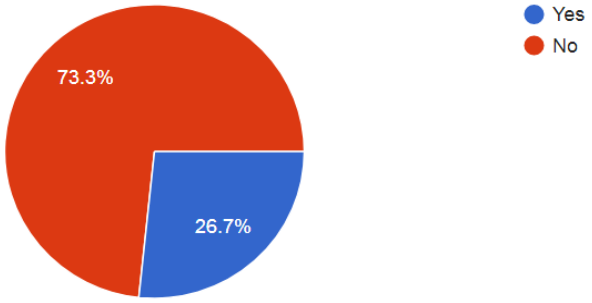
Out of 15 start ups 7 (46.7%) has only one founder 5 (33.3%) startups has 2 founders. 2 start ups (13.3%) has 3 founders and only 1 start up has 4 or more than 4 founders.

What is the age of start up?



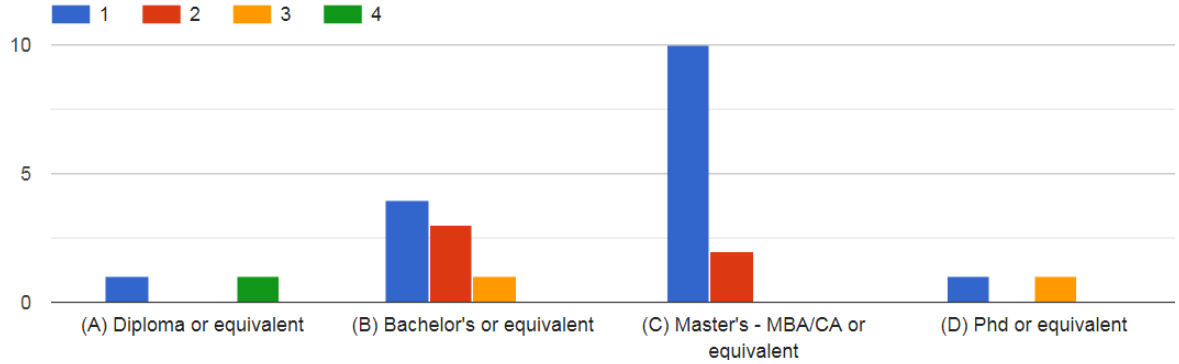
40% of starups has the age of 1-3 years. 26% has the age og 3-5 years. 20% is of the age 0-1 year only 13.3 % is of age above 5 years.

Whether the start up incubated or accelerated?



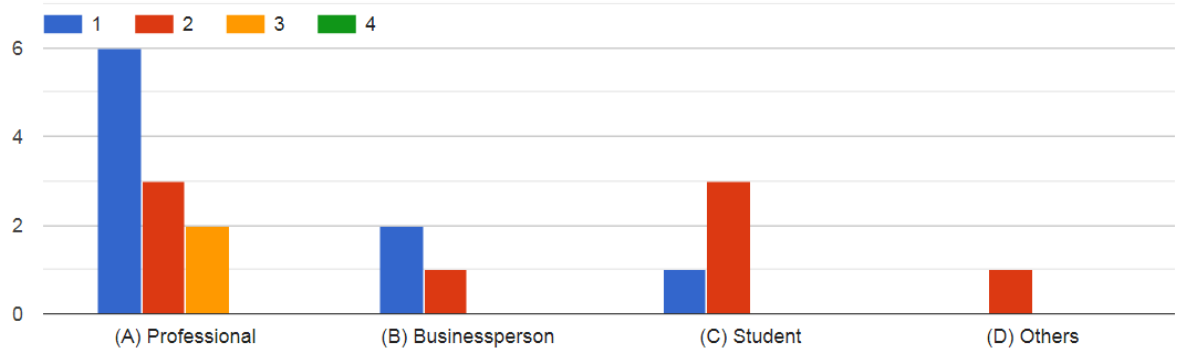
73.3% of the start ups are not incubated only 26.7% are incubated.

What is the qualification of founders?



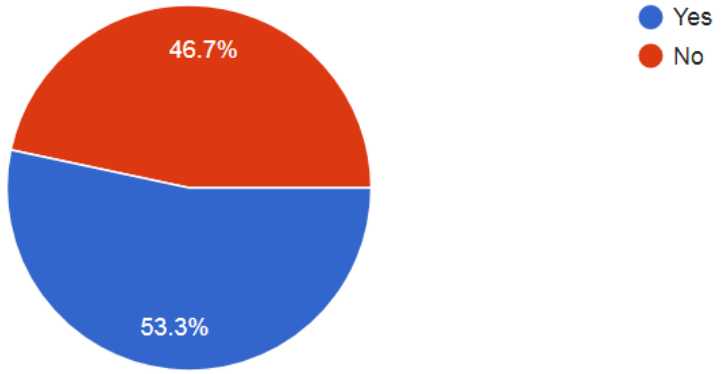
Majority of founders of tech start ups are masters qualified and bachelor. Only one start up founder has Phd or equivalent qualification.

What is the background of the start ups?



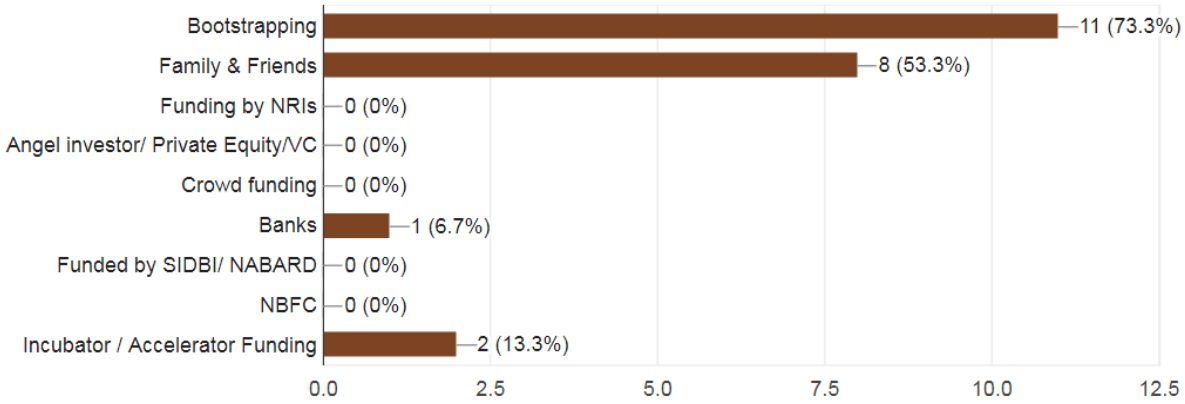
Majority of founders are from professional background, second hihest no. of founders are students then those who are from business background.

Is the startup registered with the startup India scheme under DIPP ?



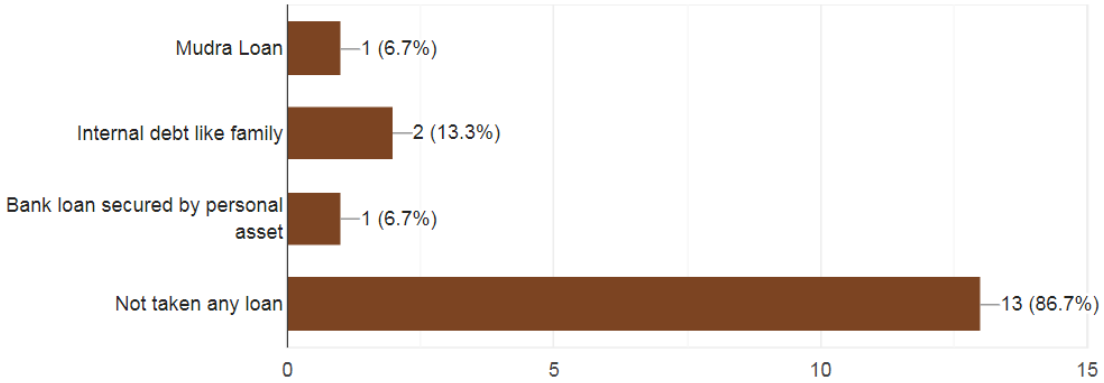
53.3% startups are registered under start up India scheme where as 46.7% are not registered.

How is the startup funded?



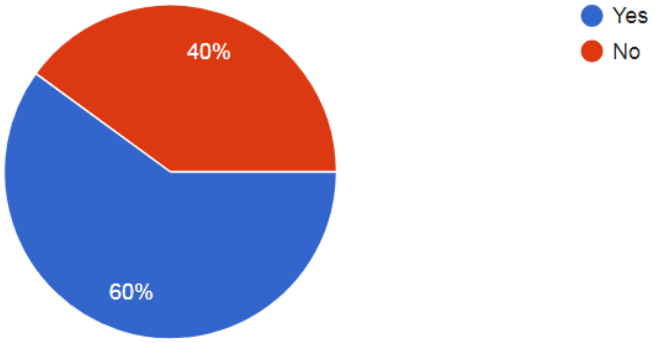
73.3% of start ups are funded by their own funds. 53.35 are from famiy and friends. 13.3% are from incubator and accelerator. Only 6.7% are funded by bank.

Which form of loans have the founders taken ?



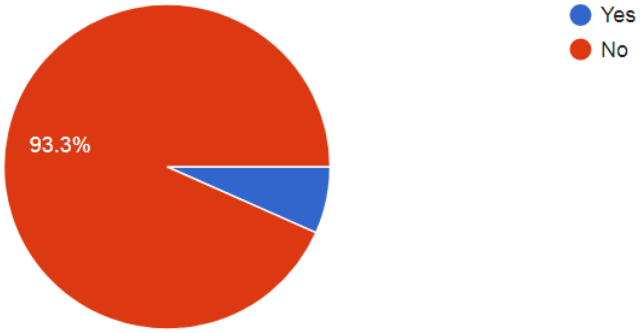
86.7% has not taken any loan, 13.3 % has borrowed money from their friends and family. Only 6.7% has taken mudra loan or secured loan.

How many founders are aware about the income tax eemptions for the start ups?



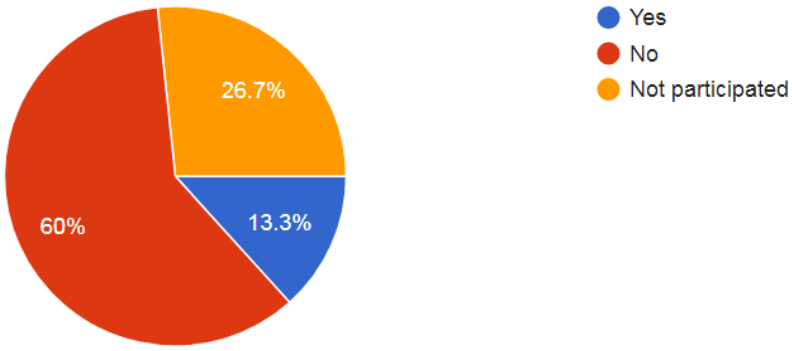
60% of the startups are awrae about the tax exemptions. 40% are not aware about the same.

Is startup eligible for funding or financial concession from government has it materialized?



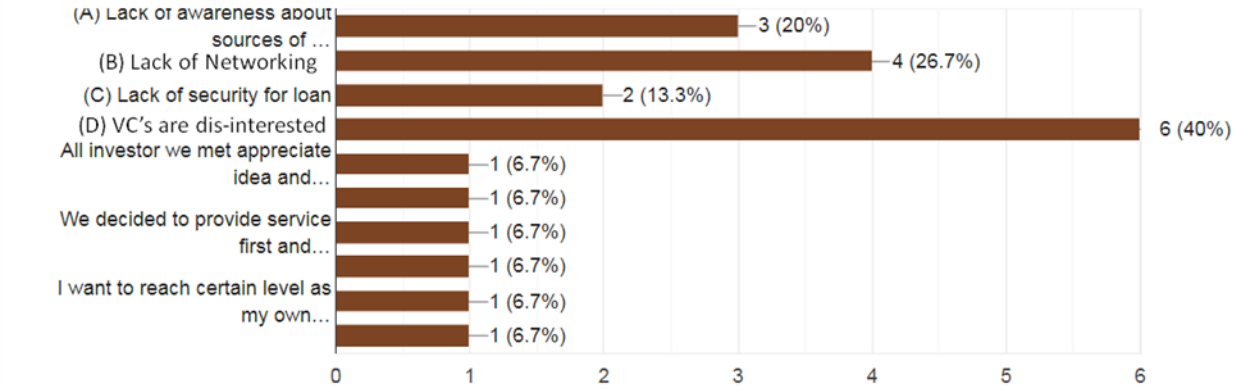
93.3% of strat ups did not receive any government funding.

Has the founder raised funds from pitching competitions?



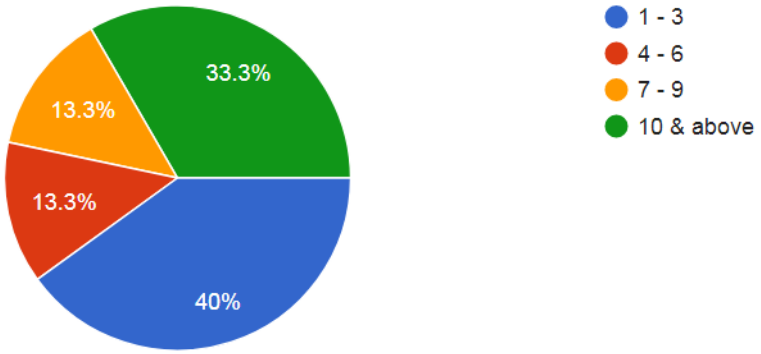
60% of startups even after participating in pitching competition did not raised funds from such competition. Only 13.3% raised from winning such compwtition. 26.7% never particiated in such competition.

What are the reasons which stop founders from raising the funds?



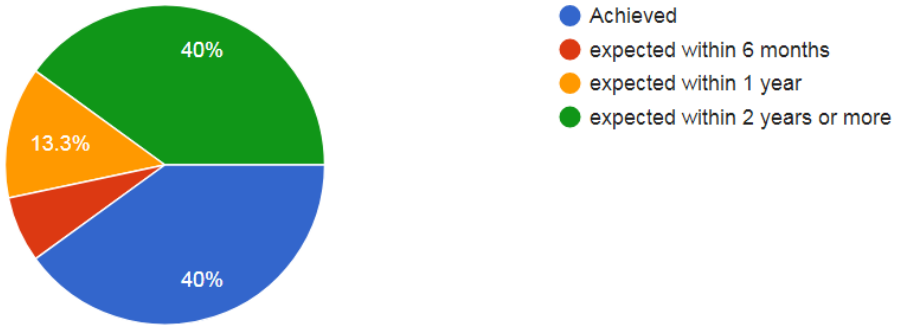
As per majority (40%) of startups VC's are disinterested and then they (26.7%) have lack of networking. Also 20% of them are not aware about different sources of funds.

How many people are employed in the start up?



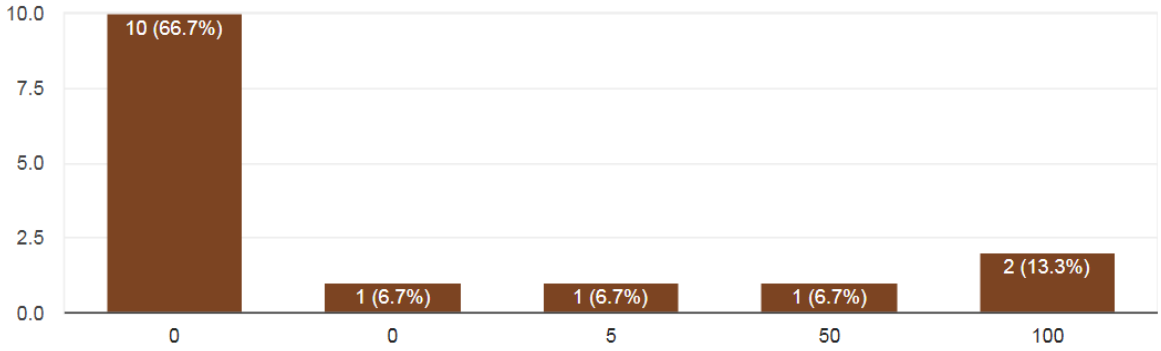
40% of startup has employee between 1-3. 33.3% has 10and above employee. 13.3% of them has employee between 4-6 or 7-9.

Has the founder achieved the break even point?



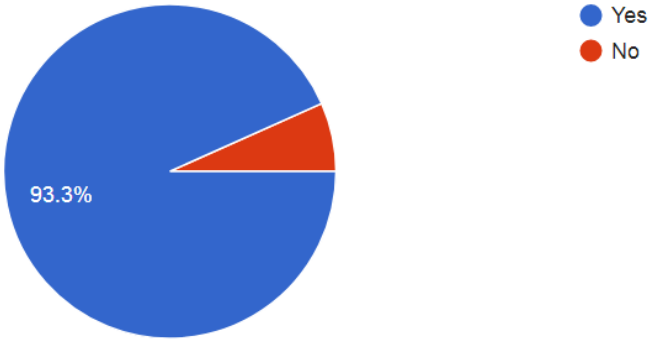
40% of start ups has achieved their brek even 40% are expecting within 2 years. Only 13.3% are expecting break even within 1 year.

What is the percentage of borrowed funds in startups capital structure?



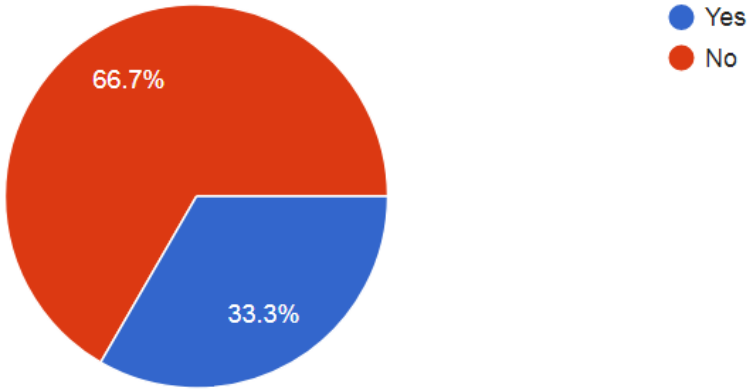
66.7% startups says that they have 0% debt fund. 6.7% has only 5% debt funds. 6.7% has 50% debts funds. 13.3% of startups has 100% debt funds.

How many startups are planning for expansion?



93.3% star ups are planning for expansion.

How many startups have an exit strategy?



66.7% of stratups does not have a exit startegy. 33.3% of them have a exit strategy.

FINDINGS & DISCUSSIONS:

As the Research is focused on Tech startups, amongst all startups IT domain startups play a big role. It indicates that IT domain startups are emerging in the coming era of Industry 4.0.

Entrepreneurship is now considered as preferable career option overcoming the taboo of secured job after completing higher education, as most of the start-up founders are post graduate, in fact for High Tech startup doctorates and equivalent qualified people are participating in the field of entrepreneurship.

The Zeal of being an entrepreneur is emerging and accepted, it can be analyzed as many founders even having professional background are inclined towards starting their own start up. In this research through the Entrepreneurship-cell of different institutes it could be understood that various student in their early stage of career are taking entrepreneurship seriously and starting own their own. It is observed that in most of the startups there is only one founder therefore it is noticed that founders are not finding easy to find likeminded people who can believe on their idea to be a cofounder with them.

It is notable that most of the startups are not incubated as very few are able to get supported by incubation centers or accelerator. That means there is lack of support in terms of mentorship which is required by startups. Most of the founders even those who are highly qualified mentioned during interaction that they require mentorship which is difficult to find.

Among all the respondent startups nearly half of them are registered with Startup India. That means they are taking the benefits provided by the Government through this scheme started by the current government in 2016. It is a certification from the government which builds a trust among the stakeholders.

Undoubtedly, finance is major concern for the startups on which this research is focused on. It is understood to know that majority of startups have invested their own funds for starting up i.e. Bootstrapping. Founders believe on their idea and passion for entrepreneurship made them to take risk and invest their own funds as initially they don't get funds from any other source. Secondly startups are supported from friends and family financially. But, borrowing from friends and family is considered as debt finance. There are few startups those are incubated with good

incubation center which are providing resources to the startups are also getting finance through incubation & investors.

The startups who has raised funds through Bank loan are very few almost negligible. While interacting with them it was found that they find it difficult to obtain loan as they don't have much securities to keep with the bank and there is lack for guidance w.r.t loan application and how to obtaining any loan. Because of such challenges the capital structure of startups does not have debt funds but majorly comprise of own funds. While understanding about the factors which are considered while raising the funds, it is considered most important to know that how easily one can raise the funds. Secondly, as a startup founder's, they are not up for easily diluting the control. For startups, tax benefits play least important role while selecting the sources of funds. Also, while structuring the capital as interest cost leads to tax benefits, the fact is not much considered as startup finance structure does not have much debt funds in their capital structure and they find it difficult to raise debt funds.

Majority of startups are aware about Tax benefits but still few are not aware and have knowledge about Tax exemptions which indicate that there is need for spreading such awareness about tax exemption which is provided by government to promote entrepreneurship.

There are various government concession and funding policies for promoting entrepreneurship having different eligibility criterion about which and it is found that most of them are not either eligible or don't have such policy for their domain. The materialization proportion among all start ups considered in this research is least.

In today's entrepreneurial world the Pitching competition & Business Plan competitions are another source of funding. But most of the startups participating in such events are unable to raise funds. Very few have raised funds through such competition. This is because the major challenge that startups face disinterest from Venture Capitalist, angel investors to invest in their startup. Some founder's are also finding it difficult because of lack of network because of which they are not able to reach sources of funds, VC's and investors.

While understanding the employee structure of startups it is understood that most of them have very few employee including founders as they cannot afford much expense of salary in fact they look for interns for doing their ground work.

Startups are very much interested in doing expansion and initially they bootstrap it without taking external funding. It is clear that they are open for expanding, collaborating with other organization and raising more funds to expand. It is also found that most of the startups don't have an exit strategy. This could be a major reason in terms of raising funds from Investors.

LIMITATION OF THE STUDY:

- This Research is conducted in a short span of time because of which no. of startups interviewed is less.
- As research is focused on finance aspects some of the startup founders were not comfortable to share the financial structure information of their start up.
- The relation between demographic factor and financial structure determinant of startups could not be measured due to limited no. of respondents.

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A Study Of Current Trends For Early Stage Startup Marketing In India

This research was conducted as a part of CREED Fellowship awarded by Entrepreneurship Development Institute of India, Ahmedabad

Umesh Rathod

Abstract:

Marketing is something that a lot of Indian Startups seem to struggle with. With less or no money/ budget for having right candidates the problems could be many. There are many opportunities that lie unexplored in this field which motivated me to pursue this research. The topic of research is, "Study of current trends for Early Stage Startup marketing in India", even today when startups see the word marketing their eyes glaze over but lot of things have changed. Today, consultants & entrepreneurs are engaging in what is called as magnetic marketing, which is attracting buyers & customers based on the usefulness of their content as well as through the authority of their personal brand.

This research studies the various current trends of startup marketing that can be understood as 'marketing with an entrepreneurial mindset'. By combining the definition of marketing and two conceptualizations of entrepreneurship (entrepreneurial orientation and entrepreneurial management), the definition of Startup marketing is known as the organizational function of marketing by taking into account innovativeness, risk taking, pro-activeness and the pursuit of opportunities without regard for the resources currently controlled. (Sascha Kraus, Rainer Harms, Matthias Fink, Int. J. Entrepreneurship and Innovation Management, Special Issue, 2009). Concentrating on entrepreneurial marketing w.r.t Indian startup ecosystem, this research illustrates the concept of startup marketing by highlighting marketing strategies. As a primary research instrument to know the response the questionnaire method was used with 100 different startups. It was comprised of dependent & independent variables.

With help of this research we came to know go-to-market strategy used by startups & now we can forecast the future trends of marketing by startups in India. Most of the early stage startups still believe in marketing by word of mouth, the startups do not have funds and look for events where they can talk about their product or service. Just because one has a startup doesn't mean they can't get creative with their marketing. But it's true in India very few startups ever think of offbeat channels of marketing as they are risky.

Keywords:
Entrepreneurial Marketing, Marketing, Early stage startups, Indian Startups, Marketing, Startups.

Introduction:

Two fundamental truths exist when marketing a startup. One is that a great product alone is not enough to succeed. The other is that no amount of marketing will make a crap product gain a mass audience. "***Nothing kills a bad company faster than good marketing***". Successful startup marketing requires that you have both a great product and great marketing.

The reason that I am particularly pursuing this research on startups is because a very large number of students are opening their startups or are joining existing startups after graduation. The number of startups is growing at an exponential rate, and I believe that this will be a continuing trend. Marketing is something that a lot of Indian Startups seem to struggle with. With less or no money/ budget for having right candidates the problems could be many.

Through this research we discuss study of various current trends of startup marketing that can be understood as 'marketing with an entrepreneurial mindset'. By combining the definition of marketing and two conceptualizations of entrepreneurship (entrepreneurial orientation and entrepreneurial management), we arrive at a definition of startup marketing as the organizational function of marketing by taking into account innovativeness, risk taking, pro-activeness and the pursuit of opportunities without regard for the resources currently controlled. The research illustrates the concept of startup marketing by highlighting marketing strategies currently being used by 100 different startups.

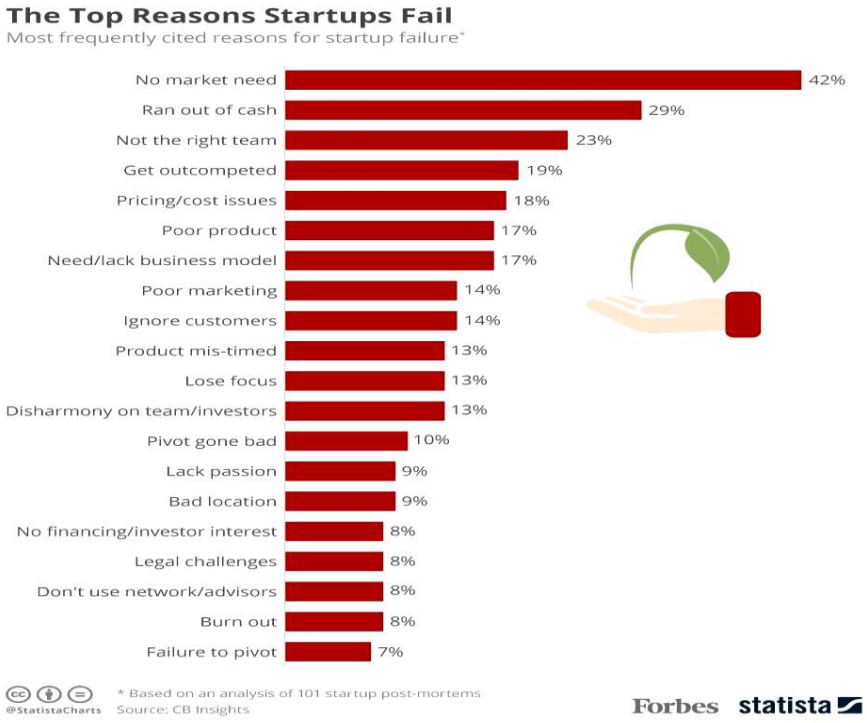
We also get a close insights into the availability of current appealing, diverse marketing tools used for early stage startup marketing in India. The research examines the impact of various external factors of targeting users by startups with the limited source of funds. Further, it we also questioned the startups on the various marketing tools be it modern i.e. Social Media, Internet, etc or traditional i.e. print, word of mouth, etc and figure out which trends are still being used by them and whether it aligns with their unique selling preposition.

Review of Literature

Over the years academicians and practitioners have observed that marketing implemented by small firms is unique from that employed by larger firms. Expanding on this idea, the observed marketing behaviour of an individual startup differentiates from mainstream marketing (Gilmore, 2010). Some authors have worked on these differences (i.e. Siu and Kirby, 1998; Hultman, 1999; Stokes, 2000; Gaddefors and Anderson, 2008). Summing up, "the process of managing entrepreneurial marketing differs from the process of managing regular approaches to marketing" (Collinson and Shaw, 2001, p.6)

Entrepreneurial marketing (EM) is a growing area of study. For that reason, it is important to develop its own branch, yet it is advisable not to lose track of where it comes from. Marketing and entrepreneurship must be regarded as solid mainstreams from which EM can supply concepts and ideas to evolve. Precisely, the present article expands on such mainstreams. Marketing and entrepreneurship have been recognized as having significant interrelations, and to get potentiated when jointly implemented (Morris and Paul, 1987; Athuahene-Gima and Ko, 2001; Bhuian et al., 2005).

A whole branch of literature is attempting to specify the synergistic effects and to prove it useful for all types of firms. Most of the advantages that EM provides are to be found in SMEs and in turbulent environments (Siu and Kirby, 1998; Davis et al., 1991), that is why, in some cases EM is applied in its constrained form; being, the EM definition, a not resolved issue (Hills and Hultman, 2006; Hills et al., 2010). Nevertheless, EM may be used by all sorts of firms in all kinds of contexts. Deriving from there, three lines of interest are outlined; namely marketable entrepreneurship (ME), entrepreneurial marketing (EM) and entrepreneurial marketing orientation (EMO). The former two refer to operative functions, such as those of new product development or marketing mix; while the latter describes a strategic extension that implies the intertwined effects of market (MO) and entrepreneurial orientations (EO). Down through the years, some startups really struck gold. When Accel Partners invested $14.8 million in a website called "thefacebook.com" back in 2005, they made a return of $5.6 billion - 378 times their original outlay. More often than not, however, startups tend to fail brutally. According to CB Insights, 70 percent of upstart tech companies fail, usually about 20 months after first raising financing. The failure rate is even worse for consumer hardware startups with 97 percent of seed crowd funded companies failing or turning into "zombies".



CB Insights delved into a compilation of startup failure post-mortems by founders and investors to shed light on why many ventures grind to a halt. The following info graphic shows the top - 20 cited reasons for failure with products or services that do not serve a market need in first position. Getting outcompeted is another reason related to bad market research or competitor analysis which cannot be ruled out by young startups. It is followed by poor marketing, as most of the startups are into tech today the founders also belong to the tech community. They have very

less or no knowledge of marketing, which makes the startup marketing a difficult job altogether for the founders.

Also some of the successful businesses have extensive knowledge about their customers and their competitors. Getting accurate and specific information about their customers and competitors is a critical first step in market investigation and the development of a marketing plan.

In developing a market plan, the startups primary functions are to understand the needs and desires of their customer, selecting or developing a product or service that will meet their customers' needs, develop promotional material that will make the customer aware, and ensure delivery of the product or service.

Market research helps startups/businesses to:

- Better understand the characteristics and preferences of customers.
- Identify opportunities to increase sales and grow business.
- Recognize and plan for problems in the industry and in the economy at large.
- Monitor the competition in the market.
- Reduce risk by making informed business decisions & not just relying on intuition or gut feeling.

Market research should be the primary driver of changes to a company's marketing mix – the combination of product, price, place and promotion. This is commonly referred to as 'the 4 Ps'. Using these components, one can put their startup in best possible position to reach the target market.

Aims & Objectives:

The aim of this study was to conduct an empirical research on the current marketing trends used by early stage startups in India.

The objectives were as followed:

1. Understanding what tools are used by early stage startups for their market research.
2. Analyzing marketing trends adopted by startups of different industry.
3. Does startup has an aligned marketing strategy in place?
4. Identifying how effective is their current marketing strategy.
5. Assessing application of market trends by startups.
6. Analyzing/determining integration of different marketing trends into market strategy given limited business knowledge.
7. Determining which are the most suitable marketing and preferred trend by startup.
8. To know the dimension of marketing problem for startups
9. Evaluating the reaction & responses of the customers in order to monitor the marketing success the startup.
10. Analyzing involvement of startup's in brand building marketing activities or short term sales strategy's.
11. Understanding go to market strategy used by startups.
12. Forecast the future trends of marketing by startups in India.
13. Providing policy makers with insights into the marketing issues faced by the early stage startups.

Methodology:

The Study: It is based on the current trends of marketing for early stage Startups.

The Sample: The sample size was 100 and the data have been collected according to the different tech start ups. Sampling technique is purposive. The data have been collected from the period February 2018 - March, 2018.

This research was conducted with the study through Secondary & Primary research to aid the completion of the research.

The **secondary research** includes articles, reports available in journals, books, magazines, EDII library literature & electronics media sources. The expectation from the secondary research included information on:

1. Indian Startup market dynamics & market share information
2. Promotional effect on the product
3. Modes of Marketing/Promotion
4. Brand history & progress so far

The **Primary Research** was carried out by interviewing the early stage startups at events with the following expectations & utilizing modes of online survey:

1. Understanding Initial launch & go – to - market strategy
2. Market understanding & opportunity Identification
3. Key behind focusing on offline & online channels
4. Spend distribution in marketing efforts

Data collection method:

To know the response, the researcher used questionnaire method, comprised of dependent and independent variable. It has been designed as a primary research instrument. Questionnaires were distributed to respondents and they were asked to answer the questions given in the questionnaire.

The questionnaires were used as an instrumentation technique, because it is an important method of data collection. The success of the questionnaire method in collecting the information depends largely on proper drafting. So in the present study questions were arranged and interconnected logically. The structured questionnaire will reduce both interviewers and interpreters bias.

Further, coding and analysis was done for each question's response to reach into findings, suggestions and finally to the conclusion about the topic.

Data Types:

Every decision poses unique needs for information, and relevant strategies can be developed based on the information gathered through research. Research is the systematic objective and exhaustive search for and study of facts relevant to the problem.

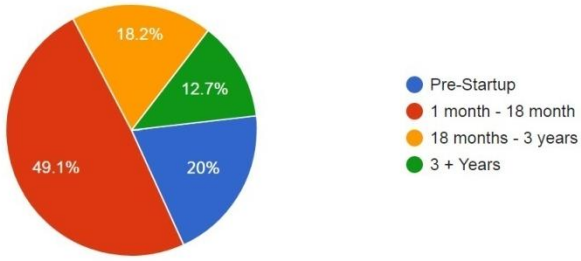
Research design means the framework of study that leads to the collection and analysis of data. It is a conceptual structure with in which research is conducted. It facilitates smooth sailing of various research operations to make the research as effective as possible.

Tools used for data analysis:

Bar charts and Pie charts are used for the comparison of the responses. Spread sheet of windows - XP, Microsoft Office 7 version has been used for the entry and the analysis of the data. Google form was used to get the online data filled by the startups.

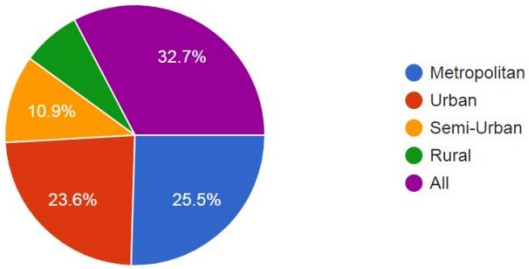
Observations & Results:

The chart shows the current stage of the sampled startups



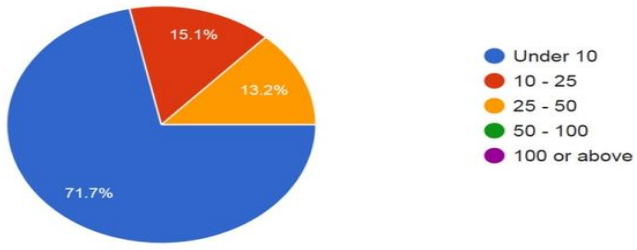
It is observed that among the total respondents of 100 start ups maximum (49.1%) start ups are in quite early age i.e. below 18 months. Followed by (18.2%) startups which are 18 months – 3 years old.

The chart shows the demograph served by the samples

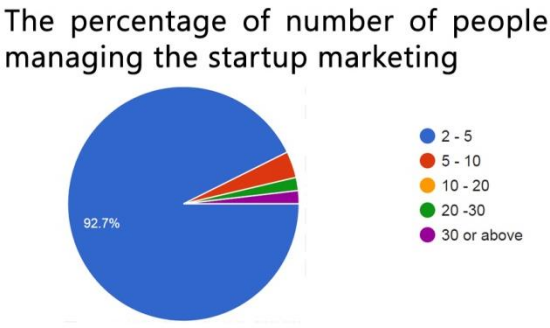


Majority of start ups serve the metro's with approximately 33.5%, followed by urban with 31.7%. We can clearly see that very few startups have rural demograph.

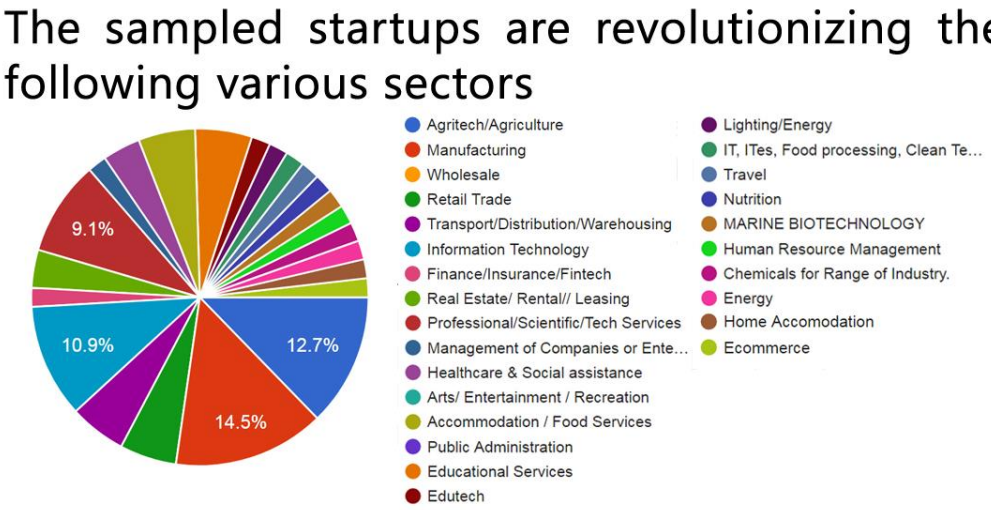
The percentage of number of people employed by the sampled startups



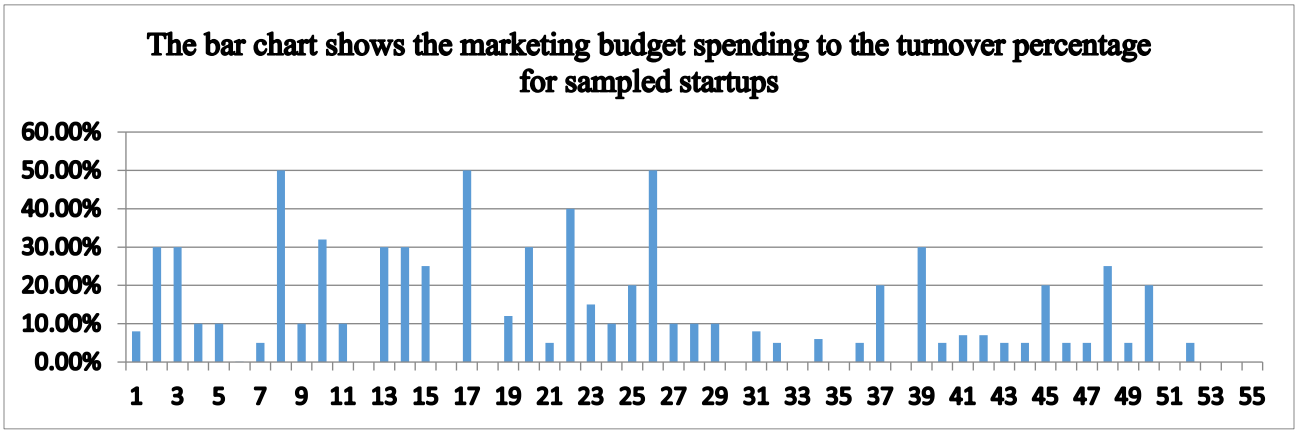
It is observed that an early age start up in India does not employ more 10 people, the start ups which are in 18 months – 3 years old are there who has team of 11 to 50 people.



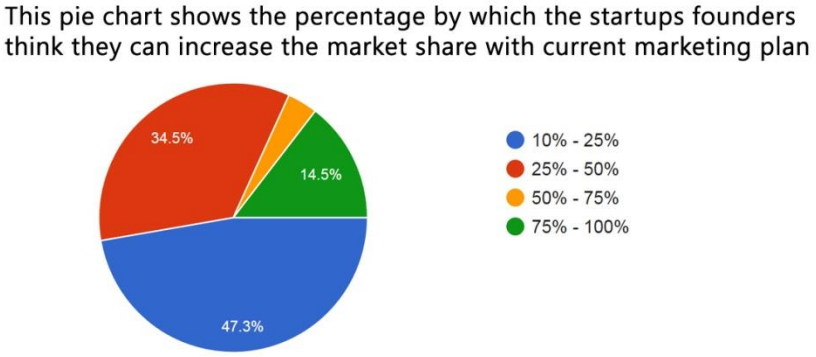
Very few people are assigned marketing in startup. In most of the start up marketing is given a very least concern 92.7% start ups has less than 5 people for marketing activities.



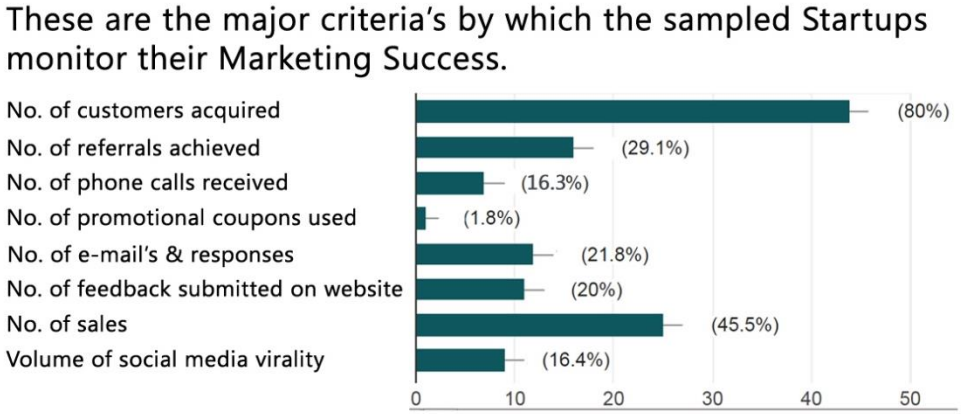
It shows that respondents belong to different industry and sectors. Data so collected is from multiple domain start ups. We have data from all the sectors.



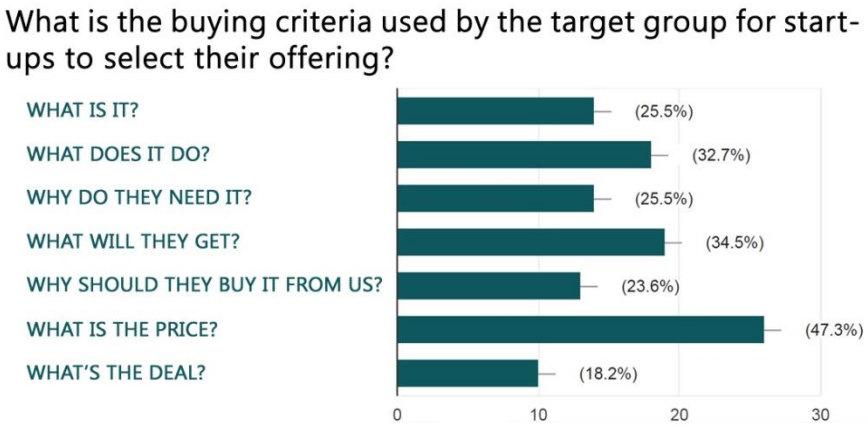
The above chart shows the marketing budget spend of the sampled startups, we can see that 3 samples have a spend of 50% of the turnover followed by 8 samples in between 30% - 40% and maximum startups spend between 10% -20% of their turnover.



With the help of current marketing plan 47.3% startups think that they can increase their market share by 10% - 25%. Followed by 34.5% startups who think they can achieve 25%-50%.



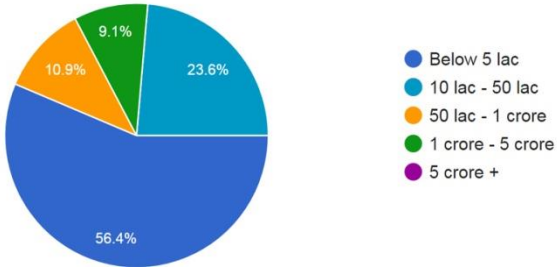
Almost 80 % of startups measure their marketing success as per no. of customer acquired. Followed by no. of sales (45.5%) achieved and no. of referrals achieved (29.1%)



Though having different marketing activities, price determination is most important decision for startups because target markets buying decision is influenced by price of product

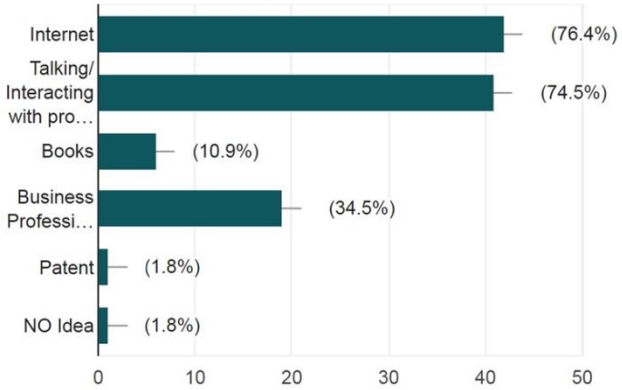
offered (47.3%). It is followed by what they will get in return (34.5%) and closely by the fact what does the product do (32.7%)

The following pie chart shows the annual turn-over of sampled startups



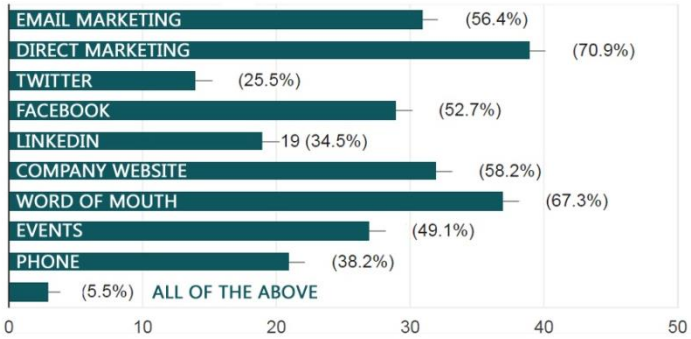
As seen earlier with the number of early stage startup samples we can see here that 56.4% have an annual turnover of below INR 5 lac & followed by 23.6% under the range of INR 10 – 50 lac. There are few startups that have got funding & have a turnover between INR 1 cr to 5 cr.

The tools used by startups to conduct Market Research



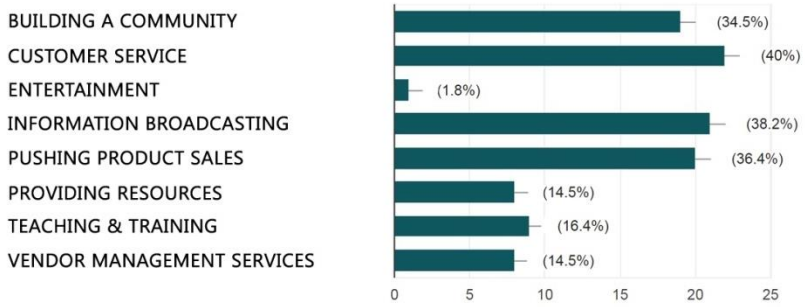
An interesting insight of what goes in doing a market research by startups. As we can see here, the startups believe on Internet (76.4%) based data slightly more than getting one to one feedback (74.5%). Nearly 34.5% startups approach business professionals to gain market understanding followed by some samples diving into books.

The channels which are frequently used by startups to engage the customers



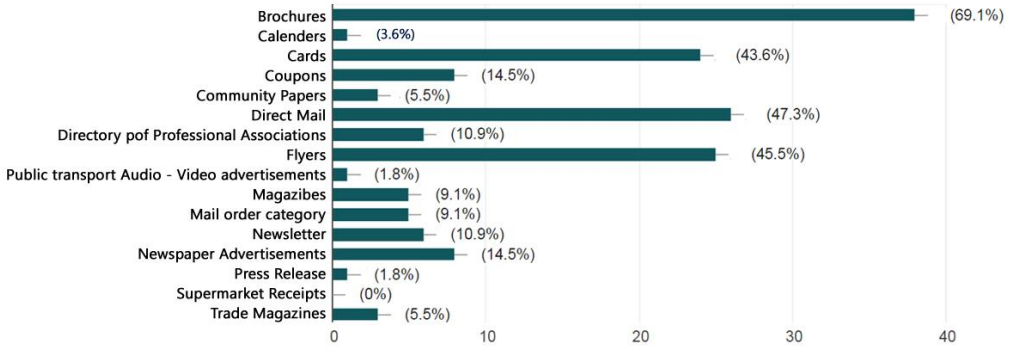
Through the various social channels available for startups to propagate the above bar chart clearly shows the top three choice of the marketing team which are; a) Direct Marketing (70.9%), b) Word of Mouth (67.3%) and a tie on third position between company website (58.2%) along with e-mail Marketing (56.4%).

The chart shows why the Startups have a web presence



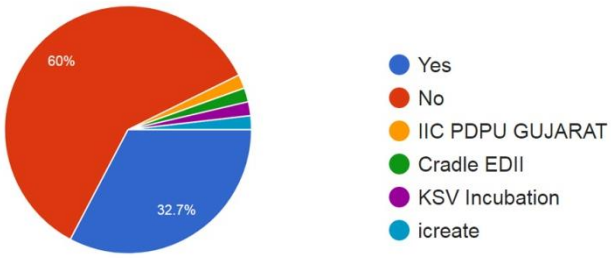
It is interesting to see that most of the startups have moved from just being information broadcaster to customer servicing and from pushing product sales to building a community.

The chart shows various traditional print channels of Marketing used by startups



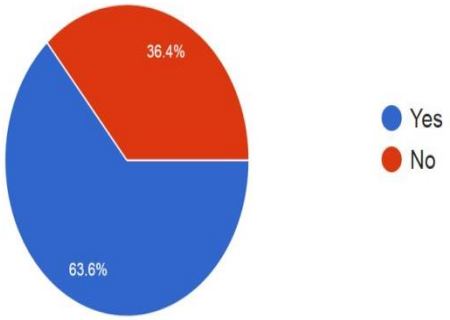
The traditional marketing still finds a vital place in the marketing, we can see the print channels used by startups starting with Brochures, Direct Mailers, Flyers and Cards largely compared with other traditional mediums. These sums up the cheap and easiest mediums compared to other print channels.

The chart shows the percentage of startups who have used incubation services



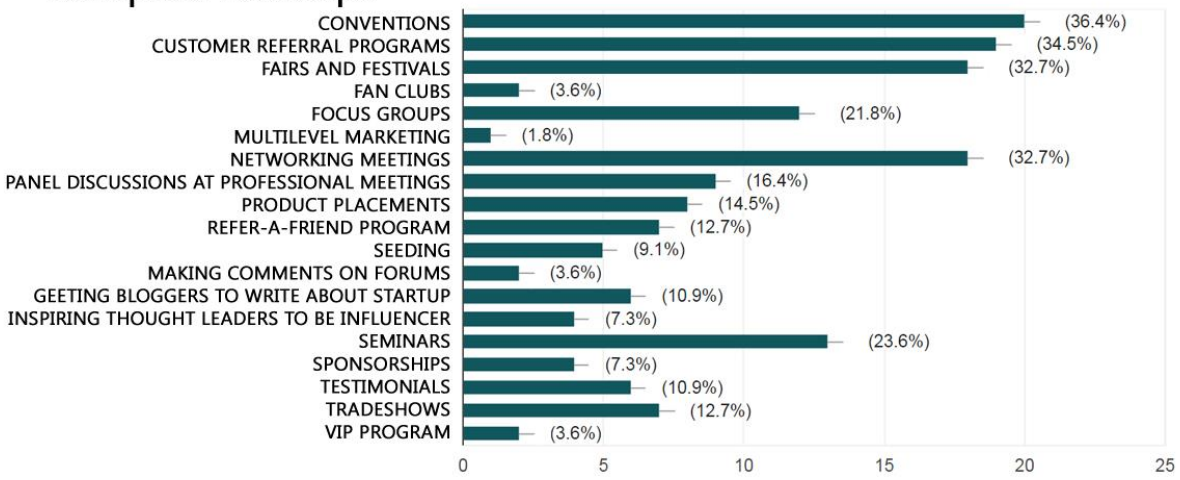
60% startups have not taken any kind of incubation or acceleration services. It is also noted that remaining 40% of startups have taken incubation or acceleration services from renowned incubators. This shows that there is an increase in the acceptance of incubation and acceleration in the startup ecosystem which play a vital role in Indian startup.

The chart shows how many startups have a compelling story to capture hearts & interests of their potential clients



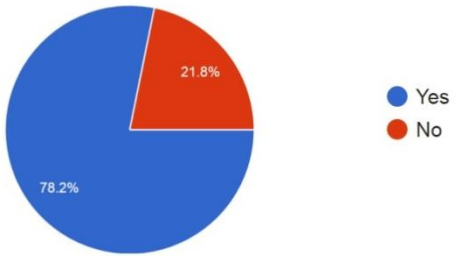
More than 60% samples had a compelling story to create a perception for their customer. It can be observed that 40% startups are either do not have a compelling story or are not able to create a compelling story for their customers. The lack of USP may be a reason for the same.

The chart shows channels of word of mouth used by the sampled Startups



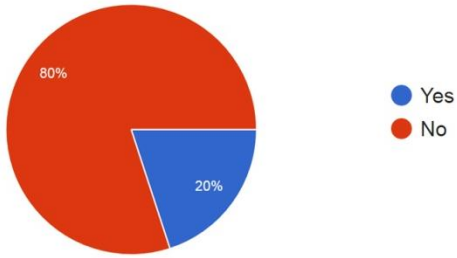
Most of the early stage startups still believe in marketing by word of mouth, the startups do not have funds and look for events where they can talk about their product or service. Here we can see conventions being the topmost priority, followed by customer referral programs, fairs and festivals, network meetings and seminars. It is also noted that startups are building a community of focused groups.

The chart shows how many startups are having a ready marketing plan & executing it.



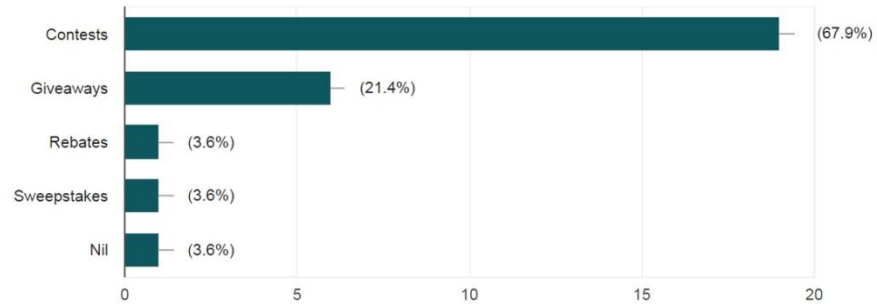
It is observed that 63.6% startups have compelling story to tell about their product or service as seen in the previous pie chart. But in this case, the startups having and executing their marketing plan is 78.2%. This shows that nearly 14.6% startups are marketing their product without the idea of their USP or a compelling story. This marketing will only create confused consumers. There is a need for these startups to introspect their marketing plan.

The chart shows how many startups have ever used Marketing consultancy services



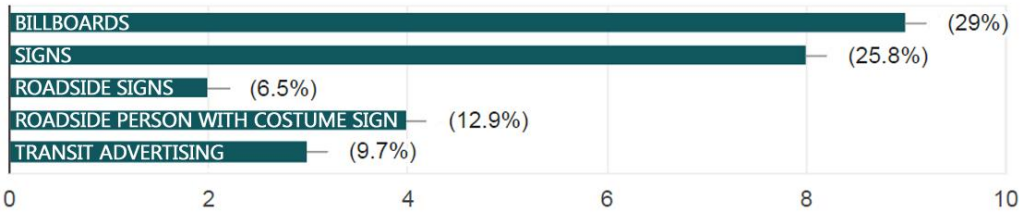
It indicates that 1/5th of sampled startups have only got in touch with consultants.

The chart shows the response of startups who used contests and giveaways for marketing promotions.



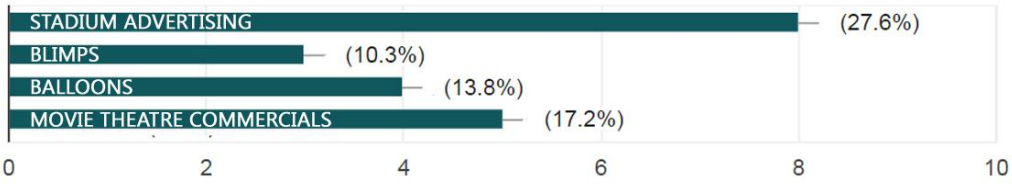
67.9% of startups opt for contests & giveaways (21.4%) mostly online. There are a great number of startups which have focused contests being conducted for target audience. Contests play a very important getaway for the startup to communicate with their customers. The startup gets an opportunity to know more about the taste and need of audience through this channel.

The chart shows the response of startups who used outdoor advertising channels.



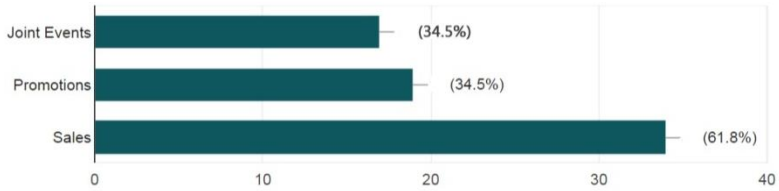
Outdoor advertising works well for promoting your product in specific geographic areas. Billboards, bus benches, and transit advertising can be very effective for startups. Outdoor sign is often the first thing a potential customer sees. The sign if bright and conspicuous can attract attention and sufficiently informative to let prospective customers know the product/service. It becomes clear that the young startups have focus on Billboards & Signs for their outdoor advertising campaign.

The chart shows the response of startups who used the offbeat channels for marketing.



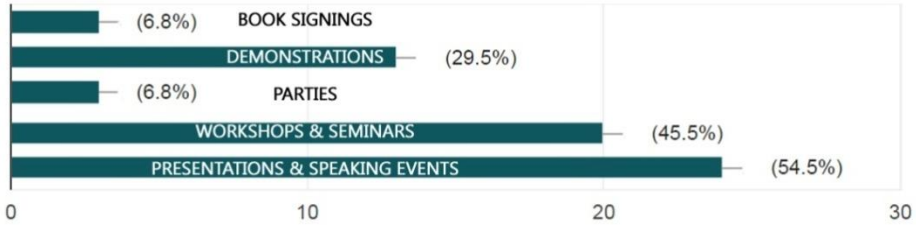
Just because one has a startup doesn't mean they can't get creative with their marketing. But it's true in India very few startups ever think of offbeat channels of marketing as they are risky w.r.t ROI.

The chart shows the response of startups who used the concept of joint ventures for marketing promotions.



Joint venture marketing is an agreement between two entities in this case startups in which both of them combine marketing strategies in order to increase their share of the marketplace and increase their revenues. We can clearly see that startup samples want to collaborate through joint venture for increasing sales and indirectly the market share. This follows with cross promotions and joint events.

The chart shows the response of startups who used various publicity events for marketing promotions.



Startups rarely utilize publicity events because of the price; however in the above chart we can see that a lot of startups are interested to share information about their product or services through presentation and speaking events followed by workshop/seminars and demonstrations.

Some of the USP's mentioned by the sampled startups are as followed:

1. Necessity commodity for every day need, an edge to be most used APP.
2. Information at your fingertips.
3. Unique features in our product and our last mile connect are our UPS.
4. Innovative approach, practical solutions, solid support.
5. Handholding Start-ups.
6. Offbeat.
7. Social enterprise.
8. Emerging Technology.
9. We give quality of the product with great customer flexibility & satisfaction.
10. Process & Product Innovation.
11. Intellectual property and novelty of services offered.
12. Farmers Wealth, Nation's Health.
13. Low Cost with maximum effect.
14. Braille system from visually impaired to enhance their educational quality and standards.
15. Video Curriculum Vitae.
16. Technology.
17. Customized white board.
18. Internet Advertising Platform.
19. Easy Online Trading.
20. Good Service.
21. Solving a Big Problem.
22. 1st Wi-fi energy meter manufacturers.
23. AgriTech Service.
24. Customized Room booking Business.
25. Design and Facilities.
26. AV,VR and Emerging Tech.
27. The Business Model.
28. Pocket Based Learning.
29. Solar Cooking.
30. Unique Agri Business Model.
31. Solving root level design issues.
32. Economical.
33. Service Response Time, Quality & Reliability.
34. Bridge between bidder and the department.
35. Innovative Wedding Reception Chairs.
36. Green & Clean Energy.
37. Turnkey solutions to set up restaurant.
38. Taste & Convenience.
39. Re-circulation & Renewable Energy.
40. Natural Taste/ Cost differentiation.
41. New Product.
42. Quick Transport.
43. Any Spares Online.
44. Fast Service.
45. World's First smart EduTech Solution.
46. Quality of Content.
47. Personalized Mentoring.

Limitations of the research:

- The research has been conducted in Ahmedabad city, though most the data was collected via online channels through google form and personal interactions during EDII Empresario the result of the study may differ if the study conducted in other regions.
- The sample size is limited i.e. 100. If the sample size will increase result may vary.
- Biased response of founders of startups also acts as a hurdle in the study.
- Unpredictable psychology of startup founders is also limitation in the study.

Scope for further research:

- There are limited independent variables in this research. If other independent variables are also involve than different aspects can be analyze through this research.
- This study examines only one of the founder's/ marketing person's perception. As the startup ecosystem is growing exponentially in India & if the research is done on the basis of startup team's perception, it will help to find out more insights.
- For more accuracy in results, the sample size must be appropriate that should fulfill the objective of the study
- This study can be fruitful to policy makers, marketing person's in startups, marketing consultants to know the challenges and needs of an early stage startup marketing.

Conclusion:

Through this research we were able to understand what tools are used by early stage startups for their market research. We also analyzed marketing trends adopted by startups of different industry. The research showed startup's alignment with the marketing strategies. We also judged how effective their current marketing strategy is after assessing the application of market trends by startups.

I have tried to analyze/determine integration of different marketing trends into market strategy given limited business knowledge. We came to know which are the most suitable marketing and preferred trend by startup & the dimension of startup marketing problem for startups. The results showed the reaction & responses of the customers in order to monitor the marketing success of the startup. We analyzed involvement of startups in brand building marketing activities or short term sales strategy's.

We have understood go to market strategy used by startups & now we can forecast the future trends of marketing by startups in India. I would like to bring this to the notice of the policy makers the marketing issues faced by the early stage startups. We need to hand hold them into creating a good market place in the ecosystem apart from the funding and mentoring done while starting. The major challenge lies in sustaining the business without hampering the inflow.

Most of the early stage startups still believe in marketing by word of mouth, the startups do not have funds and look for events where they can talk about their product or service. Here we can see conventions being the topmost priority, followed by customer referral programs, fairs and festivals, network meetings and seminars. It is also noted that startups are building a community of focused groups.

Just because one has a startup doesn't mean they can't get creative with their marketing. But it's true in India very few startups ever think of offbeat channels of marketing as they are risky w.r.t. ROI. We can clearly see that startup samples want to collaborate for increasing sales and indirectly the market share. This follows with cross promotions and joint events.

The startups in India have huge potential to become a problem solver for the world. We need to have the right support not only in starting up a business but also hand holding them through the journey, soon we will see India becoming the startup destination for the world.

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A Study On The Relationship Between Emotional Intelligence And Employee Engagement In Organizations

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ABSTRACT

Currently, in the corporate world, emotional quotient is equal to intellectual quotient that is nothing but Emotional intelligence. Emotional quotient is needed in any organization to perform its functions smoothly. The employee engagement level of any organization decides whether that organization is on the right track or not. To achieve growth in business and fulfil the need for market demand, employees need to perform with full of their potential. To find out a relation between emotional intelligence and employee engagement level questionnaire has shared with working people and studied their responses. This paper has found a relationship between these two qualities of employees through primary research.

***Keywords*:** Emotional Intelligence, Employee engagement

INTRODUCTION

Any organization needs smart, experienced people, but they also require people who are adept at dealing with changes, understand others. The emotional intelligence model has developed over the past 30 years-based analysis of strengths of leaders and they observed a well-balanced array of certain EQ capabilities which helps to create leaders for challenging roles. Several studies found a strong connection between emotional intelligence, driving change visionary leadership.

EMOTIONAL INTELLIGENCE DOMAINS AND COMPETENCIES

Every leader needs to build a balance of strengths across the emotional intelligence competencies to achieve outstanding results in business. Emotional Intelligence has divided into four major domains and 12 elements as shown in the following Table 1.

Self-awareness is all about your relationship with yourself. It is about to get to know an individual's strengths, weaknesses and identify emotions. Reading influential books and receiving feedback from your co-workers can help in self-awareness [3].

Self-management is a quality of collaboration with team members. Emotional self-control, a positive outlook can manage conflicts, rather than help to avoid the creation of conflicts. The best test of your ability to work with others is whether others are eager to work with you or not[3].

Social awareness includes empathy and organizational behavior. Empathy is all about understands what others are feeling; to understand others feeling one should be a good listener. Empathizer listens to understand issues and asks questions to 'peel the onion' and make the client comfortable to share his real concerns [3].

Sr No	***Domain***	***Elements***
1	Self-Awareness	1. Emotional Self-awareness
2	Self-Management	1. Emotional self-control 2. Adaptability 3. Achievement orientation 4. Positive Outlook
3	Social Awareness	1. Empathy 2. Organizational awareness
4	Relationship Management	1. Influence 2. Coach and Mentor 3. Conflict Management 4. Teamwork 5. Inspirational Leadership

Table 1: Emotional Intelligence domains and elements

Relationship management consists of various interpersonal skills like influencing, team workability and leadership. Several people are good at any particular skill like coaching and mentoring but they may not good in teamwork. Hence if they try to develop all these skills set in them. It will help them to be high on the emotional intelligence scale[3].

Boost your Emotional Intelligence:

Here are five steps for developing every individual's emotional intelligence.

1. Turn self- deception into self- awareness:

Most people rate themselves high on emotional intelligence yet only a few of them are high in EQ. Turning self-deception into self-awareness will not happen without constructive feedback. Such a fundamental step can help us to discover EQ related blind spots in our life[1].

2. Turn self-focus into other focus:

Those who are low on EQ, it's quite challenging for them to see things from others' perspectives. Anotherfocused approach can be developed by doing appreciation and acknowledgement of teammates' strengths, weakness and, other beliefs. This will lead to finding out opportunities for collaboration, teamwork, and networking[1].

3. Be more rewarding to deal with:

Rewarding people generally more cooperative, trusting and friendly but unrewarding doesn't. So, it's important for unrewarding people to each at an adequate level of interpersonal skill before asking someone for help. Proactively and frequently knowledge and resource sharing without any expectation can help to be a more rewarding person[1].

4. Control your temper tantrums:

A person with great Passion and intense enthusiasm can easily cross the line moodiness when pressure is on. But when such kind of situation occurs you can at least avoid stressful situations and control your anger by detecting your dark side of personality. You can inculcate tactics that can help you become aware of your own emotions in terms of how you and others also experience them[1].

5. Display humility, even if it's fake:

When a situation becomes challenging to perform, team members seek strong leadership meanwhile they also expect to be supported and counselled with humility to face the challenge. To develop this factor of EQ, it's needed to show fake confidence and humility. One's fake humility can help to hide one's arrogance[1].

Bankers, Lawyers, and consultants majorly work with clients or end-users or coworkers. Hence Emotional Intelligence helps to recognize networking, opportunities and adjust your approach. EQ helps a lot to build trust amongst co-workers, superiors, and clients also. Building a trust can takes years but it pays dividends.

Unlike Intellectual quotient, you can develop your emotional intelligence with the help of coaching. By simply writing down your moods daily, after a month you will get to know what you were feeling in the entire month frequently. As mentioned above 12 elements of EQ shows where everyone can develop emotional quotient which will be added on an employee's personality[4].

ENGAGEMENT OF EMPLOYEE:

Employee engagement is the extent to which employees have dedication and passion about their jobs, are committed to the organization, and put discretionary effort into their work. Employee engagement works beyond activities, games and events, eventually, it leads performance. Employee engagement helps to improve strategic alignment, motivating and relating employees, managing execution. Effective communication is one of the crucial factors of business success.

ESSENTIAL FACTORS IN KEEPING THE EMPLOYEE ENGAGED:

1. **Permission to play**: Employee forms a strong relationship between them and comes forward to take the risk and imagine new possibilities with one another. When they start playing together. Employees need to know that experimentation is not only allowed, but it's also actively encouraged.
2. **A common purpose tailored**: Common purpose helps employees to figure out which roles and responsibilities best align with their skillsets and where they're going to be most engaged and successful in the organization.
3. **A social contract**: According to HBR the seven common values that bind us together are: optimism, collaboration, learn from failure, embrace ambiguity, talk less and do more, ownership, and make others successful. These values are nothing but the behaviors that drive our social contract. They allow teams to grow themselves without needing lots of oversight and management, and they help people understand what success looks like.
4. **Bottom-up innovation:** The best new ideas and capabilities are often come from the bottom up through someone's personal energy and commitment. In a world where great talent is hard to find and harder to retain, companies succeed by keeping their employees happy, engaged, and fulfilled. These principles have helped IDEO go a long way in achieving that goal.

This study gives insights such as the traditional definition of engagement-"the willingness to invest a lot of efforts on the job" is no longer sufficient to fuel top performance in a world of relentlessly increasing demand. The problem is that "willing" doesn't guarantee "able".

After doing a broader analysis of 50 global companies, Towers Watson found that companies which had low employee engagement score had an average operating margin just fewer than 10 percent. Whereas companies with high traditional engagement had a slightly higher margin of 14 percent and the companies with the highest "sustainable engagement" scores had an average one-year operating margin of 27 percent. Shifting of organizations traditional focus on getting more out of people, to investing in meeting people's core needs so they're freed, fueled, and inspired to bring more of them to work, more sustainably is the new challenge for organizations[5].

Does workplace engagement really work? Yes, it begins with employers and employees truly valuing and investing in one another.

LITERATURE REVIEW-

Relationship between Emotional Intelligence and Employee Engagement: A Study of Leading Printing Press in NCR

"Tecnia Journal of Management Studies", April-September 2013 issue, Vol. 8,No.1, ISSN: 0975-7104

As emotional intelligence has a strong impact on employee engagement, nowadays companies are focusing on measuring EE during the hiring and selection process. This paper reveals the moderate positive and significant impact on the relationship between the dimensions of emotional intelligence such as well-being, self-control, emotionality, sociability with the employee engagement and impact of emotional intelligence. The Pertrides and Furnham (2006) questionnaire are used to calculate emotional intelligence whereas Utrecht and Bakker (2003) questionnaire are used to calculate the engagement scale. The author interpreted that if an employee can understand and manage his/her emotions well, then he/she will be more engaged. Out of four dimensions of emotional intelligence, well-being has a significant impact on employee engagement whereas the other three dimensions do not.

The Relationship between Emotional Intelligence and Employee Engagement with the Moderating Role of Gender

International Journal of Economics, Business and Management Research,Vol. 2, No. 02; 2018; ISSN: 2456-7760

Employees having emotional intelligence skills apart from logical and technical skills gain an advantage in today's highly competitive world. Also, the employees who are well directed to the organizations' goal and who know their roles and responsibilities i.e. who are more engaged in the organization feel more energetic and passionate to put their companies forward. Three dimensions of employee engagement i.e. physical, emotional and cognitive are taken into consideration. The analysis showed that there is a significant relationship between employee engagement and emotional intelligence but there is no potential impact of gender between employee engagement and emotional intelligence. The author suggested that in order to ensure advantage, organizations should include the evaluation of emotional intelligence ability into their recruitment process. The further suggestions are the professionals who control their feelings or emotions at workplace, who feels happy within workplace play an important role in terms of productivity; Engaged employees stay longer in an organization which results in stronger and healthier work environment; The level of emotional intelligence shall be taken into consideration when employees are evaluated for the leadership positions and in order to repair the professionals who have a negative mood in an organization, engagement programs should be organized.

Exploring the Relationship between Employee Engagement and Emotional Intelligence

Arora, Ridhi& Adhikari, Bhavana & Shetty, Devdhar. (2012). Exploring the Relationship between Employee Engagement and Emotional Intelligence. SSRN Electronic Journal. 10.2139/ssrn.2572514.

This research paper demonstrated that emotional intelligence plays an important role in influencing the performance and productivity of service sector employees. Pearson correlation analysis was used as a tool to determine the relationship between employee engagement and emotional intelligence. The findings of the study indicated that out of four factors which define emotional intelligence viz well-being, self-control, emotionality and sociability; well- being had a significant positive relationship with employee engagement while emotionality showed a significant negative relationship with employee engagement. The paper further explains that self-control and sociability are not significantly associated with employee engagement. The explanation for above conclusion could be- Service sector employees should be emotionally stronger as they have to deal with customers day and night and secondly, they might be satisfied with their lives and have high self-esteem. The paper concludes that emotionally stronger employees are more engaged as compare to who are emotional and employee engagement in the service sector are affected by emotionality and well-being factors of emotional intelligence.

The Impact of Emotional Intelligence Dimensions on Employee Engagement

International Journal of Management and Commerce Innovations ISSN 2348-7585 (Online) Vol. 3, Issue 1, pp: (376-387)

The author has studied the relationship between emotional intelligence and employee engagement by taking sample research of employees of Ministry of Oman. The research paper suggests that organizations should direct employees' emotions and hearts towards work and this can be attained by integrating emotional intelligence into the work environment. Based on the Law and Wong developed (2002) questionnaire which is derived from Mayer and Salovey emotional intelligence model and Schaufeli, Bakker and Salanova (2006)questionnaire, the emotional intelligence and employee engagement is measured respectively. The result of the analysis revealed a significant positive relationship between the ability to understand one's own emotions and employee engagement. The study also revealed that unlike other countries understanding others emotions has a negative impact on employee engagement. More than half of the respondents were female employees and Oman country do not encourage female employees to talk with male employees hence, understanding other's emotions do not have a significant impact on employee engagement. The research shows the use of emotions as well as the regulation of emotions relates positively to employee engagement. The limitation of the study is related to the sample of study which is taken from one region but, sample supposed to include all regions to generalize the results. Some variables such as employee experiences might have affected the relationship between the investigated variable.

Leader's Level of Emotional Intelligence and Its Influence on Employee Engagement: A Case Study

Werner D. Gottwal, Clifford Butler,Gary Robinson 3745484, Title-17, United States Code Microform Edition © ProQuest LLC

Exploratory research is done to find out how a leader influences employee engagement for those employees within the leader's span of control and the role of Emotional Intelligence on employee engagement. A leader's level of EI was measured with the Talent Smart Emotional Intelligence

ME Appraisal, semi-structured interviews and Watson employee engagement survey. The paper highlights on employee engagement can be a driving factor of individual and organizational performance, productivity, retention and financial performance. The barriers to influencing employee engagement included leaders not having enough time, employees with a fixed mindset or those who are not engaged and leaders working with remote employees. The limitation of this research paper is a small sample size (10) and the sample is taken from the same functional group i.e. Directors of financial firms which provides limitations for generalizing the findings of the study to a larger population.

Unpacking the Goal Congruence–Organizational Deviance Relationship: The Roles of Work Engagement and Emotional Intelligence

J Bus Ethics (2014) 124:695–711/DOI 10.1007/s10551-013-1902-0

This research paper put a light on the mediating role of work engagement as well as how this mediating effect moderated by emotional intelligence. The data is captured from 272 employees of IT sector of Ukraine. First, employees are invited to take a survey that contains questions about goal congruence, work engagement and emotional intelligence. Two weeks later same employees are encouraged to take another survey that contained questions about their organizational deviance. The results show that emotional intelligence moderates the positive relationship between goal congruence and work engagement and negative relationship between work engagement and organizational deviance such that these relationships become invigorated at higher levels of emotional intelligence. Further, the paper revealed that the extent to which work engagement channels goal congruence into lower organizational deviance is invigorated by employees' emotional intelligence. Limitations of this paper are the author's focus was on work engagement by employees but the level and extent of work engagement by superior and employee and the effect on each other. The survey was conducted targeting the specific industry but employee engagement requirement may vary from industry to industry.

Organizational Excellence: A Study of the Relationship Between Emotional Intelligence and Work Engagement in Process Improvement Experts

Thor, Scott, "Organizational excellence: a study of the relationship between emotional intelligence and work engagement in process improvement experts" (2012). Doctor of Business Administration (DBA). 10.

This research paper tells that two potential elements emotional intelligence and employee engagement may have an impact on the success process improvement experts working in environmental conditions where six sigma and lean processes are used to carry out day to day operations. It suggests that individual with high emotional intelligence outperform those with low emotional intelligence. It also suggests that organizations with high employee engagement are more successful than those with low employee engagement. The quantitative approach is used to measure emotional intelligence and employee engagement. Ultrecht work engagement scale is used to carry out a survey of 5187 employees. The correlation data analysis indicated a moderate statistically significant relationship existed between employee engagement and emotional intelligence (r=0.416). the correlation analysis indicated emotional intelligence predicted 17.3% of the variability in work engagement. The factors such as gender, education and organizational level had a significant effect on emotional intelligence, whereas age was found to have no effect. in addition to that education, organizational level years in the current position and work-related

certifications also had a significant effect on work engagement. Whereas, age, gender had no effect.

RESEARCH METHODOLOGY

To conduct this research, two standard questionnaires are used, one for emotional intelligence and another for employee engagement. For emotional intelligence trait-based, EQ test is followed and for employee engagement, Gallup tests are taken for reference.

The convenient research methodology is used to complete the research. For data analysis, Emotional quotient is considered as an independent variable and employee engagement is considered as a dependent variable. Using a social media platform, the survey link is shared with employees working in various organizations, to collect the data. This questionnaire also includes some personal questions like gender, age, work experience, organization name. These questions are added in the questionnaire to get validated responses from all respondents.

MEASURES

In accordance with objective study two standard questionnaire are utilized namely:

1. **Employee Engagement:** The Gallup Q12 engagement questions are used to determine the employee engagement of employees. There are 12 questions asked in the survey in which the employee rated themselves on the scale of 1 to 7. Gallup has studied survey results from more than 35 million employees around the world[17].
2. **Emotional Intelligence:** The Trait Emotional Intelligence Questionnaire (TEIQue) is used to determine Emotional Intelligence. It is a scientific measurement instrument based exclusively on trait EI theory and providing a comprehensive assessment of the emotional world of the individual [18].

DATA ANALYSIS AND INTERPRETATION OF RESULTS:

The responses from 109 employees of different gender, work experience, demographics and geographic areas are analyzed. The employees of age 22 to 57 years have participated in both the online and offline survey. The sample had 40% of female employees. The participated employee consists of 40% entry-level professionals, 46% of middle-level management employees and 14% senior-level management employees. Following chart shows the average values of emotional quotient, well-being, sociability, self-control, and emotionality and employee engagement.

Sr No	***Factors***	***Mean***
1	Emotional Quotient	4.59
a	Well-being	4.97
b	Sociability	4.27
c	Self-control	4.35
d	Emotionality	4.54
2	Employee Engagement	60.95

Table 2: Descriptive Statistics briefly

1. The average score of emotional intelligence is 4.59 which shows that there is above average level of emotional intelligence for the employees under consideration for the study.

2. The result also shows that the above-average level of well-being, sociability, self-control and emotionality is present in the employees. Out of four dimensions, well-being has the highest average score of 4.97.

Analysis: 1

Following hypothesis are formulated:

H0 – There is no significant correlation between Emotional Intelligence and Employee engagement.

H1- There is a significant correlation between Emotional Intelligence and Employee engagement.

In order to formulate the relationship between emotional intelligence and employee engagement, correlation analysis is done. The value of the relationship between both is 0.345 which indicates that there is a moderate relationship between the emotional intelligence and employee engagement.

A. The co-relation factor of EQ with all four domains is as follows-

	EQ	***EE***
EQ	1	
EE	0.34	1

Table 3: Correlation between Emotional Intelligence & Employee Engagement

The above table shows that there is a positive and significant correlation between Emotional Intelligence & Employee Engagement. Hence the alternate hypothesis is accepted.

Analysis 2

Multiple Regressions

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.4574
R Square	0.2092
Adjusted R Square	0.1788
Standard Error	10.3351
Observations	109.0000

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*	*Adjective*
Regression	4	2938.1710	734.5427	6.8769	5.95674E-05	(quiet)
Residual	104	11108.5996	106.8135			
Total	108	14046.7706				

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	24.5684	8.1336	3.0206	0.0032	8.4391	40.6977	8.4391	40.6977
Well Being	3.6813	1.6169	2.2768	0.0248	0.4749	6.8877	0.4749	6.8877
Self Control	2.5392	1.8137	1.4000	0.1645	-1.0574	6.1359	-1.0574	6.1359
Emotionality	-3.2626	1.4830	-2.2001	0.0300	-6.2034	-0.3219	-6.2034	-0.3219
Sociability	5.1181	1.6131	3.1728	0.0020	1.9192	8.3169	1.9192	8.3169

Table 4: The multiple regression results considering employee engagement is a function of 4 domains of emotional intelligence

Multiple regressions were conducted to examine the variance of employee engagement due to four domains of emotional quotient.

H0: There is no significant variance in employee engagement due to the four domains of emotional intelligence.

H1: There is significant variance in employee engagement due to four domains of emotional intelligence.

Multiple regression results show that the r-value is 0.45. So, there is significant variance in employee engagement due to the four domains of employee engagement. Hence, the alternative hypothesis is accepted and the null hypothesis is rejected. This indicates the employee engagement varies with wellbeing, self-control and sociability. Moreover, it more varies due to self-control.

Multiple regression equation, $\mathbf{Y = \alpha + B_1x + B_2x + B_3x + B_4x}$

Including value and parameters in multiple regression equation,

EE = 24.56 + 3.68*(Wellbeing) + 2.53*(Self-control) – 3.26*(Emotionality) + 5.12* (Sociability)

CONCLUSION

This study was carried out to analyses the relationship between employee engagement and emotional intelligence along with its four dimensions. Based on linear and multiple regression, there is a quite significant relation between employee engagement and emotional quotient. So, it can be interpreted that if the employee is able to manage his/her emotions in a better way than the employee can engage in a better way. The self-control domain has a major influence on employee engagement level whereas the other three domains i.e. well-being, emotionality and sociability don't have a significant impact on employee engagement. This research has helped to underline that emotional quotient influences employee engagement up to 20%.

IMPLICATIONS

This research helped to understand the correlation between emotional quotient and employee engagement. If any organization wish to enhance employee engagement and employee of that organization has good emotional quotient then the organization can focus on other parameters of employee engagement to increase the same. This can be a topic to study further.

LIMITATIONS

The sample is taken from employees of various organizations. The employee engagement perspective may vary from employee to employee and company to company. During the survey, the respondents rated themselves on their own perspective.

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A Study of Business Model Innovation in select sectors of the Indian industry

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ABSTRACT
Business Model Innovation is an important buzzword in business terminology. As per several case studies, reported in the business literature, the right Business model innovation has turned around the fortunes of not only companies but also industries. A successful innovation in the business model has resulted in superior profits and growth as compared to peer companies, than innovation only in the products and services. This study is intended to understand whether there has been any business model innovation, in three sectors, namely Auto, Pharma and FMCG.

INTRODUCTION
A "business model" comprises how a firm creates values, distributes value and appropriates the value. In order to create value, a firm has to invest either in human capital or increase R&D spend or enter into joint ventures. Also, a change in the business model, could lead to change in inventory levels, better relations with buyers and sellers. A seller would be willing to lend more and a buyer would pay-up sooner, which would be reflected in trade receivables and trade payables. Hence, for the purpose of this study, the following information has been tracked for the period 2014 to 2019 :-

- R&D spend
- Trade receivables
- Trade payables
- Wages
- Inventory levels
- Profits
- Turnover
- Share price
- BSE Sensitive Index
- BSE 500 Index

An indicator would be its spend on R&D and human resources, 2 key parameters for a business model innovation process. Inventory, trade receivables and trade payables have been considered as indicators of a business model innovation or a business transformation process, hence, these have been assessed.

Further, the way a company does business is also reflected in its Inventory management, trade receivables and trade payables, which is a surrogate for its "strength or clout" in the market, from

a buyer and a lender's perspective. Inventory management has been considered as a surrogate for innovation in the business model.

SCOPE

This study has been conducted on 4 companies each from three Industry sectors, namely Pharma, FMCG and the Auto sector.

METHODOLOGY

Secondary data from the company's annual report has been extensively reviewed, for all the companies selected for the study during the period 2014-2019.

RESEARCH DESIGN

The pharma sector, FMCG and the Automobile sector, were selected among all the industries, due to their prominence and importance as economic bell weathers.
The companies listed on the Bombay Stock Exchange were selected. In the pharma sector, only Indian companies having similar business profiles were selected and multi-national companies were left out, as their business models are different. Companies from FMCG and Auto were selected randomly.

RESEARCH OBJECTIVES

The research has been carried out, in order to understand if there has been a business model innovation by any of the companies or sectors, and to understand the correlation of the internal company indicators, across the other sectors and their comparison to the BSE sensitive index as well as one benchmark index, which is BSE 500.

The study is intended to provide if there is a relationship between the following :-

- profits and share price,
- Turnover revenue and share price
- R&D expenses and profits
- wages and profits
- profits and inventory
- profits and share price

Dependent variable and Independent variable.

Following are the dependent variables.	Following are the independent variables
1. Profits 2. Share price	1. Wages 2. Trade receivables 3. Trade payables 4. R&D expenses 5. Inventory

LIMITATIONS OF THE STUDY

Only three sectors and 4 companies have been selected for the study. Only companies listed on the Bombay Stock Exchange have been selected.

DATA METHODOLOGY

Data from the company's annual reports over the past 6 years was taken for the purpose of the study. The share price from the Bombay Stock exchange was considered to map the growth of the individual stock the BSE sensitive index and BSE 500 index.

HYPOTHESIS

There is a business model innovation in the Indian Pharma companies.

Data evaluation

Observations and Comments on the inventory

- **Pharma Industry :-**

Of the four companies, 2 reduced their inventories, while 2 increased their inventories. Inventories, among other aspects, point to a problem in forecasting the demand. The average inventory is about 20%, which is the highest amongst the three industries studied.

- **FMCG Industry :-**

Of the four companies, here as well, 2 companies reduced their inventories, while 2 increased their inventories. The industry average is about 7.3 %.

- **Automobile :-**

Of the four companies, except one company, the other three companies, reduced their inventory.

Observations and Comments on the R&D expenditure

- **Pharma Industry :-**

The industry average on R&D expenditure was about 8%, which is an indicator that the R&D expenses were being held back and the companies were being conservative.

- **FMCG Industry :-**

The FMCG had low R&D spend, which was typical for all the companies studied. The average expenditure was 0.26%. Thus R&D is not a major expense for this industry.

- **Automobile :-**

The Automobile sector spent an average of about 2% of their revenues on R&D. However, except one company, all others were cutting down on R&D, over the 5 year study period.

Observations and Comments on the Trade payables

- **Pharma Industry :-**

There was no consistent trend across the 4 companies, and the average was about 9.75%.

- **FMCG Industry :-**

The FMCG industry had an average Trade payable at 12.4% of the revenues, which is higher than the Pharma sector, during the period of the study, showing that the FMCG had a better clout over its vendors.

- **Automobile :-**

The Trade payables, either reduced significantly for one company, while it stagnated for the other companies studied.

Observations and Comments on the Trade receivables

- **Pharma Industry :-**

The trade receivables with an average of 21%, has increased over the last 5 years for three companies. This shows that it is largely a buyers market with intense competition, with customers delaying the payment.

- **FMCG Industry :-**

The trade receivables for the FMCG also increased for all the companies, over the 5 year study period, there by demonstrating that competition is increasing in this sector, for all the players. The average of trade receivables stood at 2.4%, which is much lower than the Pharma sector.

- **Automobile :-**

With an average of about 5%, the Auto sector, also showed an increase in the trade payable over the past 5 years, except for one company.

Observations and Comments on the wages

- **Pharma Industry :-**

The wages have decreased, in the pharma 4 companies studied, except one company, where the rate of salary increase has also reduced. The average wage bill is about 10%, the highest amongst the three industries studied.

- **FMCG Industry :-**

Of the 4 companies studied, 2 have reduced their wage as compared to the previous year. The average wage bill is about 5.5% of the revenues.

- **Automobile :-**

One company had a reducing trend of the wages, while the other three had slightly increasing trend. The average wage bill as a % of revenues is about 4%, which is the lowest among the three industries studied.

CONCLUSION

It can be concluded that the companies are not aggressively investing in R&D. There has been no significant increase in spending on wages, either. Overall there has been no significant impact on the trade payables, trade receivables or the inventory. Thus it can be concluded that there has been no business model innovation in the four companies selected in the study. Neither has there been a business model innovation in the FMCG or the Automobile companies, selected in the study.
However, the study also shows that each sector can learn the best practices from the other secto, and significantly improve their profits. Eg, the auto sector has a better inventory management system as compared to Pharma, whereas Pharma invests heavily into R&D. The wages in the Pharma are the maximum, which also correlates with the R&D spend. The trade receivables by the FMCG are the best in the comparative group, thereby confirming that Branding has an edge over commodity products, hence, Pharma should focus on speciality branded products.

Table 1

Industry average	Pharma	FMCG	Auto
Wages %	9.80	5.49	4.10
Trade payables %	9.75	12.40	14.04
Trade receivables %	20.57	2.41	6.13

Inventory %	19.94	7.33	6.27
R&D expenses %	8.11	0.26	1.94
Profits %	12.49	12.19	7.34

Table 2

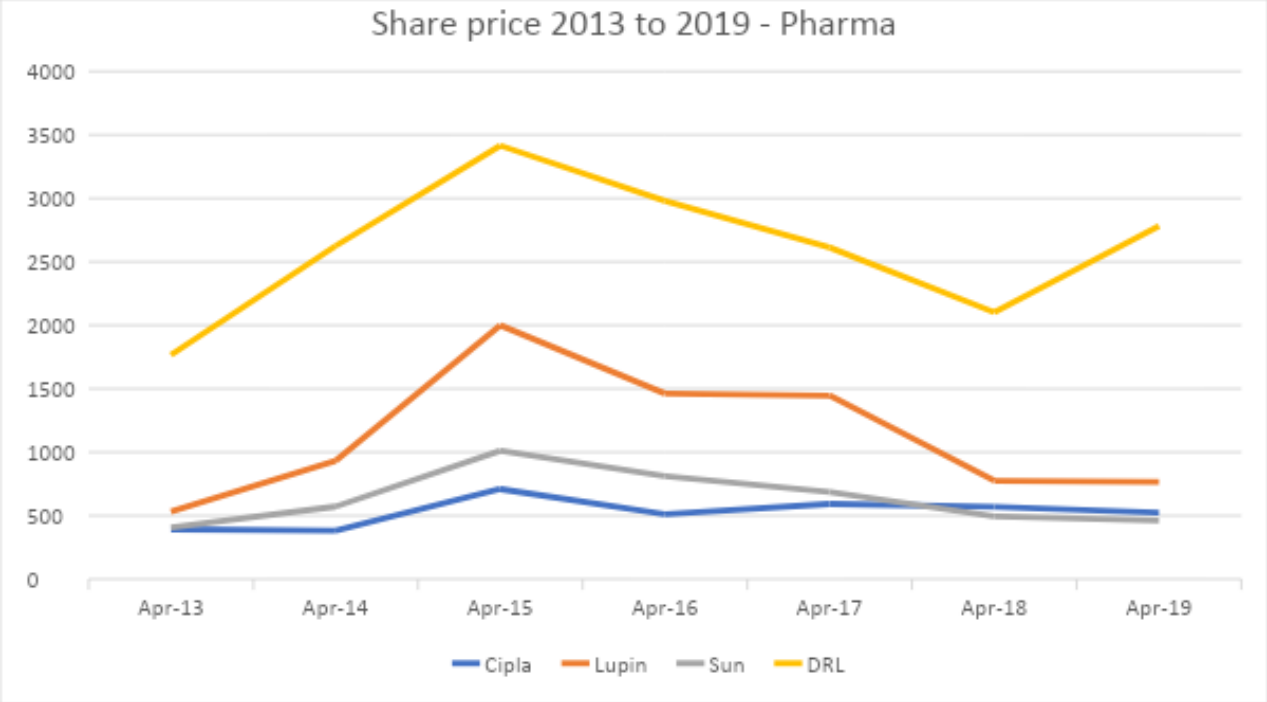

Table 3
Automobiles- Inventory (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Ashok Leyland	15.43	9.65	10.88	11.72	5.68	8.05
Bajaj Auto	3.07	3.67	3.05	2.99	2.76	3.01
Suzuki	3.96	5.26	5.5	4.1	3.85	3.86
Hero	2.6	3.07	2.32	2.6	2.46	3.64

Table 4
FMCG- Inventory (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
HUL	9.8	8.45	7.9	6.85	6.9	6.34
Colgate-Palmolive	6.22	6.28	6.97	5.53	5.19	5.52
Nestle	8.09	8.57	10.04	10.22	8.9	8.36
Britannia Industries	6.62	5.56	5.48	7.71	6.95	7.45

Table 5
Pharma - Inventory (% of turnover)

Company	2014	2015	2016	2017	2018	2019
Sun Pharma	19.42	20.69	22.55	21.64	25.97	27.13
DRL	12.05	11.63	10.99	12.85	13.07	13.1
Cipla	28.46	33.32	27.61	23.82	19.96	17.53
Lupin	18.54	19.11	22.01	20.69	22.98	13.5

Table 6
Pharma - R&D expenses % (% of turnover)

Company	2014	2015	2016	2017	2018	2019
Sun Pharma	5.83	6.34	7.47	6.66	7.75	6.56
DRL	9.38	11.77	8.23	9.7	12.86	10.14
Cipla	5.08	7.44	7.51	7.04	6.09	6.4
Lupin	8.09	8.38	11.11	9.16	8.85	6.73

Table 7
FMCG - R&D expenses % (% of turnover)

Company	2014	2015	2016	2017	2018	2019
HUL	0.26	0.2	0.18	0.08	0.07	0.05
Colgate-Palmolive	0.24	0.17	0.21	0.45	0.19	0.21
Nestle	0.44	0.29	0.28	0.33	0.26	0.22
Britannia Industries	0.16	0.23	0.55	0.56	0.3	0.32

Table 8
Automobile - R&D expenses % (% of turnover)

Company	2014	2015	2016	2017	2018	2019
Ashok Leyland	2.71	1.35	1.47	1.8	1.5	1.97
Bajaj Auto	3.07	3.67	3.05	2.99	2.76	1.43
Suzuki	1.48	1.29	1.02	0.8	1.01	0.83
Hero	0.49	2.57	3.57	2.23	1.48	1.6

Table 9
Pharma– Trade payables % (% of turnover)

Company	2014	2015	2016	2017	2018	2019
Sun Pharma	8.26	11.51	6.22	6.56	9.4	7.41

DRL	6.37	5.73	5.86	7.51	7.47	6.71
Cipla	9.62	13.9	7.18	8.87	10.26	8.88
Lupin	13.88	14.93	15.21	14.71	12.87	14.62

Table 10
FMCG– Trade payables % (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
HUL	20.07	17.05	17.19	16.71	20.11	18.38
Colgate-Palmolive	14.05	12.81	13.14	13.18	14.07	13.49
Nestle	6.96	7.39	9.64	8.66	9.71	10.74
Britannia Industries	8.77	9.68	9.21	7.5	9.23	9.85

Table 11
Automobile– Trade payables % (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Ashok Leyland	25.9	19.52	13.53	14.31	15.48	15.06
Bajaj Auto	10.12	8.11	8.58	9.19	12.05	11.87
Suzuki	11.23	11.13	12.24	10.52	12.8	11.2
Hero	8.91	10.16	9.54	8.63	9.94	10.01

Table 12
Pharma– Trade receivables % (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Sun Pharma	13.68	6.58	7.01	8.6	10.75	17.31
DRL	34.51	31.8	26.66	26.98	29.79	24.16
Cipla	16.1	17.66	13.75	13.25	15.35	19.36
Lupin	21.46	20.27	31.51	24.47	32.58	30.15

Table 13
FMCG– Trade receivables % (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
HUL	2.91	2.54	3.33	3.15	3.83	4.38
Colgate-Palmolive	1.51	1.73	2.42	2.85	4.6	4.66
Nestle	0.93	1.01	0.96	1.06	0.88	1.08
Britannia Industries	1.71	1.86	2.11	2.09	2.45	3.76

Table 14
Automobile– Trade receivables % (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Ashok Leyland	13.8	8.68	8	4.03	3.26	7.52
Bajaj Auto	3.82	3.23	3.04	3.92	5.54	8.02
Suzuki	3.34	2.25	2.38	1.51	1.78	2.69
Hero	3.58	4.88	4.42	4.43	4.55	7.99

Table 15
Pharma– Wages % (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Sun Pharma	1.46	4.67	4.6	4.36	5.57	4.95
DRL	8.91	8.27	9.26	10.86	11	10.68
Cipla	19.41	11.1	11.4	10.53	10.4	9.98
Lupin	10.73	10.79	12.17	13.55	15.05	15.61

Table 16
FMCG– Wages % (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
HUL	4.44	4.51	4.29	3.86	4.17	3.77
Colgate-Palmolive	5.31	5.7	5.74	5.4	6.01	5.75
Nestle	7.4	6.97	9.4	9.7	8.98	8.36
Britannia Industries	3.75	3.43	3.78	3.66	3.81	3.64

Table 17
Automobile– Wages % (% of turnover)

Company	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Ashok Leyland	7.73	8.74	5.83	5.62	6.34	5.51
Bajaj Auto	2.78	3.04	3.2	3.4	3.44	3.43
Suzuki	2.72	2.78	2.99	2.64	3.07	3.37
Hero	3.18	3.65	4.03	3.95	3.99	4.45

Table 18

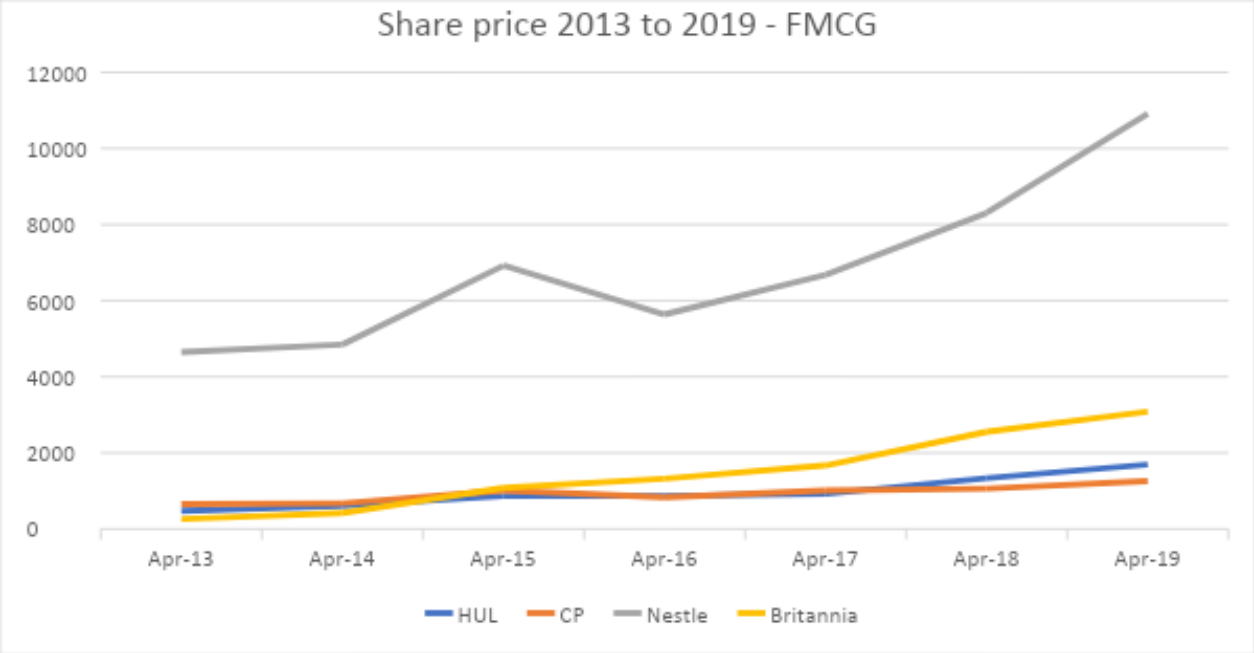

Table 19

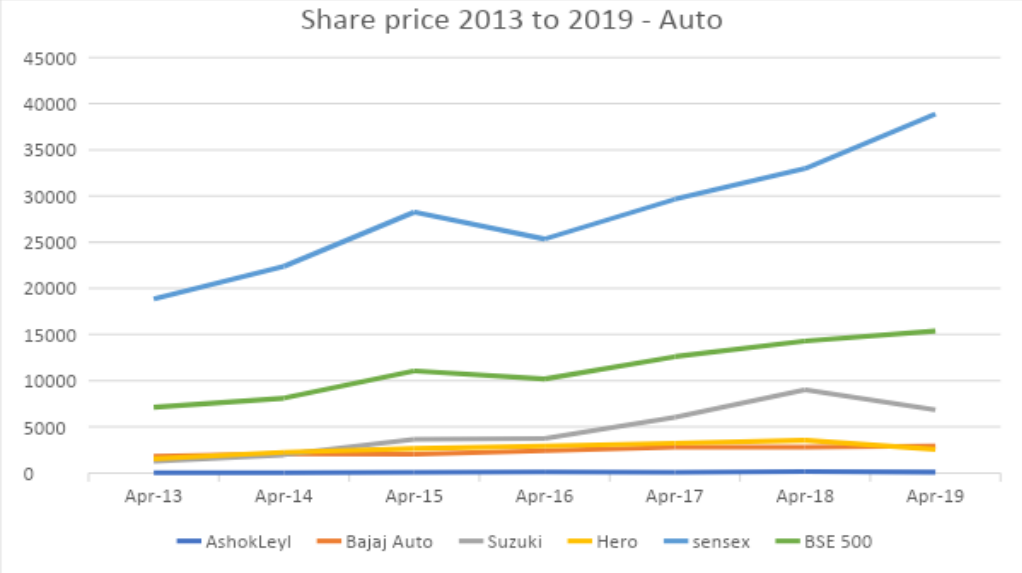

Table 20

Industry average	**Pharma**	**FMCG**	**Auto**
Wages %	9.80	5.49	4.10
Trade payables %	9.75	12.40	14.04
Trade receivables %	20.57	2.41	6.13
Inventory %	19.94	7.33	6.27
R&D expenses %	8.11	0.26	1.94
Profits %	12.49	12.19	7.34

In the Era of Industry 4.0 Sex Crimes against Women's In India - Should Rape Be Punishable by Death Penalty

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ABSTRACT

Today is the era of fourth industrial revolution. As India is a fast developing economy of the world and Women's plays an important role in the development of the economy of the country today. However, the increasing crimes against the women's in India are a matter of concern to the developing economy. Women population of the country is substantial and the Societies are known to be matured by the way it treats its women. Due to recent sex related crime i.e. rape or attempt to rape and increasing eve teasing and sexual harassment at work place, a need was felt to look into the opinion of the population of the country in the present era of Industry 4.0.

The authors tried to study the primary data collected from the respondents mainly related to opinion regarding sex related crimes against the women and solutions to control it. Various statistical tests were conducted including chi square, z test likert scale and pivot table to ensure that the opinions of the respondents is given due justice.

The Authors arrive to the conclusion that that most of the victims of the crimes against the women are ranging to about 5% and men about 2%, in all the three parameters i.e. eye-teasing, sexual harassment and abusive behavior/incidence i.e. rape or attempt to rape and they are in the age group of 21-35 years either single or married, with high qualification i.e. post graduation or graduation, employed either in private sector or students. The authors are also of the view that there is a need to take a review of the prevailing laws and amending them and also educating and understand the people, to protect the females from sex crimes and to enable them to live a respectful life in the society, and to enable the country to develop in the era of Industry 4.0 and move forward respectfully towards the era of Industry 5.0 in future.

KEYWORDS: Act, Crime, Capital Punishment, Eve-Teasing, Judiciary, Law. Molestation, Politician, Rape, Sexual Harassment, Solution, Victimization, Women.

INTRODUCTION

Industry 1.0 refers to the first industrial revolution. It is marked by a transition from hand production methods to machines through the use of steam power and water power. Industry 2.0; the second industrial revolution or better known as the technological revolution is the period between 1870 and 1914. The third industrial revolution or Industry 3.0 occurred in the late 20th century, after the end of the two big wars, as a result of a slowdown with the industrialization and

technological advancement compared to previous periods. It is also called digital revolution. Industry 4.0 is the subset of the fourth industrial revolution that concerns industry. The fourth industrial revolution encompasses areas which are not normally classified as an industry, such as smart cities, for instance. [1]

India is a fast developing economy of the world and Women's plays an important role in the development of the economy of the country today. Societies are known to be matured by the way it treats its women. The female populations are a substantial part of the society but always are not got the status and honour in the society. It's not only the status in the society but the crime against women defines the society. Domestic violence, unfair treatments in the work place, looking down upon the contribution and physical assault are some of the forms of ill treatment to women. The crimes don't get registered because of various reasons. The most prominent is the sexual harassment in families and work places,

Rape is unlawful sexual activity typically involving sexual intercourse done forcibly or under threat of injury against a person's will. Rape is a worldwide problem. It is estimated that approximately 35% of women worldwide have experienced some form of sexual harassment in their lifetime. In the majority of countries that have data available on rape report that less than 40% of women who experience sexual violence seek help. Less than 10% seek help from law enforcement.

Because many women who experience sexual violence rarely report or come forward about their incidences, exact rape numbers are challenging to report. While many countries have laws against the act of sexual assault and violence, many of them are insufficient, inconsistent, and not systematically enforced.

While people mostly hear about rape and sexual assault against women, men around the world also experience sexual harassment, sexual assault, and rape every day.

LITERATURE SURVEY

1.1 Ms. Kalaiyarasi [2015] in her Research Paper "Violence against Women in India" has looked into the concerns of the Women in India from the time of ancient society; medieval society and modern society. The methodology adopted was related to secondary data and had taken a look at a comparative statement between of crimes against women between Tamil Nadu and All India on head-wise incidence of reported Crime against women during 2011. In this she has looked into various crime heads i.e. Rape, Sexual Harassment, Indecent Representation of Women (Prohibition) Act, Dowry Prohibition Act, Molestation, Kidnapping and Abduction and Cruelty by Husband and his relatives. In this has observed that total crimes under all heads were 6950 i.e. .3.04% as compared to All India crimes under the said heads of 228569 crimes. She has also taken a look at the Form of Violence experienced by women throughout their lifespan from various phases which include Pre-birth, Infancy, Girlhood, Adolescence, Reproductive Age and Elderly. The author has also taken a look at the head-wise incidence of reported Crime against Women during 2008 to 2012 along with percentage variation in respect of ten heads. The author concludes stating that if these factors can be controlled then more than one form of violence can be prevented from harming an individual or society and India would be a much better place to live in. [2]

2.2 Devakunchari R, Bhowmick S, Bhutada S.P., Shishodia Y [2019] in their Research Paper "Analysis of Crimes Against Women In India Using Regression" has with the secondary data methodology has done in-detailed analysis of crimes against women from 2002 to 2011. They have used the regression as well as visualization for analyzing the crime patterns over to target with the awareness drives, the frequency of different states and thus, evaluate the effectiveness of the current security measures in all the states of the country. They have concluded that the knowledge gained from these can be given to the police and the various crime agencies to help them take better decision regarding prevention of crimes against women in India. They are also of the view that this approach can be quite effective and can be used globally. [3]

DEFINITIONS

3.01 Eve Teasing - The term eve teasing is referred as Sexual Assault or Sexual Harassment of women, verbally, or by making vulgar gestures or by winking, whistling or staring, in public places such as in streets, public transportation, park and many places of public meeting. [4]

3.02 Molestation – Any person who assaults a woman or uses criminal force on any woman with the intention to outrage her modesty is guilty of an offence under section 354 of the Indian Penal Code. He may also do so with the knowledge that by doing so he would be outraging the modesty of the woman. Any person who utters any word or makes any sound or gesture or exhibits any object with the intention that it will be seen or heard by such woman or will intrude up on her privacy is guilty of insulting the modesty of that woman. [5]

3.02 Sexual Harassment – As per The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 ("POSH Act"), the following is considered as Sexual Harassment.

- Physical contact and advances;
- Demand or request for sexual favours;
- Making sexually colored remarks;
- Showing pornography;
- Any other unwelcome physical, verbal or non-verbal conduct of sexual nature.

Also the following may amount to sexual harassment –

- Implied or explicit promise of preferential treatment.
- Implied or explicit threat of detrimental treatment.
- Implied or explicit threat about present or future employment status.
- Interference with work or creating an intimidating or offensive or hostile work environment.
- Humiliating treatment likely to affect health or safety. [6]

3.03 Rape – Section 370 of the IPC 1860 defines Rape as below:

A man is said to commit "rape" if he –

- penetrates his penis, to any extent, into the vagina, mouth, urethra or anus of a woman or makes her to do so with him or any other person; or

- inserts, to any extent, any object or a part of the body, not being the penis, into the vagina, the urethra or anus of a woman or makes her to do so with him or any other person; or
- manipulates any part of the body of a woman so as to cause penetration into the vagina, urethra, anus or any ~ of body of such woman or makes her to do so with him or any other person; or
- applies his mouth to the vagina, anus, urethra of a woman or makes her to do so with him or any other person, under the circumstances falling under any of the following seven descriptions:—

1. Against her will.
2. Without her consent.
3. With her consent, when her consent has been obtained by putting her or any person in whom she is interested, in fear of death or of hurt.
4. With her consent, when the man knows that he is not her husband and that her consent is given because she believes that he is another man to whom she is or believes herself to be lawfully married.
5. With her consent when, at the time of giving such consent, by reason of unsoundness of mind or intoxication or the administration by him personally or through another of any stupefying or unwholesome Substance, she is unable to understand the nature and consequences of that to which she gives consent.
6. With or without her consent, when she is under eighteen years of age.
7. When she is unable to communicate consent.[7]

OBJECTIVE OF THE STUDY

The objective of the research is:

i) To take a look at look at the countries of the world with the highest rate of rape including top ten countries.
ii) To study regarding awareness of Laws and Acts related to crimes against women's.
iii) To Study regarding awareness of Crimes against Women's in India.
iv) To Study regarding victimization of females and males of abusive behaviours/incidences.
v) To Study regarding reporting of victimization of abusive behaviours/incidences.
vi) To Study regarding the opinion towards Politician, Law Enforcement Authorities, Judiciary etc., attitude towards dealing crimes against women's.
vii) To Study the opinions to avoid such abusive behaviours/incidences.
viii) To Study the solutions to avoid such abusive behaviours/incidences.
ix) To Study the opinions towards Capital Punishment for Rape.

RESEARCH METHODOLOGY

It is an Analytical Research. The present study is based mainly on Primary Data available in form of collecting data through a questionnaire of Google form from all spheres of population. Also some Secondary Data from the websites are taken for comparing world rate of such abuse or incidence against the females. The data obtained is analyzed with pivotal tables, various statistical tools viz., Likertscale, Chi-square and Z Test.

DATA ANALYSIS AND RESULTS

6.1 Secondary Data Analysis and Results

Table 1: Countries with the highest rates of Rape (Number of incidents per 100,000 citizens)

Sl. No.	Country	Rate	Population 2019	Sl. No.	Country	Rate per lakh	Population 2019
1	South Africa	132.4	58,558,270	59	Senegal	5.6	16,296,364
2	Botswana	92.9	2,303,697	60	Morocco	4.8	36,471,769
3	Lesotho	82.7	2,125,268	61	Romania	4.7	19,364,557
4	Bermuda	67.3	62,506	62	Malta	4.7	440,372
5	Sweden	63.5	10,036,379	63	Bahrain	4.6	1,641,172
6	Suriname	45.2	581,372	64	Czech Republic	4.6	10,689,209
7	Costa Rica	36.7	5,047,561	65	Kuwait	4.5	4,207,083
8	Nicaragua	31.6	6,545,502	66	Poland	4.1	37,887,768
9	Grenada	30.6	112,003	67	Portugal	4	10,226,187
10	Saint Kitts And Nevis	28.6	52,823	68	Mauritius	3.9	1,269,668
11	Australia	28.6	25,203,198	69	Latvia	3.5	1,906,743
12	Belgium	27.9	11,539,328	70	Spain	3.4	46,736,776
13	United States	27.3	329,064,917	71	Russia	3.4	145,872,256
14	Bolivia	26.1	11,513,100	72	Croatia	3.2	4,130,304
15	New Zealand	25.8	4,783,063	73	Slovenia	3.1	2,078,654
16	Zimbabwe	25.6	14,645,468	74	Maldives	3	530,953
17	Saint Vincent & The Grenadines	25.6	110,589	75	Palestine	3	4,981,420
18	Barbados	24.9	287,025	76	Sudan	2.9	42,813,238
19	Iceland	24.7	339,031	77	Guatemala	2.9	17,581,472
20	Jamaica	24.4	2,948,279	78	Bulgaria	2.8	7,000,119
21	Peru	23.5	32,510,453	79	Singapore	2.7	5,804,337
22	Norway	19.2	5,378,857	80	Slovakia	2.6	5,457,013
23	Trinidad And Tobago	18.5	1,394,973	81	Hungary	2.5	9,684,679
24	Israel	17.6	8,519,377	82	Cyprus	2.5	1,198,575
25	France	16.2	65,129,728	83	Cameroon	2.4	25,876,380
26	Guyana	15.5	782,766	84	Algeria	2.4	43,053,054
27	Finland	15.2	5,532,156	85	Belarus	2.3	9,452,411
28	South Korea	13.5	51,225,308	86	Uganda	2.1	44,269,594
29	Chile	13.3	18,952,038	87	Kenya	2.1	52,573,973
30	Mexico	13.2	127,575,529	88	Jordan	2	10,101,694

31	Mongolia	12.4	3,225,167	89	Greece	1.9	10,473,455
32	Luxembourg	11.9	615,729	90	Georgia	1.9	3,996,765
33	Solomon Islands	11	669,823	91	Qatar	1.8	2,832,067
34	El Salvador	11	6,453,553	92	Montenegro	1.8	627,987
35	Ecuador	10.9	17,373,662	93	India	1.8	1,366,417,754
36	Ireland	10.7	4,882,495	94	Canada	1.7	37,411,047
37	Austria	10.4	8,955,102	95	Hong Kong	1.6	7,436,154
38	Moldova	10.3	4,043,263	96	Turkey	1.5	83,429,615
39	Bangladesh	9.82	163,046,161	97	United Arab Emirates	1.5	9,770,529
40	Uruguay	9.8	3,461,734	98	Ukraine	1.4	43,993,638
41	Germany	9.4	83,517,045	99	Sierra Leone	1.4	7,813,215
42	Netherlands	9.2	17,097,130	100	Bosnia And Herzegovina	1.2	3,301,000
43	Argentina	8.5	44,780,677	101	Andorra	1.2	77,142
44	Kazakhstan	8.4	18,551,427	102	Japan	1	126,860,301
45	Brunei	7.6	433,285	103	Guinea	1	12,771,246
46	Italy	7.6	60,550,075	104	Yemen	0.8	29,161,922
47	Sri Lanka	7.3	21,323,733	105	Syria	0.8	17,070,135
48	Colombia	6.8	50,339,443	106	Nepal	0.8	28,608,710
49	Belize	6.7	390,353	107	Albania	0.7	2,880,917
50	Thailand	6.7	69,625,582	108	Serbia	0.7	8,772,235
51	Oman	6.6	4,974,986	109	Turkmenistan	0.6	5,942,089
52	Denmark	6.4	5,771,876	110	Tajikistan	0.5	9,321,018
53	Philippines	6.3	108,116,615	111	Lebanon	0.5	6,855,713
54	Lithuania	6.3	2,759,627	112	Armenia	0.4	2,957,731
55	Paraguay	6	7,044,636	113	Mozambique	0.2	30,366,036
56	Estonia	6	1,325,648	114	Azerbaijan	0.2	10,047,718
57	Kyrgyzstan	5.9	6,415,850	115	Egypt	0.1	100,388,073
58	Monaco	5.7	38,964	116	Liechtenstein	0	38,019

Source: http://worldpopulationreview.com/countries/rape-statistics-by-country

Table 1 indicates the details of the countries with the highest rates of Rape (number of incidents per 100,000 citizens). As per the world population review 2020 of the population of 2019 that the below countries are amongst the top ten countries with the highest rates of rape (number of incidents per 100,000 citizens):

Table – 2: Top Ten Countries with highest Rape

1. South Africa (132.4)	6. Sweden (63.5)
2. Botswana (92.9)	7. Suriname (45.2)
3. Lesotho (82.7)	8. Costa Rica (36.7)
4. Swaziland (77.5)	9. Nicaragua (31.7)
5. Bermuda (67.3)	10. Grenada (30.6)

India ranks 93 (1.8% of the 1,366,417,754 population of 2019) in the list of 116 countries whereas USA ranks 13th (27.3% of the 329,064,917 population of 2019). It is also further observed that about 35% of women worldwide have experienced some form of sexual harassment in their lifetime. In the majority of countries that have data available on rape report that less than 40% of women who experience sexual violence seek help. Less than 10% seek help from law enforcement. Many women who experience sexual violence rarely report or come forward about their incidences, exact rape numbers are challenging to report. While many countries have laws against the act of sexual assault and violence, many of them are insufficient, inconsistent, and not systematically enforced. [8]

6.2 Primary Data Analysis and Results

Primary Data was collected in the available in form through a questionnaire of Google form from all spheres of population through social media channels viz., WhatsApp, Face Book, Linkedin etc., from all spheres of population to check the opinion of the population of India related to crimes against women's in India and whether there should be Death Penalty for crime like Rape, to put a check on the increasing rate instances recently in the country.

Table: 3 – Gender, Age, Marital Status, Academic Qualification, Employed and Occupation/Sector wise-break up.

Gender-wise break-up

Gender	Total	Percentage
Male	194	64.24
Female	108	35.76
Grand Total	**302**	**100.00**

Age-wise break-up

Age	Total	Percentage
14-21	02	0.66
21-35	220	72.85
36-50	29	9.60
Above 50	51	16.89
Grand Total	**302**	**100.00**

Marital Status wise break-up

Marital Status	Total	Percentage
Married	98	32.45
Widow/Widower	00	00.00
Divorcee	03	0.99
Single	201	66.56
Grand Total	**302**	**100.00**

Academic Qualification wise break-up

Academic Qualification	Total	Percentage
Below Matriculation	00	0.00
Under Graduate	05	15.63
Graduate	127	42.05

Employed wises break-up

Position	Total	Percentage
Yes	152	50.33
No	150	49.67
Grand Total	**302**	**100.00**

Occupation/Sector wise break-up

Occupation/ Sector	Total	Percentage
Public Sector	28	9.27
Private Sector	101	33.44
Unorganized Sector	03	0.99

Post Graduate	163	53.97
Other	07	2.32
Grand Total	**302**	**100.00**

Self Employed	26	8.61
Students	106	35.10
Retired/ Homemakers	38	12.59
Grand Total	**302**	**100.00**

6.2.1 Analysis of Six Questionnaire Parameters

6.2.1.1 Gender

Table 3 represents the Gender of participants in the survey. There were 302 participants. Of which 194 (64.24%) were Male and 108 (35.76%) were Female. The highest participation was by Males i.e. 64.24% as compared to 35.76% by Females.

6.2.1.2 Age –

Table 3 also represents the Age-wise break up of the participants. Of the 302 participants 02 (0.66%) were in the age group of 14-21 years, 220 (72.85%) were in the age group of 21-35 years, 29 (9.60%) were in 36-50 age group and 51 (16.89%) were in the age group of above 50 years. The highest participation was from the age group of 21-35 years i.e. 220 (7285%).

6.2.1.3 Marital Status –

Table 3 also represents the Marital Status-wise Break-up of the participants. Of the 302 participants 98 (32.45%) were Married, The participation of Widow/Widow was 0 (0.00%), whereas that of Divorcee was 03 (66.56) and the maximum participation was by those who were Singles i.e. 201 (66.56%).

6.2.1.4 Academic Qualification –

Table 3 also represents Academic Qualification wise-break up of the participants. Of the 302 participation the participation of Below Matriculation was 0 (0.00%), Under Graduates 05 (15.63%), Graduates were 127 (42.05%), there were total 163 (53.97%) participation of the Post Graduates in the survey and those with Other qualifications amounted to 07 (2.322%) of the total participation. The highest population was of the Post Graduates i.e. 163 (53.97%), followed by the Graduates 127 (42.05%).

6.2.1.5 Employed -

Table 3 also represents Employed wise break-up of the participants . It was observed that out of 302 participants 152 (50.33%) participants were employed, whereas 150 (49.67%) population was not employed.

6.2.1.6 Occupation/Sector -

Table 3 also represents the Occupation/Sector wise break-up of the participants . Of the 302 participants of the survey 28 (9.27%) were from Public Sector, 101 (33.44%) were from Private Sector, 03 (0.99%) from the Unorganized Sector, 26 (8.61%) were self employed, there was about

106 (35.10%) participation of the Students and remaining 38 (12.59%), were either retired or homemakers. Here too it is interesting to note that the highest participation was from Private Sector 101 (33.44%) and followed by 106 (35.10%) Students who normally fall in the age group of 21-35 years, which was highest participation in the age wise break-up.

6.2.2– Analysis of Questions -

Total 21 questions were put to test the opinion of the participants in the survey. The questionnaires was divided into eight different parameters/groups and were put up test according to gender, age, marital status, academic qualification, employment and occupation/sector. A detailed study of the data was done in respect of eight groups. However, for representation purpose the data in respect of Group I, one question is given as per Annexure – 2. The remaining data in respect of other seven groups is calculated in the same way. The group-wise analysis/observations of the 21 questions put to test is as below:

6.2.2.1 – Group – I – Awareness of Law -

6.2.2.1.1 - Table - 4: Awareness of POSH (Sexual Harassment) Act –

Gender	Yes	No	NC/ NS	Grand Total
Male	119	67	8	194
Female	77	28	3	108
Grand Total	**196**	**95**	**11**	**302**

Age	Yes	No	NC/NS	Grand Total
14-20	1	1		2
21-35	143	71	6	220
36-50	21	7	1	29
Above 50	31	16	4	51
Grand Total	**196**	**95**	**11**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	68	25	5	98
Widow/ Widower	0	0	0	0
Divorcee	1	1	1	3
Single	127	69	5	201
Grand Total	**196**	**95**	**11**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	3	2		5
Graduate	84	40	3	127
Post Graduate	104	52	7	163
Other	5	1	1	7
Grand Total	**196**	**95**	**11**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	105	41	6	152
No	91	54	5	150
Grand Total	**196**	**95**	**11**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	19	7	2	28
Private Sector	71	28	2	101
Unorganized Sector	1	2		3
Self Employed	15	8	3	26
Students	65	38	3	106
Retired/ Homemakers	25	12	1	38
Grand Total	**196**	**95**	**11**	**302**

It is observed from above Table – 4 i.e. Gender, Age, Marital Status, Academic Qualification and Occupation/Sector wise it was observed that Out of 302 participants, 119 (39.40%) Males and 77 (22.50%) females totaling 196 (64.90%) (Responded that they were aware (Yes) of POSH (Sexual Harassment) Act. Whereas of the 95 (31.46%) of which there were 67 (22.19%) Males and 28 9.27%) Females were not aware (No)- of the said Act. The remaining 11 (3.34%) i.e. 8 (2.65%) Male and 3 (0.99%) Females had no comments to offer regarding the awareness of the Act. In Age wise-wise the group between 21-35 were aware 143 (47.35%) of the Act, In Marital Status the Singles 127 (42.055%) were highest aware of the Act. As regards Academic Qualification Group the Post Graduate group was maximum aware i.e. 104 (34.44%) regarding the said Act. Those who were employed totaled about 105 (34.77%) who had maximum awareness of the Act and regarding Occupation and Sector the Students were maximum aware of the POSH Act i.e. 65 (21.52%).

6.2.2.1.2 - Table – 5: Awareness of Definition of Sexual Harassment at Work Place

Gender	Yes	No	NC/ NS	Grand Total
Male	148	31	15	194
Female	85	13	10	108
Grand Total	**233**	**44**	**25**	**302**

Age	Yes	No	NC /NS	Grand Total
14-20	1	0	1	2
21-35	170	30	20	220
36-50	22	6	1	29
Above 50	40	8	3	51
Grand Total	**233**	**44**	**25**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	82	11	5	98
Widow/ Widower	0	0	0	0
Divorcee	1	2	0	3
Single	150	31	20	201
Grand Total	**233**	**44**	**25**	**302**

Academic Qualification	Yes	Yes	No	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	2	2	1	5
Graduate	97	17	13	127
Post Graduate	129	23	11	163
Other	5	2	0	7
Grand Total	**233**	**44**	**25**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	130	15	7	152
No	103	29	18	150
Grand Total	**233**	**44**	**25**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	24	1	3	28
Private Sector	86	12	3	101
Unorganized Sector	3	0	0	3
Self Employed	20	4	2	26
Student	72	20	14	106

Retired/ Home Maker	28	7	3	38
Grand Total	**233**	**44**	**25**	**302**

It is observed from above Table – 5 of Gender, Age, Marital Status, Academic Qualification and Occupation/Sector wise it was observed that Out of 302 participants, 148 (49.01%) Males and 85 (28.15%) females totaling 233 (77.16%) (Responded that they were aware (Yes) of definition of Sexual Harassment at Work Place. However, it was surprising that of the 44 (14.56%) of which of which Males were 31 (10.26%) and 13 (4.30%) were females who were not aware (No) of the definition of Sexual Harassment at Work Place and the remaining 25 (8.28%) remaining of which 15 (4.97%) Males and 10 (3.31%) females had no comments to offer regarding awareness of definition of Sexual Harassment at Work Place.

6.2.2.1.3 - Table – 6: Awareness of Legal Definition of Rape.

Gender	Yes	Yes	No	Grand Total
Male	121	56	17	194
Female	67	27	14	108
Grand Total	**188**	**83**	**31**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	1	1	0	2
21-35	143	55	22	220
36-50	13	13	3	29
Above 50	31	14	6	51
Grand Total	**188**	**83**	**31**	**302**

Marital Status	Yes	No	NC/NS	Grand Total
Married	58	28	12	98
Widow/ Widower	0	0	0	0
Divorcee	1	2	0	3
Single	129	53	19	201
Grand Total	**188**	**83**	**31**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	4	1	0	5
Graduate	74	38	15	127
Post Graduate	105	43	15	163
Other	5	1	1	7
Grand Total	**188**	**83**	**31**	**302**

Employed	Yes	Yes	No	Grand Total
Yes	91	46	15	152
No	97	37	16	150
Grand Total	**188**	**83**	**31**	**302**

Occupation/ Sector	Yes	No	NC/NS	Grand Total
Public Sector	19	7	2	28
Private Sector	57	36	8	101
Unorganized Sector	3	0	0	3
Self Employed	16	4	6	26
Student	69	28	9	106
Retired/ Home Maker	24	8	6	38
Grand Total	**188**	**83**	**31**	**302**

It is observed from Table – 6 that total 121 (40.07%) Males and 67 (22.18%) Females responded being aware (Yes) of legal definition of rape, whereas 56 (18.54%) Male and 27 (8.94%) were not aware (No) of the same. Of the remaining 17 (5.63%) Male and 14 (4.64%) Females preferred not to offer any comments or were not sure of the legal definition of rape.

It can also be noticed that the maximum responses for awareness of legal definition of rape in the age-wise parameter was between the age group of 21-35, wherein the response was 143 (47.35%) Yes and 55 (18.21%) No. In the Marital Status also those who were Single 129 (42.71%) were aware of the same, whereas 53 (17.55%) were not aware. As regards Academic Qualification related parameters the Post Graduates 105 (34.77%) were maximum aware of the said definition, whereas it was followed by Graduates with 74 (24.50%). The No's were 43 (14.24%), followed by Graduates 38 (12.58%). As regards those employed 91 (30.13%) were bit aware of the same. Maximum those who were not employed 97 (32.12%) were aware of the definition. In the Occupation/Sector wise-parameter the maximum awareness was of Student s 69 (22.85%), followed by those employed in Private Sector 57 (18.87%).

6.2.2.2 – Group – II – Awareness of Crimes against Women's in India -

6.2.2.2.1 - Table – 7: Awareness of more crimes towards Women's in Urban Areas

Gender	Yes	No	NC/ NS	Grand Total
Male	65	39	90	194
Female	41	27	40	108
Grand Total	**106**	**66**	**130**	**302**

Age	Yes	No	No	Grand Total
14-20	1	0	1	2
21-35	77	47	96	220
36-50	9	10	10	29
Above 50	19	9	23	51
Grand Total	**106**	**66**	**130**	**302**

Marital Status	Yes	No	NC/NS	Grand Total
Married	38	20	40	98
Widow/ Widower	0	0	0	0
Divorcee	2	1	0	3
Single	66	45	90	201
Grand Total	**106**	**66**	**130**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	2	1	2	5
Graduate	48	27	52	127
Post Graduate	51	37	75	163
Other	5	1	1	7
Grand Total	**106**	**66**	**130**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	63	38	51	152
No	43	28	79	150
Grand Total	**106**	**66**	**130**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	9	6	13	28
Private Sector	39	32	30	101
Unorganized Sector	1	0	2	3
Self Employed	14	2	10	26
Student	25	21	60	106

Retired/ Home Maker	18	5	15	38
Grand Total	**106**	**66**	**130**	**302**

The above table 7 in Group II i.e. regarding awareness of Crimes against Women's in India. Aw regards opinion towards more crimes in Urban areas it was observed that 65 (21.52%) and 41 (13.58%) Females were of the view that it is more in urban areas. Whereas 39 (12.91%) Male and 27 (8.94%) women of the view that it is not more in urban areas, whereas maximum Male opined 90 (29.81%) that they have no comments to offer or were not sure of the same, the response of females 40 (13.245) in this regard was there.

In the other groups i.e. age-wise it was observed that the 21-35 age group was maximum of the opinion that crimes towards women are more urban areas. The Yes was 77 (25.50%) and No was 47(15.56%). The same was with the marital status group. The singles opined in favour 66 21.86%), whereas No were 45 (14.90%). In the Academic Qualification group the Post Graduates in support of the view were the post graduates 51 (16.89%) followed by graduates 48 (15.89%), whereas those who were not of the same opinion (No) was also more amongst the post graduates 37 (12.25%), and followed by graduates 27 (8.94%). Those employed 63 (20.86%) and not employed 43 (14.24%) were in support of the view. However, those not in support in employed were 38 (12.58%) amongst the employed and 28 (9.27%), but the maximum 79 (26.16%) not employed and next 51 (16.89%) preferred not to offer comments or where not sure of the same. Whereas that on Occupation/Sector wise parameter the more percentage 60 (19.87%) students were not sure or did not have any comments to offer in this regard.

6.2.2.2.2 - Table – 8: Awareness of more crimes towards Women's in Rural Areas

Gender	Yes	No	NC/ NS	Grand Total
Male	72	28	94	194
Female	53	14	41	108
Grand Total	**125**	**42**	**135**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	0	0	2	2
21-35	100	26	94	220
36-50	9	9	11	29
Above 50	16	7	28	51
Grand Total	**125**	**42**	**135**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	36	17	45	98
Widow/ Widower	0	0	0	0
Divorcee	2	1	0	3
Single	87	24	90	201
Grand Total	**125**	**42**	**135**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	1	1	3	5
Graduate	52	18	57	127
Post Graduate	68	23	72	163
Other	4	0	3	7
Grand Total	**125**	**42**	**135**	**302**

Employed	Yes	No	NC/NS	Grand Total

Occupation/ Sector	Yes	No	NC/ NS	Grand Total

Yes	69	26	57	152
No	56	16	78	150
Grand Total	**125**	**42**	**135**	**302**

Public Sector	6	7	15	28
Private Sector	53	15	33	101
Unorganized Sector	2	0	1	3
Self Employed	10	4	12	26
Student	36	11	59	106
Retired/ Homemakers	18	5	15	38
Grand Total	**125**	**42**	**135**	**302**

Table – 8 is for the expressing opinion whether crimes against women are more in Rural Areas. In this in the Gender wise parameter the Yes was of Male 72 (23.85%), whereas 53 (17.55%) females of the same i.e. However, the maximum 94 (31.12%) Men followed by 41 (13.58%) females preferred not to offer any comments or were not sure of the same. In age-wise parameter the maximum was 100 in 21-35 age group i.e. 100 (33.12), where as in the same group 94 (31.13%), were unable to view their opinion. In the marital status the response of Yes 87 (28.82%) was from the Singles, whereas the singles 90 (29.80%), were at the same time not sure of the awareness of crimes against women in rural areas. In academic qualification it was 68 (22.52%) of post graduates and of graduates 52 (17.23%), and regarding the post graduates with no comments it was 72 (23.85%) and graduates 57 (18.87%). Whereas in employed group those employed Yes were 69 (22.86%) and more i.e.. 78 (25.83%) were of those who were not employed were not aware of the same. In occupation/Sector wise parameter the private sector opinioned in favour by 53 (17.55%).

6.2.2.2.3 - Table – 9: Awareness of increasing crimes towards Women's in India.

Gender	Yes	No	NC/NS	Grand Total
Male	148	19	27	194
Female	103	1	4	108
Grand Total	**251**	**20**	**31**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	2	0	0	2
21-35	179	18	23	220
36-50	24	1	4	29
Above 50	46	1	4	51
Grand Total	**251**	**20**	**31**	**302**

Marital Status	Yes	No	NS/NC	Grand Total
Married	84	4	10	98
Widow/ Widower	0	0	0	0
Divorcee	3	0	0	3
Single	164	16	21	201
Grand Total	**251**	**20**	**31**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	4	0	1	5
Graduate	108	5	14	127
Post Graduate	133	15	15	163
Other	6	0	1	7
Grand Total	**251**	**20**	**31**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	131	9	12	152
No	120	11	19	150
Grand Total	**251**	**20**	**31**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	22	3	3	28
Private Sector	87	6	8	101
Unorganized Sector	2	0	1	3
Self Employed	25	0	1	26
Student	86	9	11	106
Retired/ Homemaker	29	2	7	38
Grand Total	**251**	**20**	**31**	**302**

It is observed from table 9 which indicates opinion regarding increasing of crimes against women. In gender wise parameter the Male were agreeable with 148 (49.01%) and Female 103 (34.11%), whereas in age-wise group 21-35 years were maximum Yes 179 (59.27%), in marital status 164 (54.31%). In academic qualification wise parameter the post graduates were 133 (44.04%) followed by graduates 109 (35.77%). That in employed the Yes were maximum 131 (43.38%) and in Occupation/Sector wise parameter the private sector were 87 (28.82%), followed by Students 86 (28.48%).

6.2.2.3 – Group – III – Victimization of Abusive Behaviours/Incidences –

6.2.2.3.1 – Table – 10: Victimization of Eve Teasing/Molestation.

Gender	Yes	No	NC/ NS	Grand Total
Male	8	167	19	194
Female	61	38	9	108
Grand Total	**69**	**205**	**28**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	1	1	0	2
21-35	48	155	17	220
36-50	11	14	4	29
Above 50	9	35	7	51
Grand Total	**69**	**205**	**28**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	23	65	10	98
Widow/ Widower	0	0	0	0
Divorcee	1	0	2	3
Single	45	140	16	201
Grand Total	**69**	**205**	**28**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	2	3	0	5
Graduate	29	91	7	127
Post Graduate	36	107	20	163
Other	2	4	1	7
Grand Total	**69**	**205**	**28**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	44	94	14	152
No	25	111	14	150
Grand Total	**69**	**205**	**28**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	8	17	3	28
Private Sector	29	66	6	101
Unorganized Sector	2	0	1	3
Self Employed	7	14	5	26
Student	19	78	9	106
Retired/ Homemakers	4	30	4	38
Grand Total	**69**	**205**	**28**	**302**

Table 10 indicates opinion regarding victimization of the population due to eve teasing/molestation. The females voted maximum 61 (20.20%), Yes and 167 (55.30%) Males were no victim of the same. In age-wise parameter also the same age group of 21-35 totaling 48 (15.89%) were Yes and in the same group 155 (51.33%) were No. In marital status parameter the maximum victim were the s ingles Yes of 45 (14.90%), followed by married 23 (7.62%). In academic qualification wise parameter again the post graduates 36 (11.92%), followed by the graduates 29 (9.61%) opined that they were the victim of eve teasing/molestation. Of the 44 (14.58%) in respect of those employed were victim. As regards Occupation/Sector the 29 (9.60%) were from private sector followed by students i.e. 19 (6.29%) were victim.

6.2.2.3.2 – Table – 11: Victimization of Sexual Harassment at Work Place

Gender	Yes	No	NC/ NS	Grand Total
Male	4	179	11	194
Female	10	96	2	108
Grand Total	**14**	**275**	**13**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	**0**	**2**	**0**	**2**
21-35	**6**	**208**	**6**	**220**
36-50	**5**	**22**	**2**	**29**
Above 50	**3**	**43**	**5**	**51**
Grand Total	**14**	**275**	**13**	**302**

Academic	Yes	No	NC/	Grand

Marital Status	Yes	No	NC/ NS	Grand Total
Married	8	84	6	98
Widow/ Widower	0	0	0	0
Divorcee	0	1	2	3
Single	6	190	5	201
Grand Total	**14**	**275**	**13**	**302**

Qualification			NS	Total
Below Matriculation	0	0	0	0
Under Graduate	0	4	1	5
Graduate	6	117	4	127
Post Graduate	7	150	6	163
Other	1	4	2	7
Grand Total	**14**	**275**	**13**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	12	136	4	152
No	2	139	9	150
Grand Total	**14**	**275**	**13**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	4	22	2	28
Private Sector	6	93	2	101
Unorganized Sector	1	2	0	3
Self Employed	1	24	1	26
Student	1	100	5	106
Retired/ Homemakers	1	34	3	38
Grand Total	**14**	**275**	**13**	**302**

Table 11 is indicating victimization of sexual harassment at work place. 10 (3.31%) Females and 4 (1.32%) Male's responses Yes that they were victim of sexual harassment at work place. In age-wise parameter 6 (1.99%) were from the age group of 21-35 years and 3 (0.99%) were form the age group above 50 years. The married females 8 (2.64 %) and the singles 6 (199%) were victim of sexual harassment at work place. In academic qualification wise group 7 (2.32%) post graduates and 6 (1.98%) graduates were victim. From those employed 12 (3.97%) and those not employed 2 (0.66%) were victim and at the same time. Whereas amongst the employed 4 (1.32%) and not employed 9 (2.98%) preferred not to offer any comments. It is also seen that from private sector 6 (1.99%), public sector 4 (1.325) and total all together 14 (4.63%) of the survey population were victim of sexual harassment at work place.

6.2.2.3.3 – Table – 12: Victimization of Abusive Behaviour/Incidence

Gender	Yes	No	NC/ NS	Grand Total
Male	6	177	11	194
Female	17	86	5	108
Grand Total	**23**	**263**	**16**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	0	2	0	2
21-35	15	196	9	220
36-50	3	23	3	29
Above 50	5	42	4	51
Grand Total	**23**	**263**	**16**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total

Academic Qualification	Yes	No	NC/ NS	Grand Total

Married	13	76	9	98
Widow/ Widower	0	0	0	0
Divorcee	0	1	2	3
Single	10	186	5	201
Grand Total	**23**	**263**	**16**	**302**

Below Matriculation	0	0	0	0
Under Graduate	0	5	0	5
Graduate	5	116	6	127
Post Graduate	18	136	9	163
Other	0	6	1	7
Grand Total	**23**	**263**	**16**	**302**

Employed	**Yes**	**No**	**NC /NS**	**Grand Total**
Yes	19	126	7	152
No	4	137	9	150
Grand Total	**23**	**263**	**16**	**302**

Occupation/Sector	**Yes**	**No**	**NC/NS**	**Grand Total**
Public Sector	5	22	1	28
Private Sector	10	87	4	101
Unorganized Sector	1	2	0	3
Self Employed	3	20	3	26
Student	3	100	3	106
Retired/ Home Maker	1	32	5	38
Grand Total	**23**	**263**	**16**	**302**

Table 12 is regarding victimization of abusive behavior/incidences (rape or attempt to rape). In it 17 (5 .63%) females have reported Yes, whereas 6 (1.99%) Male have reported Yes. However, 5 (1.65%) Females and 11 (3.64%) Males have preferred not to offer any comments in this regard. Out of the 23 (7.62%) maximum was in the age group of 21-35 years, married were 13 (4.31%) and singles (10%), academic qualification wise the post graduates were maximum 18 (5.96 %), followed by Graduates 5 (1.66%). Amongst the 23 (7.62%) 19 were employed and 4 (1.33%) of the victims were not employed.

6.2.2.4 – Group – IV – Reporting of Abusive Behaviours/Incidences –

6.2.2.4.1 –Table – 13: Reporting of Eve Teasing/Molestation to Teachers/Parents/Family/ Superiors

Gender	Yes	No	NC/NS/Not Required			Grand Total
Male	1	7	19	167	186	194
Female	29	30	11	38	49	108
Grand Total	**30**	**37**	**30**	**205**	**235**	**302**

Age	Yes	No	NC/NS/Not Required			Grand Total
14-20	0	1		1	1	2
21-35	17	29	19	155	174	220
36-50	7	4	4	14	18	29
Above 50	6	3	7	35	42	51
Grand Total	**30**	**37**	**30**	**205**	**235**	**302**

Marital Status	Yes	No	NC/NS/Not Required			Grand Total
Married	13	9	11	65	76	98
Widow/ Widower	0	0	0	0	0	0
Divorcee	1	0	2	0	2	3
Single	16	28	17	140	157	201
Grand Total	**30**	**37**	**30**	**205**	**235**	**302**

Academic Qualification	Yes	No	NC/NS/Not Required			Grand Total
Below Matriculation	0	0	0	0	0	0
Under Graduate	0	2	0	3	3	5
Graduate	12	16	8	91	99	127
Post Graduate	17	18	21	107	128	163
Other	1	1	1	4	5	7
Grand Total	**30**	**37**	**30**	**205**	**235**	**302**

Employed	Yes	No	NC/NS/Not Required			Grand Total
Yes	19	24	15	94	109	152
No	11	13	15	111	126	150
Grand Total	**30**	**37**	**30**	**205**	**235**	**302**

Occupation/ Sector	Yes	No	NC/NS/Not Required			Grand Total
Public Sector	5	3	3	17	20	28
Private Sector	12	16	7	66	73	101
Unorganized Sector	1	1	1	0	1	3
Self Employed	2	5	5	14	19	26
Student	8	11	9	78	87	106
Retired/ Homemakers	2	1	5	30	35	38
Grand Total	**30**	**37**	**30**	**205**	**235**	**302**

Group IV is related to reporting of abusive behaviours/incidences. It indicates that 29 (9.60%) of Females and 1 (0.33%), Males reported the incidence, whereas 186 (61.59%) Male's ad 49 (16.23%) females have preferred not to offer ant comments in this regard. Age wise also in the age group of 21-35 years, 17 (5.62%) and in the age group 35-50 years 7 (2.32%) and above 50 years 6 (1.99%) reported the act. Amongst those married 16 (5.30%) Singles and 13 (4.30%) married reported. As regards academic qualification wise parameter 17 (5.63%) post graduates, followed by 12 Graduates (3.97%) reported. Whereas 128 (42.38%) post graduates and 99

(32.79%) graduates preferred not to offer any comments in this regard. Somewhat same picture was in employed and occupation/sector wise parameters.

6.2.2.4.2 –Table – 14: Reporting of Sexual Harassment undergone to Higher Authorities

Gender	Yes	No	NC/NS/Not Required			Grand Total
Male	1	4	11	178	189	194
Female	5	5	2	96	98	108
Grand Total	**6**	**9**	**13**	**274**	**287**	**302**

Age	Yes	No	NC/NS/Not Required			Grand Total
14-20	0	0	0	2	2	2
21-35	0	6	6	208	214	220
36-50	4	2	2	21	23	29
Above 50	2	1	5	43	48	51
Grand Total	**6**	**9**	**13**	**274**	**287**	**302**

Marital Status	Yes	No	NC/NS/ Not Required			Grand Total
Married	4	5	6	83	89	98
Widow/ Widower	0	0	0	0	0	0
Divorcee	0	0	2	1	3	3
Single	2	4	5	190	195	201
Grand Total	**6**	**9**	**13**	**274**	**287**	**302**

Academic Qualification	Yes	No	NC/NS/ Not Required			Grand Total
Below Matriculation	0	0	0	0	0	0
Under Graduate	0	0	1	4	5	5
Graduate	3	3	4	117	121	127
Post Graduate	2	6	6	149	155	163
Other	1	0	2	4	6	7
Grand Total	**6**	**9**	**13**	**274**	**287**	**302**

Employed	Yes	No	NC/NS/ Not Required			Grand Total
Yes	5	8	4	135	139	152
No	1	1	9	139	148	150
Grand Total	**6**	**9**	**13**	**274**	**287**	**302**

Occupation/ Sector	Yes	No	NC/NS/ Not Required			Grand Total
Public Sector	3	1	2	22	24	28
Private Sector	2	5	2	92	94	101
Unorganized Sector	0	1	0	2	2	3
Self Employed	0	1	1	24	25	26
Student	0	1	5	100	105	106
Retired/ Homemakers	1	0	3	34	37	38
Grand Total	**6**	**9**	**13**	**274**	**287**	**302**

Table 14 indicates reporting of sexual harassment to higher authorities. It is observed that out of 6 (1.99%), 5 (1.66%) female and 1 (0.33%) male had reported. 98 (32.44%) Female and 189 (62.59%) Male have not offered any comments. In 36-50 years age group 4 (1.33%) and above 50 years 2 (0.66%) had reported. In similar way 4 (1.33%) married and 2 (0.66%) single had reported to higher authorities. Academic qualification wise it was observed that 3 (0.99%) graduates and 2 (0.66%) post graduates had reported. Those who were employed 5 (1.66%) had

reported, where as those not employed 1 (0.33%) had reported the matter. Occupation/Sector wise also it was 3 (0.99%) in respect of public sector and 2 (0.66%) had reported the incidence.

6.2.2.4.3 –Table – 15: Reporting of Abusive Behaviour/Incidence to Law Enforcement Authorities/Family Members

Gender	Yes	No	NC/NS/Not Required			Grand Total
Male	1	5	11	177	188	194
Female	2	15	5	86	91	108
Grand Total	**3**	**20**	**16**	**263**	**279**	**302**

Age	Yes	No	NC/NS/Not Required			Grand Total
14-20	0	0	0	2	2	2
21-35	1	14	9	196	205	220
36-50	0	3	3	23	26	29
Above 50	2	3	4	42	46	51
Grand Total	**3**	**20**	**16**	**263**	**279**	**302**

Marital Status	Yes	No	NC/NS/Not Required			Grand Total
Married	2	11	9	76	85	98
Widow/ Widower	0	0	0	0	0	0
Divorcee	0	0	2	1	3	3
Single	1	9	5	186	191	201
Grand Total	**3**	**20**	**16**	**263**	**279**	**302**

Academic Qualification	Yes	No	NC/NS/Not Required			Grand Total
Below Matriculation	0	0	0	0	0	0
Under Graduate	0	0	0	5	5	5
Graduate	1	4	6	116	122	127
Post Graduate	2	16	9	136	145	163
Other	0	0	1	6	7	7
Grand Total	**3**	**20**	**16**	**263**	**279**	**302**

Employed	Yes	No	NC/NS/Not Required			Grand Total
Yes	2	17	7	126	133	152
No	1	3	9	137	146	150
Grand Total	**3**	**20**	**16**	**263**	**279**	**302**

Occupation/ Sector	Yes	No	NC/NS/ Not Required			Grand Total
Public Sector	1	4	1	22	23	28
Private Sector	0	10	4	87	91	101
Unorganized Sector	0	1	0	2	2	3
Self Employed	1	2	3	20	23	26
Student	1	2	3	100	103	106
Retired/ Homemakers	0	1	5	32	37	38
Grand Total	**3**	**20**	**16**	**263**	**279**	**302**

Table 15 indicates reporting of abusive behavior/incidence (rape or attempt to rape) to law enforcement authorities/family members. Gender-wises out of 3 (0.99%) only 2 (0.66%) females and 1 (0.33%) females had reported the matter. Age--wise above 50 years 2 (0.66%) and between 21-35 years 1 (0.33%) reported. In respect of marital status parameter 2 (0.66%). Academic qualification wise parameter indicates 2 (0.66%) Yes in respect of post graduates and graduates 1 (0.33%) and employed wise also it is similar in respect of those employed and not employed. However, occupation/sector wise it is 1 (0.33%) each in respect of Public Sector, Self employed and Students.

6.2.2.5 GROUP V – Opinion towards Politician, Law Enforcement Authorities, Judiciary etc.

6.2.2.5.1 Table 16: Opinion regarding political will to control crimes against Women's in India.

Gender	Yes	No	NC/ NS	Grand Total
Male	76	74	44	194
Female	58	31	19	108
Grand Total	**134**	**105**	**63**	**302**

AGE	Yes	No	NC/ NS	Grand Total
14-20	0	1	1	2
21-35	99	67	54	220
36-50	14	11	4	29
Above 50	21	26	4	51
Grand Total	**134**	**105**	**63**	**302**

Marital	Yes	No	NC/ NS	Grand Total
Married	45	40	13	98
Widow/ Widower	0	0	0	0
Divorcee	0	3	0	3
Single	89	62	50	201
Grand Total	**134**	**105**	**63**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	1	3	1	5
Graduate	57	37	33	127
Post Graduate	72	62	29	163
Other	4	3	0	7
Grand Total	**134**	**105**	**63**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	71	58	23	152
No	63	47	40	150
Grand Total	**134**	**105**	**63**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	13	13	2	28
Private Sector	49	38	14	101
Unorganized Sector	2	1	0	3
Self Employed	9	9	8	26
Student	43	34	29	106
Retired / Homemakers	18	10	10	38
Grand Total	**134**	**105**	**63**	**302**

It can be observed from table 16 related to as to whether there is political will to control crimes against women's in India. Of the 134 (19.20%) 76 (25 .17%) male and 58 female (19.20%) indicate that there is political will to control crimes against women. Whereas 74 (24.50%) Male and 31 (10.27%) female are not having positive response regarding it. Age-wise parameter indicates 99 (32.78%) in the group of 21.35, whereas above 50 years 21 (6.95%) are positive. Marital status wise singles 89 (29.47%) and married 45 (14.90%) are having confidence in political will. Academic qualification wise the post graduates 72 (23.85%) and Graduates 57 (18.87%), those employed 71 (23.515) and not employed 63 (20.86%) and from the private sector

49 (14.245) and students 43 (14.24%) have reported that they have trust in political will regarding controlling crimes against the females.

6.2.2.5.2 Table 17: Opinion whether Law Enforcement Authorities in India are slow in reacting to crimes against the Women's.

Gender	Yes	No	NC/ NS	Grand Total
Male	169	9	16	194
Female	103	3	2	108
Grand Total	**272**	**12**	**18**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	2	0	0	2
21-35	196	9	15	220
36-50	25	2	2	29
Above 50	49	1	1	51
Grand Total	**272**	**12**	**18**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	87	5	6	98
Widow/Widower	0	0	0	0
Divorcee	2	1		3
Single	183	6	12	201
Grand Total	**272**	**12**	**18**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	5	0	0	5
Graduate	114	3	10	127
Post Graduate	148	8	7	163
Other	5	1	1	7
Grand Total	**272**	**12**	**18**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	135	8	9	152
No	137	4	9	150
Grand Total	**272**	**12**	**18**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	28	0	0	28
Private Sector	87	8	6	101
Unorganized Sector	3	0	0	3
Self Employed	23	0	3	26
Student	98	2	6	106
Retired/ Homemaker	33	2	3	38
Grand Total	**272**	**12**	**18**	**302**

Table 14 indicates regarding slowness of law enforcement authorities in India in reacting crimes against the women. In the gender-wise parameter total 272 (90.07%) agree that the law

enforcement authorities are slow in reacting to crimes against the women. It includes 169 (55.96%) men and 103 (34.11%) female. Age-wise the group of 21-35 years 196 (64.90%), above 50 years 49 (16.23%), in marital status the singles 183 (60.60%), married 87 (28.81%), academic qualification wise post graduates 148 (49.02%), graduate 114 (37.75%), amongst those not employed 137 (45.36%), employed 135 (44.71%) and Occupation/Sector wise private sector 87 (28.81%), followed by Students 98 (32.45%) agreed that the law enforcement authorities in India are slow in reacting to crimes against the women.

6.2.2.5.3 Table 18: Opinion Whether Judiciary Process in India is Slow for crimes against Women's.

Gender	Yes	No	NC/ NS	Grand Total
Male	175	9	10	194
Female	100	3	5	108
Grand Total	**275**	**12**	**15**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	2	0	0	2
21-35	201	9	10	220
36-50	24	3	2	29
Above 50	48	0	3	51
Grand Total	**275**	**12**	**15**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	86	4	8	98
Widow/ Widower	0	0	0	0
Divorcee	3	0	0	3
Single	186	8	7	201
Grand Total	**275**	**12**	**15**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	5	0	0	5
Graduate	115	3	9	127
Post Graduate	149	9	5	163
Other	6	0	1	7
Grand Total	**275**	**12**	**15**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	135	8	9	152
No	140	4	6	150
Grand Total	**275**	**12**	**15**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	25	1	2	28
Private Sector	91	7	3	101
Unorganized Sector	3	0	0	3
Self Employed	22	0	4	26
Student	99	3	4	106
Retired/ Homemaker	35	1	2	38
Grand Total	**275**	**12**	**15**	**302**

Table 18 indicates the opinion of the respondents as to whether the judiciary process is slow for crimes in India. Of the 275 (91.06 %), Male 175 (57.95%) and 100 (33.11%) Female were agreeable. In age group of 21-35, 1201 (66.50%), marital status wise parameter the singles 186 (61.59%), married 86 (24.8%), academic qualification wise post graduates 149 (49.345), graduates 115 (38.08%), those not employed 140 (46.36%) and employed 135 (44.70%) and occupation/sector wise students 99 (32.78%) followed by Private Sector 91 (30.13%), were of the opinion that judiciary process is slow for crimes against women in India.

6.2.2.6 GROUP – VI – Opinion regarding prevailing laws.

6.2.2.6.1 Table: 19 Opinion whether prevailing laws are sufficient to take care of crimes towards Women's in India.

Gender	Yes	No	NC/ NS	Grand Total
Male	30	143	21	194
Female	14	86	8	108
Grand Total	**44**	**229**	**29**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	0	2	0	2
21-35	27	173	20	220
36-50	5	19	5	29
Above 50	12	35	4	51
Grand Total	**44**	**229**	**29**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	18	69	11	98
Widow/ Widower	0	0	0	0
Divorcee	0	2	1	3
Single	26	158	17	201
Grand Total	**44**	**229**	**29**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	0	5	0	5
Graduate	15	94	18	127
Post Graduate	27	125	11	163
Other	2	5	0	7
Grand Total	**44**	**229**	**29**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	28	108	16	152

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	9	17	2	28

No	16	121	13	150
Grand Total	**44**	**229**	**29**	**302**

Private Sector	15	74	12	101
Unorganized Sector	0	3	0	3
Self Employed	4	20	2	26
Student	12	83	11	106
Retired/ Homemaker	4	32	2	38
Grand Total	**44**	**229**	**29**	**302**

Table 19 indicates the opinion of the respondents as to whether the prevailing laws are sufficient to take care f crimes towards Women's in India. Of the total 44 (14.57%) 30 (9.93%) Male and 14 (4.64%) Female are of the view that the prevailing laws are sufficient to take care. However of the 229 (75.83%), of that 143 (47.35%) Male and 86 (28.47%) Male are of the view that the prevailing laws are not sufficient. In Age-wise parameters also in the age group 21-35 years 173 (57.28%), in marital status wise parameter Singles 158 (52.32%), Married 69 (22.85%), Academic Qualification wise Post Graduate 125 (41.39%) and Graduates 94 (31.12%), 121 (40.70%) not employed and 108 (35.76%), Occupation Sector wise 83 (27.48%) students and 74 (24.50%) are of the view that the prevailing laws are not sufficient to take care of crimes towards women's in India.

6.2.2.6.3 Table 20: Opinion regarding prevailing laws Be amended Or Re-written with severe Punishment for Crimes against Women's.

Gender	Yes	No	NC/ NS	Grand Total
Male	159	15	20	194
Female	100	3	5	108
Grand Total	**259**	**18**	**25**	**302**

Age	Yes	No	NC /NS	Grand Total
14-20	2	0	0	2
21-35	189	10	21	220
36-50	22	3	4	29
Above 50	46	5	0	51
Grand Total	**259**	**18**	**25**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	82	9	7	98
Widow/ Widower	0	0	0	0
Divorcee	3	0	0	3
Single	174	9	18	201
Grand Total	**259**	**18**	**25**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	5	0	0	5
Graduate	109	4	14	127
Post Graduate	140	12	11	163
Other	5	2	0	7
Grand Total	**259**	**18**	**25**	**302**

Employed	Yes	Yes	NC/ NS	Grand Total

Occupation/ Sector	Yes	No	NC/ NS	Grand Total

Yes	129	10	13	152
No	130	8	12	150
Grand Total	**259**	**18**	**25**	**302**

Public Sector	24	4	0	28
Private Sector	86	3	12	101
Unorganized Sector	3	0	0	3
Self Employed	22	3	1	26
Student	89	6	11	106
Retired/ Homemaker	35	2	1	38
Grand Total	**259**	**18**	**25**	**302**

Table 20 gives the opinion of the respondents regarding amendment or rewriting the prevailing laws with severe punishment for crimes against women. Of the 259 (85.76%) respondents, 159 (52.65%) males and 100 (33.11%) female agree to it, in age wise parameters the age group of 21-35 years 189 (62.59%), 82 (27.15%) married and 174 (57.62%) single from the marital status parameter, 140 post graduates (46.355), graduate 109 (36.09%), employed 129 (42.71%) and not employed 130 (43.05%), students 89 (29.47%) and from private sector 86 (28.48%) are of the view that the prevailing laws are required to amended or rewritten with severe punishment for crimes against women in India.

6.2.2.7 GROUP VII – Solution's to avoid such abusive behaviours/incidences.

6.2.2.7.1 Table – 21: Opinion regarding agreeing that delay in justice to the Rape Victim, is Encounter of the Rapist the solution for speedy justice to the victim.

Gender	Yes	No	NC/ NS	Grand Total
Male	67	99	28	194
Female	59	38	11	108
Grand Total	**126**	**137**	**39**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	1	1	0	2
21-35	88	104	28	220
36-50	16	9	4	29
Above 50	21	23	7	51
Grand Total	**126**	**137**	**39**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	43	42	13	98
Widow/ Widower	0	0	0	0
Divorcee	2	0	1	3
Single	81	95	25	201
Grand Total	**126**	**137**	**39**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	2	2	1	5
Graduate	52	54	21	127
Post Graduate	69	77	17	163
Other	3	4	0	7
Grand Total	**126**	**137**	**39**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Yes	77	60	15	152

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	8	17	3	28
Private Sector	58	34	9	101

No	49	77	24	150
Grand Total	**126**	**137**	**39**	**302**

Unorganized Sector	1	2	0	3
Self Employed	14	8	4	26
Student	34	54	18	106
Retired/ Homemaker	11	22	5	38
Grand Total	**126**	**137**	**39**	**302**

Table 21 indicates the views of the respondents regarding encountering of the rapist is the solution for speedy justice to the victim due to delay in justice to the rape victim. Of the 126 (41.72%), 67 Male (22.18%), Female 59 (19.54%) are in favour. However, 137 (45.36%) are not in favour it includes 99 (32.78%) male and 38 (12.58%) female. Age-wise also 88 in the age group of 21-35 total 88 (29.14%) are in favour whereas 104 (34.44%) are not in favour. The marital status wise parameters also indicate same i.e. single 81 (26.82%), married 43 (14.24%) are in favour, whereas 95 (31.45%) single and 42 (13.91%) single are not in favour of amendment, academic qualification wise also it appears same i.e. post graduates 69 (22.85%) and graduates 52 (17.22%) are not in favour, whereas 77 (25.50%) post graduate, 54 graduate (17.88%) are not positive for it. Employed also 77 (25.50%) are Yes, whereas 60 (19.86%) are No. In respect of those who are not employed 77 (25.50%) and those employed 60 (19.86%) are not in favour. As regards occupation/sector wise parameter 58 (19.20%) are Yes, whereas students 54 (17.88%) are No, for amending the present laws.

6.2.2.7.2 Table – 22: Opinion regarding agreeing with the ideology of Swami Sadhguru (Isha Foundation) that there is a need to understand and educate people to stop crimes like rape against Women's.

Gender	Yes	No	NC/ NS	Grand Total
Male	148	20	26	194
Female	87	8	13	108
Grand Total	**235**	**28**	**39**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	1	0	1	2
21-35	175	17	28	220
36-50	21	3	5	29
Above 50	38	8	5	51
Grand Total	**235**	**28**	**39**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total
Married	72	13	13	98
Widow/ Widower	0	0	0	0
Divorcee	2	0	1	3
Single	161	15	25	201
Grand Total	**235**	**28**	**39**	**302**

Academic Qualification	Yes	No	NC/ NS	Grand Total
Below Matriculation	0	0	0	0
Under Graduate	3	1	1	5
Graduate	97	11	19	127
Post Graduate	129	16	18	163
Other	6	0	1	7
Grand Total	**235**	**28**	**39**	**302**

Employed	Yes	No	NC/ NS	Grand Total
Row Labels	**1**	**2**	**3**	**Grand Total**
Yes	107	17	28	152
No	128	11	11	150
Grand Total	**235**	**28**	**39**	**302**

Occupation/ Sector	Yes	No	NC/ NS	Grand Total
Public Sector	19	6	3	28
Private Sector	73	10	18	101
Unorganized Sector	3	0	0	3
Self Employed	17	2	7	26
Student	95	6	5	106
Retired/ Homemakers	28	4	6	38
Grand Total	**235**	**28**	**39**	**302**

Table 24: Indicates respondents responses regarding need to understand and educate people to stop crimes like rape against women's. Of the 235 (77.82%) respondents, 148 (49.01%) Male, 87 (28.81%) Female, age-wise the age group of 21-35 years of 175 (57.95%) are of the view that there is a need. Also 161 (53.31%), Single, 72 (23.85%), academic qualification wise the post graduate 129 (42.72%), Graduate 97 (32.12%). Amongst the employed 107 (35.43%), not employed 128 (42.39%) and 95 (31.47%) and form Private Sector 73 (24.17%) are of the view that there is a need to understand and educate people to stop crimes like rape against women's as opined by Swami Sadhguru of Isha Foundation.

6.2.2.7.3 Table – 23: Opinion regarding separate Courts in India for crimes against Women's

Gender	Yes	No	NC/ NS	Grand Total
Male	153	22	19	194
Female	94	8	6	108
Grand Total	**247**	**30**	**25**	**302**

Age	Yes	No	NC/ NS	Grand Total
14-20	2	0	0	2
21-35	172	27	21	220
36-50	23	2	4	29
Above 50	50	1	0	51
Grand Total	**247**	**30**	**25**	**302**

Marital Status	Yes	No	NC/ NS	Grand Total

Academic Qualification	Yes	No	NC/ NS	Grand Total

Married	84	7	7	98
Widow/ Widower	0	0	0	0
Divorcee	3	0	0	3
Single	160	23	18	201
Grand Total	**247**	**30**	**25**	**302**

Below Matriculation	0	0	0	0
Under Graduate	5	0	0	5
Graduate	95	16	16	127
Post Graduate	142	13	8	163
Other	5	1	1	7
Grand Total	**247**	**30**	**25**	**302**

Employed	**Yes**	**No**	**NC/ NS**	**Grand Total**
Yes	128	15	9	152
No	119	15	16	150
Grand Total	**247**	**30**	**25**	**302**

Occupation/ Sector	**Yes**	**No**	**NC/ NS**	**Grand Total**
Public Sector	26	2	0	28
Private Sector	80	13	8	101
Unorganized Sector	3	0	0	3
Self Employed	25	0	1	26
Student	80	11	15	106
Retired/ Homemakers	33	4	1	38
Grand Total	**247**	**30**	**25**	**302**

Table 23 indicates the opinion of the respondents regarding having separate courts in India for crimes against Women's in India. Of the 247 (81.79%) Yes, 153 (50.67%) Male, 94 (31.12%) Female, age-wise the age group of 21-35 years is with maximum Yes i.e. 172 (56.95%), marital status wise single 160 (52.99%), married 84 (27.81%), academic qualification wise the post graduates 142 (47.02%), graduate 95 (31.465), of the 128 (42.38%) employed and 119 (39.41%) not employed and 80 (26.4 9%) each students and from private sector of the view that there is a need for having separate courts in India for crimes against Women's in India.

6.2.2.8 GROUP VIII – Opinion regarding Capital Punishment

6.2.2.8.1 Table 24: Opinion regarding punishing Rapist by Death Penalty?

Gender	**Yes**	**Yes**	**No**	**Grand Total**
Male	140	18	36	194
Female	103	3	2	108
Grand Total	**243**	**21**	**38**	**302**

Age	**Yes**	**No**	**NC/ NS**	**Grand Total**
14-20	1	1	0	2
21-35	174	14	32	220
36-50	25	3	1	29
Above 50	43	3	5	51
Grand Total	**243**	**21**	**38**	**302**

Marital Status	**Yes**	**No**	**NC/ NS**	**Grand Total**
Married	80	7	11	98

Academic Qualification	**Yes**	**No**	**NC/ NS**	**Grand Total**
Below Matriculation	0	0	0	0
Under Graduate	2	2	1	5

Widow/ Widower	0	0	0	0
Divorcee	3	0	0	3
Single	160	14	27	201
Grand Total	**243**	**21**	**38**	**302**

Graduate	101	12	14	127
Post Graduate	135	7	21	163
Other	5	0	2	7
Grand Total	**243**	**21**	**38**	**302**

Employed	**Yes**	**No**	**NC/ NS**	**Grand Total**
Yes	134	10	8	152
No	109	11	30	150
Grand Total	**243**	**21**	**38**	**302**

Occupation/ Sector	**Yes**	**No**	**NC/ NS**	**Grand Total**
Public Sector	20	5	3	28
Private Sector	92	4	5	101
Unorganized Sector	3	0	0	3
Self Employed	25	1	0	26
Student	72	10	24	106
Retired/ Homemaker	31	1	6	38
Grand Total	**243**	**21**	**38**	**302**

Table 34 indicates the opinion of the respondents regarding awarding death penalty to the rapist for rape crime. Of the 243 (80.47%), 140 (46.36%) Male, 103 (343.11%) Male, age wise 21-35 age group 174 (57.61%), as regards marital status vice 160 (52.98%), 80 (26.505) married, academic qualification wise3 135 (44.71%) post graduate, 101 (33.44%) graduate and of the employed 134 (44.38%), not employed 109 (36 .09%) and occupation/sector wise 92 (30.47%), students 72 (23.84%) are of the view that Rape should be punishable by Death Penalty.

6.2.3 Average Mean Scores (Likert Scale Score) –

The average detailed mean score observed in respect of the various questions set out in the survey questionnaire to the participants is as below:

Table: 35 Likert Scale Score

Sl.No.	Question	Mean
	GROUP I – Awareness of Law	
1.	Are you aware of POSH (Sexual Harassment) Act	1.39
2.	Are you aware of Definition of Sexual Harassment at Work Place?	1.31
3.	Are you aware of legal definition of Rape.	1.48
	GROUP II – Awareness of Crimes against Women's in India.	
4.	Are crimes towards Women's in India More in Urban Areas.	2.08
5.	Are crimes towards Women's in India More in Rural.	2.03
6.	Do you agree that crimes towards the Woman's are increasing in India.	1.27

	GROUP III – Victimization of Abusive Behaviours/Incidences	
7.	Had you ever been victim of Eve teasing/Molestation.	1.86
8.	Had you ever been victim of Sexual Harassment at Work Place.	2.00
9.	Had you ever been victim of such abusive behaviour/incidence.	1.98
	GROUP IV – Reporting of Abusive Behaiours/Incidences.	
10.	Had you reported Eve Teasing/Molestation to your Teachers/Parents/Family/Superiors.	2.00
11.	Had you reported Sexual Harassment undergone t to your Higher Authorities?	2.25
12.	Had you reported Abusive Behaviour/Incidence to Law Enforcement Authorities/Family Members.	2.33
	GROUP V – Opinion towards Politician, Law Enforcement Authorities, Judiciary etc.	
13.	Do you Agree that there is political will to control crimes against Women's in India.	1.76
14.	Do you Agree that the Law Enforcement Authorities in India are slow in reacting to crimes against the Women's.	1.16
15.	Do you Agree that Judiciary Process in India is Slow for crimes against Women's.	1.14
	GROUP – VI – Opinion regarding prevailing laws	
16.	Do you Agree that prevailing laws are sufficient to take care of crimes towards Women's in India.	1.95
17.	Should the prevailing laws Be amended Or Re-written with severe Punishment for Crimes against Women's.	1.22
	GROUP VII – Solutions to avoid such abusive behaviours/incidences.	
18.	Due to delay in justice to the Rape Victim, do you agree that Encounter of the Rapist is the solution for speedy justice to the victim.	1.71
19.	Do you Agree with the ideology of Swami Sadhguru (Isha Foundation) that there is a need to understand and educate people to stop crimes like rape against Women's.	1.35
20.	Do you Agree that there should be separate Courts in India for crimes against Women's.	1.26
	GROUP VIII – Capital Punishment	
21.	Should Rape be punishable by Death Penalty?	1.32

6.2.4 - Chi Square Testing of the Respondents Descriptive Statistics – To find out the opinion/attitude of the participants of the survey towards the questions framed in the questionnaire, out of the six parameters i.e. Gender, Age, Marital Status, Academic Qualification, Employment, Occupation/Section, in all 126 hypotheses (6 parameters x 21 questions = 126). To test the Hypothesis, Chi Square (X^2) test was adopted. Chi Square statistics is computed at 95% confidence level (i.e.) 0.5 level of Significance. Formula used is below.

$X^2 = \sum([FO - FE]^2/FE)$

FO: observed frequency FE: Expected frequency

Degrees of Freedom (DF) = (R-1) X (C-1) where R = number of rows, C = number of Columns

Chi square statistics for "Gender" is computed as per the formula and below is the working for it. In a similar way Chi square statistic for all other variables/parameters is calculated and the final results are shown in the table <Table Number>. Workings of one variable/parameter from each group is appended below and the remaining have been calculated in similar way. The remaining Groups have also been calculated in similar way. A table of Accept/Reject of the Hypotheses is as per Annex – I.

6.2.4.1 GROUP – I - LEVEL OF AWARENESS OF LAW

1) – Level of awareness of POSH (Sexual Harassment) Act -

Ho: Level of awareness of POSH (Sexual Harassment) Act does not depend upon **Gender**.
H1: Level of awareness of POSH (Sexual Harassment) Ac t depends upon **Gender**.

1) **Gender Vs Level of awareness of POSH (Sexual Harassment) Act**

   Ho: Level of awareness of POSH (Sexual Harassment) Act does not depend upon **Gender**.
   H1: Level of awareness of POSH (Sexual Harassment) Ac t depends upon **Gender**.

2) **Table – 36: Level of awareness of POSH (Sexual Harassment) Act**

Table: 36– Gender Details

Gender	Total	Percentage
Male	194	64.24
Female	108	35.76
Grand Total	**302**	**100.00**

Observed values:

Table – 37: Level of awareness of POSH (Sexual Harassment) Act – Gender-wise observed value

Gender	Below Mean	Mean	Above Mean	Grand Total
		1.39		

Male	119		67+8= 75	194
Female	77		28+3=31	108
Grand Total	**196**		**95+11=106**	**302**

Expected values:

$$\frac{196 \times 194}{302} = 64.90 \qquad \frac{106 \times 194}{302} = 68.09$$

$$\frac{196 \times 108}{302} = 70.09 \qquad \frac{106 \times 108}{302} = 35.10$$

Computation:

Table – 38: Level of awareness of POSH (Sexual Harassment) Act - Gender-wise Computation

Ei	Oi	(Oi-Ei)2/Ei
125.9073	126	6.82734E-05
70.09272	70	0.000122639
68.09272	68	0.000126241
37.90728	38	0.000226767
		0.000543921

$\sum$= 0.00 Calculated

0.05 level of significance – df (Row-1) x (Column-1) – (2-1)x(2-1)=1 i.e. 3.84

x^2(table)= 3.84 x^2 Cal < x^2 Table. So Accept Ho

3) Chi Square statistic for all other variables/parameters Vs Level of awareness of POSH (Sexual Harassment) Act

Table – 39: Level of awareness of POSH (Sexual Harassment) Act - Statistics of all Other variables/parameters

95% Confidence Level	Table Value of Chi Square	Degrees of Freedom	Parameter	Level of awareness of POSH (Sexual Harassment) Act	Chi Square value obtained	Hypothesis Testing
	7.81	3	Age		0.78	Accept Ho
	7.81	3	Marital Status		0.01	Accept Ho
	9.48	4	Academic Qualification		0.19	Accept Ho
	3.84	1	Employed		0.01	Accept Ho

	11.07	5	Occupation/Sector		0.03	Accept Ho

6.2.4.2 – Hypotheses Tested – Accept/Reject Result –

In all 126 hypotheses (6 parameters x 21 questions = 126). The results of the 126 hypotheses are as per Annexure – 1. In respect of all 126 hypotheses Ho was accepted.

6.2.4.2.1 – Group – I – Awareness of Law – In this group questions were put to ascertain from the respondents regarding the awareness of POSH (Sexual Harassment) Act, Definition of Sexual Harassment at Work Place and legal definition of Rape. In respect of all the hypotheses Ho was accepted. Thus it was accepted that the parameters set out are not essential characteristics requirement for awareness of Law.

6.2.4.2.2 – Group – II – Awareness of Crimes against Women's in India – In this group questions were put to ascertain from the respondents regarding their awareness of more crimes in Urban Areas, Rural Areas and whether the crimes towards the women's are increasing in India. In respect of all the hypotheses Ho was accepted. Thus it was accepted that the parameters set out are not essential characteristics requirement for awareness of Crimes against Women's in India.

6.2.4.2.3 – Group III – Victimization of Abusive Behaviours/Incidences - In this group questions were put to ascertain from the respondents as to whether they had been victimized of Eve Teasing/Molestation, Sexual Harassment at Work Place and of abusivice Behaviour/Incidence (Rape or attempt to Rape). In respect of all the hypotheses Ho was accepted. Thus it was accepted that the parameters set out are not essential characteristics requirement for victimization of abusive behaviours/incidences.

6.2.4.2.4 – Group IV – Victimization of Abusive Behaviours/Incidences – In this group questions were put to ascertain from the respondents regarding reporting their victimization related to eve teasing/molestation to Teachers, Parents, Family, Superior, reporting of sexual harassment undergone to higher authorities and abusive behavior/incidence to law enforcement authorities, family members. In respect of all the hypotheses Ho was accepted. Thus it was accepted that the parameters set out are not essential characteristics requirement for reporting victimization of abusive behaviours/incidences.

6.2.4.2.5 – Group V - Opinion towards politician, law enforcement authorities, judiciary etc. – In this group questions were put to ascertain from the respondents regarding their opinion to know the will of politicians to control crimes against women's in India, whether the law enforcement authorities in India are slow in reacting to crimes and as to whether the judiciary process in India is slow for crimes against women's in India. In respect of all the hypotheses Ho was accepted. Thus it was accepted that the parameters set out are not essential characteristics requirement for reporting victimization of abusive behaviours/incidences.

6.2.4.2.6 – Group VI – Opinion regarding prevailing laws – In this group questions were put to ascertain form the respondents as to whether they agree that the prevailing laws are sufficient to take care of crimes towards women's, or should the prevailing laws need to be amended or rewritten with severe punishment for crimes against women. In respect of all the hypotheses Ho was accepted. Thus it was accepted that the parameters set out are not essential characteristics requirement for opinion regarding prevailing laws.

6.2.4.2.7 – Group VII – Solution to avoid abusive behavior/incidences – In this group questions were put to ascertain from the respondents regarding solutions to avoid such abusive beaviour/incidences as to whether due to delay in justice to rape victim, is encounter of the rapist solution for speedy justice to the victim, or whether the ideology of Swami Sadhguru of Isha Foundation regarding need to understand and educate people to stop crimes like rape against women and the need for having separate courts for crimes against women's. In respect of all the hypotheses Ho was accepted. Thus it was accepted that the parameters set out are not essential characteristics requirement for solutions to avoid abusive behavior/incidences.

6.2.4.2.8 – Group VIII – Opinion regarding Capital Punishment – In this group the question was put to the respondents as to whether rape to be punishable by death penalty. In respect of this Ho was accepted. Thus it was accepted that the parameter set out is not essential characteristics requirement for obtaining opinion regarding capital punishment.

6.2.5 **Differences (Z Test) –** There were total three variables/parameters

Ho: The average response is same for Male and Female.
H1: The average response is not same.

To find the difference in responses of the Male and Female, a Z Test was adopted, with 5% significance. The formula used is as below:

$$Z = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\sigma_1^2/ n_1 + \sigma_2^2/ n_2}}$$

Z Test value for all the variables/parameters of the Groups is calculated as below:

Table: 40

Gender	Total
Male	194
Female	108
Grand Total	302

Group I – Level of Character – There were total six variables/parameters

Table: 41

Total	Mean	Sigma Square
$n_1 =$ 194	$\bar{x}_1 = 4.10$	$\sigma_1^2 = 1.74$
$n_2 =$ 108	$\bar{x}_2 = 4.31$	$\sigma_2^2 = 1.75$

$$Z = \frac{4.10 - 4.31}{\sqrt{1.74/194} + \sqrt{1.75/108}}$$

$$= -\frac{0.21172}{0.158682}$$

Z = 0.996774
Z = 1.00 Therefore Accept Ho

The Z Test in respect of all other Groups was carried out in same manner. It was observed that It there was no difference in responses in respect of responses of the respondents in respect of Male and Female. i.e.

IV. CONCLUSION

The data collected was grouped into eight groups to know the opinions of the respondents in respect of eight main heads of the various parameters to have a clear picture regarding the understanding of various definitions, crimes against women, victimization of abusive behaviours/incidences, reporting of the incidences, opinion towards politicians, law enforcement authorities, judiciary etc., opinion regarding prevailing laws, solutions to avoid such abusive behaviours/incidences. The group wise conclusion is as below:

Group – I: Awareness of Law – Under this broad head an attempt was made to see whether the respondents of the survey are aware of the POSH (Sexual Harassment) Act, Definition of Sexual Harassment at Work Place and legal definition of work place. It was observed that out of 302 respondents, more than 60% of the respondents were aware of law and they were in the age group of 21-35 years and were either single or married. Academic qualification wise they were either Post Graduates or Graduates.. Also it was observed that most of them were employed in private sector or were students.

Group – II: Awareness of Crimes against Women's in India – Under this broad head an attempt was made to know the opinion of the respondents as to whether the crimes towards women's in India are more in Urban areas or Rural areas and also whether the crimes towards the women's are increasing in India. It was observed that more than 60% of the respondents were of the view that it is more in Urban areas, whereas the remaining 40% were of the view that it is more in Rural areas. As regards increasing of crimes against women more than 80% agree that it is increasing. In all the three parameters it was observed that more than 70% respondents were in the age group of 21-35 years and were either single or married and they were post graduates or graduates and about 40% were employed and were either working in private sector or students.

Group – III: Victimization of Abusive Behaviours/Incidences – The questions in this broad head were mainly related to know from the respondents as to whether they were victim of eve teasing/molestation, sexual harassment at work place or were also victim of such abusive behaviours/incidences i.e. rape or attempt to rape. It is learnt from the data gathered that about 20% females and 2% males were victim of eve teasing/molestation, 3.5% females and 1.5% man were victim of harassment at work place, whereas more than 5% of the female and about 2% male have reported that they were victim of abusive behavior/incidences i.e. rape or attempt to rape. Here too in all the three parameters they were from the age group of 21-35 years, were married or single, with maximum academic qualification or post graduation or graduation and most of them were employed either in private sector or were students.

Group – IV: Reporting of Abusive Behaviours/Incidences – This broad head attempts to understand from the respondents as to whether they reported the victimization undergone by them

as observed in Group III parameters. It was observed that only 1 to 1.5% of them had reported such victimization either to their parents, teachers, higher authorities or law enforcement authorities. Here too they were maximum in the age group of 21-35 years, either married or single, with graduation or post graduation academic qualification, employed in Public Sector, Private Sector or Student.

Group – V: Opinion towards Politician, Law Enforcement Authorities, Judiciary etc. – In this an attempt was made to find from the respondents of the survey as to whether in their opinion whether there is political will to control crimes against women's in India, whether the law enforcement authorities are slow in reacting to crimes against women and as to whether the Judiciary process is slow for crimes against women in India. The data indicates that about 45% of the respondents are of the view that there is political will, 35% don't think that there is political will and about 20% are either not sure or don't have any comments to offer in this regard. Whereas regarding the other two parameters more than 85-90% of the respondents are of the view that there is slowness of law enforcement authorities and judiciary in responding to crimes against the women's in India. The maximum age group of 21-35, either married or single, with graduation or post graduation academic qualification, employed is private sector, students had expressed this view.

Group VI: Opinion regarding prevailing laws – In this the opinion of respondents was sought as to whether the prevailing laws are sufficient or required to be re-written. About 75% of the respondents agree that the laws are sufficient, but 85% of them also agree that there is a need to amend or re-written with severe punishment for crimes against the women in India. The age groups for both the parameters were mainly from 21-35 years, single or married, with post graduation or graduation degree, employed in private sector or students.

Group VII – Solutions to avoid such behaviours/incidents – It was thought to seek solutions from the respondents from the given parameters as to whether in their opinion due to delayed justice to the victim o f rape, encounter of the rapist is the solution for speedy justice to the victim., also as to whether the ideology of Swami Sadhguru (Isha Foundation) regarding understanding and educating people is also one of the solutions to stop crimes against women and whether there is a need for setting up separate courts for the crimes against women. About 45% of the respondents are not in favour of recommending encounter of the rapist as a solution for delayed justice to the victim. About 42% are in favour and 13% are not sure or have no comments to offer in this regard. It is worth noting that about 78% of the respondents are of the view that there is a need to understand and educate the people on the lines of the ideology of Swami Sadguru and about 82% of the views that separate courts to be set up for crimes against the women's in India. The age group of 21-35 years, respondents either single or married, with high qualification i.e. post graduation or graduation, employed and working in private sector have maximum opined for this solutions.

Group VIII – Opinion regarding Capital Punishment – Due to recent rape incidences in the country and rise in it, an opinion of the respondents was sought as to whether rape should be punishable by death. It is not surprising to note that more than 80% of the respondents are in favour of death punishment for the rape crime. This is opined in the age group of 21-35 by about 58% and those above 50 by 15%. They are either single (53%) and married about 27% and are

post graduates (45%) and graduates (33%). Those employed opining it are about 45% and are either from Private Sector, Student, Retired/Homemakers or from public sector.

Broad Conclusion – It can be broadly concluded that most of the victims of the sex related crimes against the women are ranging to about 5% to 5.5% and men about 2%, in all the three parameters i.e. eye-teasing, sexual harassment and abusive behavior/incidence i.e. rape or attempt to rape and they are in the age group of 21-35 years either single or married, with high qualification i.e. post graduation or graduation, employed either in private sector or are students. The various statistical tests conducted have proved the analysis and hypotheses related to sex crimes against the women and possible solutions to it. We have seen various stages of Industry from 1.0 to now 4.0, there is tremendous progress in science and technology which has helped the industries to flourish, and the participation of females in the growth of the industry is more, it is felt that we have achieved Industry 4.0 and will achieve 5.0, in the near future, but what about the injustice and sex related crimes which are on the rise against the females and to a certain extent to the males in India. There is therefore a need to take a review by the government authorities and other authorities to enable the females to live a respectful life in the society.

Suitable Model - Suggested Model for taking care of sex related crimes against women's in India –

- Creating an awareness of various laws related to crimes against women and sex education in the urban and rural areas too.
- Creating an environment where in crimes can be reported freely to the higher authorities, family, teachers and law enforcing authorities.
- Those with crime records should not be allowed to contest elections.
- Avoiding political pressure on the law enforcement authority to enable them to react fast to the crimes.
- Deadlines to be set up for disposal of cases in respect of crimes against the women.
- The laws against crimes towards women and men should be suitably amended with severe punishment.
- Since encounter of the rapist is not a solution for speedy justice, society should be educated and a need to be created to understand the people.
- Setting up of separate Courts for crimes against Women's for fast disposal of cases.
- Introduction of death penalty for crimes like Rape.
- Misuse of official positions should be dealt firmly, with suitable punishments for Career growth of the females.
- Reviewing the age of marriage and recommending marriages at proper age.

LIMITATIONS AND SCOPE FOR FUTURE STUDY

8.1 Limitations –

The Limitations of the Study is that it is based on primary data mainly from the population connected with social network and secondary data only related to rape related crime. The other domestic violence towards the female is not taken look at present.

8.2 Scope for Future Study -

A further detailed study from the various corner of the country and population of all level can be looked into including domestic violence for crimes against the women's in India.

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Annex-I

Hypotheses Tested Table – Accept/Reject
Respondents Descriptive Statistics – Hypotheses Result

Sl. No.	Question	Gender	Age	Marital Status	Academic Qual.	Employment	Sector

	GROUP I – Awareness of Law						
1.	Are you aware of POSH (Sexual Harassment) Act	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
2.	Are you aware of Definition of Sexual Harassment at Work Place.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
3.	Are you aware of legal definition of Rape?	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
	GROUP II – Awareness of Crimes against Women's in India.						
4.	Are crimes towards Women's in India More in Urban Areas.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
5.	Are crimes towards Women's in India More in Rural Areas.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
6.	Do you agree that crimes towards the Woman's are increasing in India.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
	GROUP III – Victimization of Abusive Behaviours/Incidences						
7.	Had you ever been victim of Eve teasing/Molestation.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
8.	Had you ever been victim of Sexual Harassment at Work Place.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
9.	Had you ever been victim of such abusive behaviour/incidence.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
	GROUP IV – Reporting of Abusive Behaiours/Incidences.						
10.	Had you reported Eve Teasing/Molestation to your Teachers/Parents/Family/Superiors.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
11.	Had you reported Sexual Harassment undergone to your Higher Authorities.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
12.	Had you reported Abusive Behaviour/Incidence to Law Enforcement Authorities/Family Members.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho

Sl. No.	**Question**	**Gender**	**Age**	**Marital Status**	**Academic Qual.**	**Employment**	**Sector**
	GROUP V – Opinion towards Politician, Law Enforcement Authorities, Judiciary etc.						
13.	Do you Agree that there is political will to control crimes against Women's in India?	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
14.	Do you Agree that the Law Enforcement Authorities in India are slow in reacting to crimes against the Women's.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
15.	Do you Agree that Judiciary Process in India is Slow for crimes against Women's.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho

	GROUP – VI – Opinion regarding prevailing Laws.						
16.	Do you Agree that prevailing laws are sufficient to take care of crimes towards Women's in India?	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
17.	Should the prevailing laws Be amended Or Re-written with severe Punishment for Crimes against Women's.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
	GROUP VII – Solutions to avoid such abusive behaviours/incidences.						
18.	Due to delay in justice to the Rape Victim, do you agree that Encounter of the Rapist is the solution for speedy justice to the victim.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
19.	Do you Agree with that the ideology of Swami Sadhguru (Isha Foundation) that there is a need to understand and educate people to stop crimes like rape against Women's.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
20.	Do you Agree that there should be separate Courts in India for crimes against Women's.	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho
	GROUP VIII – Opinion regarding Capital Punishment						
21.	Should Rape be punishable by Death Penalty?	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho	Accept Ho

Changing Investment Behavior with the Onset of Fintech

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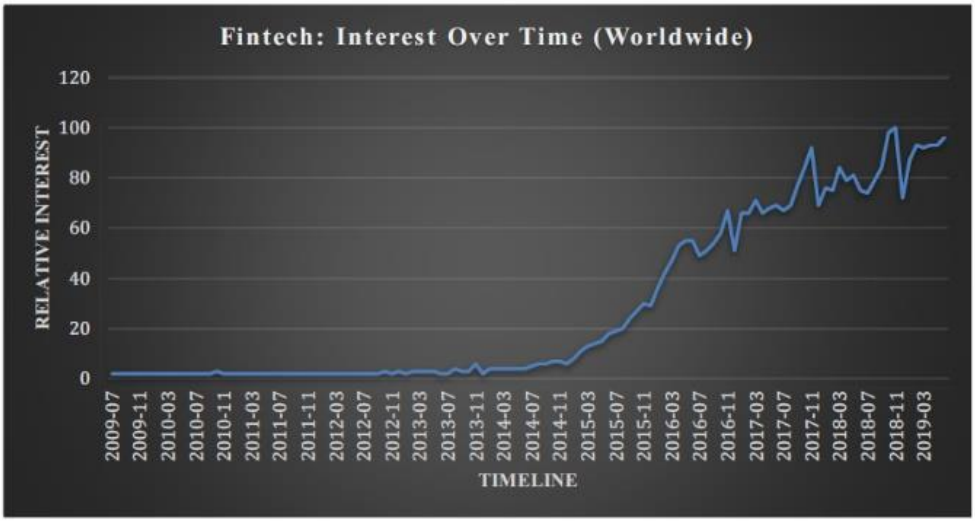
Introduction

Finance accompanied with technology brings about the branch of Fintech, thereby referring to the enterprises that make use of technology to upgrade financial services and the processes associated with it. Fintech is booming in the recent era. Fintech provides a platform to effectively manage various operations, businesses and consumer customization. Fintech makes use of software platforms to make the process automated thereby reducing the problems associated with traditional platforms. Fintech is made use of in several industries such as mobile banking, insurance, crypto currency like bitcoin, investment apps, payments, loans, credit scoring, stock trading, etc. Fintech companies provide a mix thereby bringing technologies like blockchain, Artificial Intelligence, data science on a united platform in to enhance safety, speed and efficiency. Now, fintech is used to make all processes customised. A collected data compilation of published FinTech patent applications in the 2003–2017 period was accumulated and analysed (Chen et al. (2019)). This study revealed that publicly traded companies as a group have driven only a minor range of FinTech innovations to date. Private firms and non-firm individuals account for about 62.7 percentage of FinTech patent filings. 57.8 percentage of the FinTech corporate filings actually belong to technology domain outside the financial industry. Behavioral finance comprises of the influence of psychology on the investment behavior or financial analysts and its subsequent effects on the market outreach. The theory of Behavioral finance states that:

1. Investors are treated as “normal” not “rational”
2. They actually have limits to their self-control
3. Investors are influenced by their own biases
4. Investors can make wrong decisions due to cognitive errors

Although behavioral finance treats investors as “normal”, they still make some decision errors which can be classified as self-deception, heuristic simplification, social influence and emotions. Behavioral Finance is used to understand the psychology of people and which leads us to understand the market anomalies. If the investors have complete information about the asset pricing, pricing of securities in the market, the prospect of the company in the future, government guidelines for investment in the securities, still they can make decisions irrationally. This happens because of the fact that investment decisions are affected because of potential outcomes as well as emotional outcomes. The study of behavioral finance will help investors invest in profitable areas and back out from loss-making ones. Fintech can be divided into three categories that is the financial industry, innovation and law/regulation. Accordingly, there are various stake holders like consumers, players in the market and the regulatory front.



Source: Google Trends (June 01, 2019)

Literature Review

A Report on Accenture and CB Insights has described companies operating in Financial domain as companies that cater to technologies for data analytics, payments, banking and corporate finance, capital markets, as given by (Skan, Lumb, Masood, & Conway, 2014). The FinTech Report: Investment Trends in FinTech (2015) by the Silicon Valley Bank as reported a sharp growth in technology in the area of personal finance, banking, payments, investments made in the retail domain, equity financing, field of banking and research, alongside banking infrastructure. As per (Dapp, 2014), the rise in the field was enhanced by an apt combination of hardware (smartphones nowadays), and various technologies in software development along with growth in communication technologies. Banks have played a big role in adopting technologies and in today's era, most of the services are being provided via electronic channels to an extent that the investment in this has become a necessity (Alt & Puschmann, 2012). This serves as a new industrial revolution expanding its reach in the finance domain thereby having a coverage of applications, for instance, blockchain, cryptocurrency ,digital payment services, online trading thereby transforming every space and the way at which things operate.(Goldstein et al., 2019).The money transacted via digital offerings is to be the growth driver in developing economies by $3.5 trillion by 2025.The World Bank (2018) predicts the financial services sector to show a manifold increase through mobile phones in comparison to the traditional banking services. Fintech will mould the future of the industry (Chuen and Teo (2015)) and innovations in fintech will lead to disruption of the operation of traditional financial markets (Lee and Shin, 2018; Chanson et al., 2018). FinTech could increase consumer benefit and decrease in the financial crisis (Loo (2018)).

Fintech is now emerging in different countries. Organic FinTech innovation could improve efficiencies for promoter banks, but FinTech entrants increase competition for incumbent banks (Navaretti et al. (2018)). Fintech companies use cloud computing that disrupts the working of traditional banks (Gozman and Willcocks (2019). The share of fintech lenders in the market has raised by four loops in six years (2010-2016) in the US market as they take less time to process

loan applications, maintain similar default rates and have a high time of refinancing (Fuster et al., 2019). Fintech enterprises also adjust their supply quickly as per demand. Fintech businesses are able to tap the untapped markets, small and medium sized enterprises that were not covered by old banking practices. Fintech leads to financial inclusion and promotes economic growth. It has reduced the gap which was present before. However, the risk has increased due to the use of big data in the domain. This paper deals with the impact of fintech on behavioral finance. We have analyzed a group of people who invest and asked them about their financing decisions. There are certain biases in behavioral finance that need to be addressed. These Biases include:

- Overconfidence - Investors are highly optimistic about their own investment decisions and feel they have adequate information. They can also incur huge losses if they only concentrate on their own abilities and ignore other factors.
- Disposition effect (Shefrin and Statman (1985)) - Investors tend to sell high selling stocks to increase gains and hold low selling stocks to delay losses. Both gains and losses will affect the final investment decisions.
- Herding effect (Shiller (2000) and Kahneman and Tversky (1979)) - Here, investors tend to follow the decisions of other investors rather than relying on their own information. This can lead to price deviations and reduced returns
- Mental accounting (Thaler (1985)) - Investors divide their investments into various portfolios on the basis of their mental categories according to their idea of maximization of returns and minimization of risks. They might not always be profitable but satisfy the emotions of the investors.
- Confirmation bias (Dickens (1978)) - Investors have preconceived impressions and this results in the fact that they align towards this information and ignore other information.
- Hindsight bias ((Fischhoff and Beyth(1975)) - Here the investor makes a cause and effect relationship between two events in investment decision making even though there is no relationship.
- House money effect (Thaler and Johnson (1990)) - There is a direct relationship between profits and risk.
- Endowment effect (Kahneman et al. (1990)) - Investors give a lot of importance to what they currently hold and don't want to make any changes. Due to this, they can miss out on profitable opportunities and such opportunities may remain at a low level.
- Loss aversion (Benartzi and Thaler (1995)) - Investors take more risks when there are chances of loss and don't take any risk when there are sure chances of profit.
- Framing (Tversky and Kahneman (1981)) - Risk-taking decisions depend on the presentation of information. When the information is provided in the positive frame, investors avoid risk to make sure profits and when the same information is provided in the negative frame
- Home bias (French and Poterba (1991), Tesar and Werner (1995)) - Investors feel a sense of belongingness towards domestic companies and are more inclined to invest in them even if they give lower returns.
- Self - attribution bias (Bem (1967, 1972)) - People attribute their success to their own hard work and intelligence and blame their failure on others or outside factors
- Conservatism bias (Edwards (1982)) - Investors stick to their own beliefs and forecasts and don't consider other factors.

- Regret aversion (Loomes and Sugden (1982), Bell (1982) and Fishburn (2013)) - Regret can affect investors to either take more risk or no risk at all in their future investments.
- Recency - Investors only depend on the recent news and events and ignore older information even if it might have be useful
- Anchoring (Tversky and Kahneman (1981)) - Investors make their judgments based on initial information they receive and they make subsequent decisions on the basis of this. Their decisions are based on some previous information.
- Representativeness (Kahneman and Tversky) - Investors assess characteristics of events and consider them similar to other events. Hence they feel that some events are more likely to occur which may or may not be true

The two fields of behavioural finance and the financial technology have a significant interdependency. Trust has been seen to be a significant factor in this domain as shown (Hong and Cha, 2013; Tams et al., 2018). It is seen to be a foundation (Flavian et al., 2006; Kim et al., 2008; Qureshi et al., 2009; Pontea et al., 2015; Sullivan and Kim,2018). Along with that, the effect herding, (that is again seen to be a prominent factor) has also been seen on the financial investment behaviour and technology (Parthasarathy and Bhattacherjee, 1998; Rao et al., 2001). It has been argued that herding is likely to lead to disappointment and regrets of new technology adoption or financial investment. Herding refers to the phenomenon where people make decisions by imitating others and compromising one's own belief (Chandra et al., 2010; Sun, 2009; Sun, 2013). Situational normality, system quality and subjective norm are found to significantly lead to trust in FinTech service, whereas herding and subjective norm are found to play important roles in shaping structural assurance. A study showing the impact of technology on Bitcoin shows that users who are exposed to social pressure in a greater way invest in it in a more impulsive manner, as per Baur et al. (2015) . A study conducted to analyse the impact of investment behaviour on Bitcoin showed that it is highly unplanned. The volatility of price and motivation of a greater led the Bitcoin users to lose self-control and triggered by impulse that is strong in nature. Along with that, it was also found that some people unfamiliar with the Bitcoin process invested in it because of a friend's suggestion which again shows the impact of external factors influencing the decision.

Objective(s) of Research:

- To study the role of behavioral finance in investment making decisions
- To analyze how FinTech has gained momentum in today's era
- To study the interdependency of behavioral finance and FinTech and how FinTech has affected investment behavior

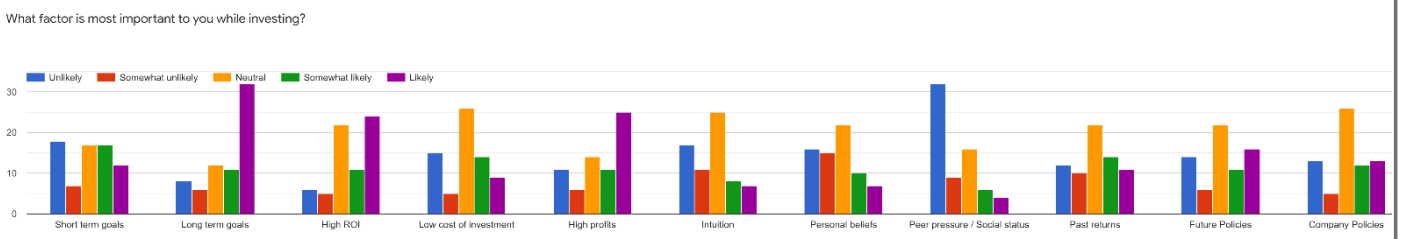
Methodology:

The paper reviews a multi-year research, which is secondary in nature, and the published information available in the journals, public domain, white papers, and survey reports available on the web on Behavioral Finance, emerging technologies based in the area of Finance, and the inter dependability of the two fields on each other. We conducted a survey in the form of a questionnaire to understand the factors that influence investment behavior. The various parameters include the demographics, the sector people want to invest in, popularity of various financial instruments, external factors that influence investment behavior etc.

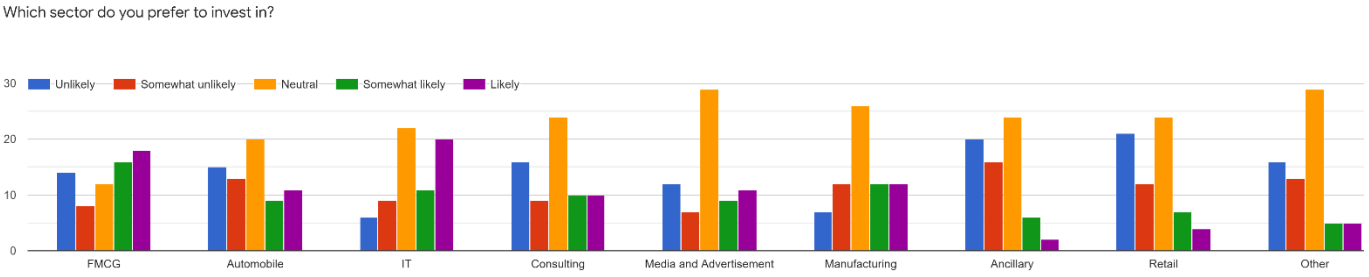
The other segment of our paper deals with understanding the concept of FinTech and its emerging prospects in the 21st century. The last lap deals with the dependability of the two concepts, in order to show the change in investment behavior due to the incoming of financial technologies and how the scenario has changed in the financial sector in this context

Findings and Discussions:

The questionnaire collected as a part of the primary survey comprised of questions that took the demographic information like age, qualification, city of residence and annual income. These were taken to take into account how different age groups behavior towards investments and that income group always plays a vital role in the same. About 60% of the respondents were of the age bracket (16-30), about 20 % were of the age of (31-45), 10% were of the age bracket (46-60) and remaining 10% of above 60 years of age.

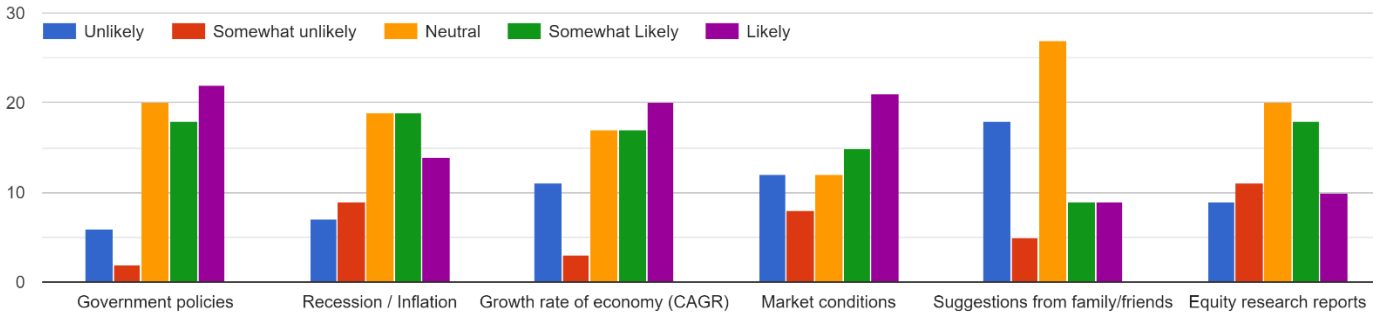


Another question was to know the most important factor for people while investing. The different factors included short term goals, long term goals, high ROI (Return Of Investment), low cost of investment, high profits, intuition, personal beliefs, peer pressure / social status, past returns, future policies and company policies.



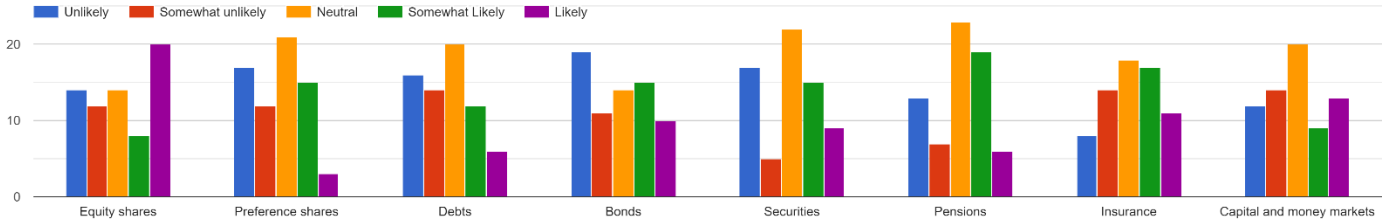
The next question in line was to know the preference sector of the respondents, out of FMCG, Automobile, IT, Consulting, Media, Manufacturing, Retail and others. The most popular sector emerged to be FMCG and the least being Automobile.

What external factors affect your investment behavior?



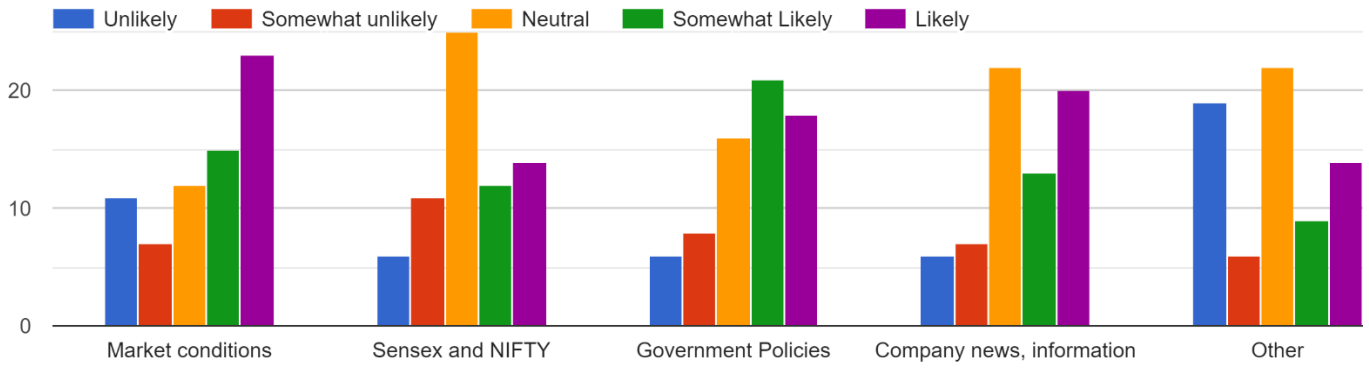
The question next in line comprised of factors that lead to their behavior, namely, Government policies, Recession, Growth Rate of the economy, Research Reports, Suggestions from friends and family. It was found out that growth rate of the economy, suggestions from friends and family , government policies influenced the behavior of investors the most followed by research reports.

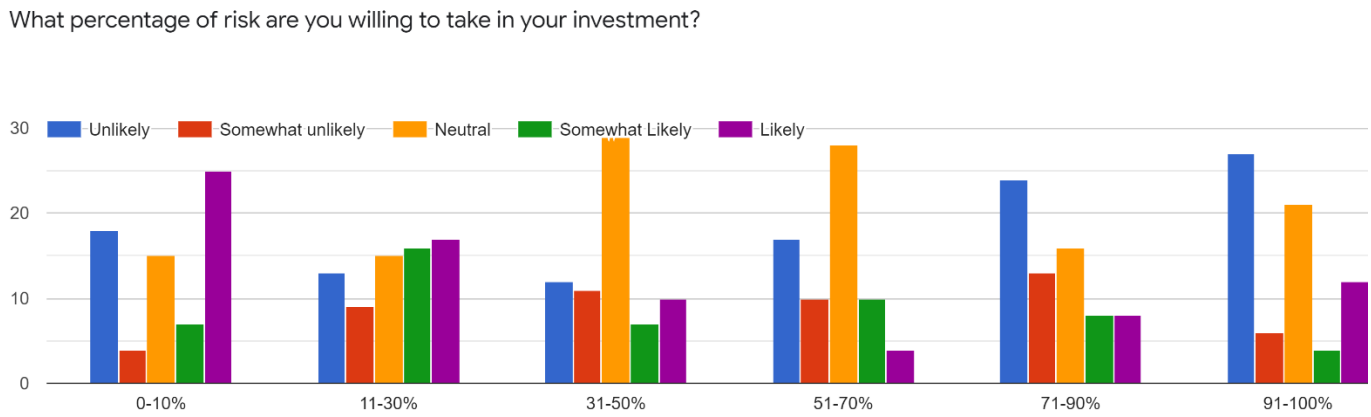
Where do you prefer to invest? / Which financial instrument do you prefer to invest in?



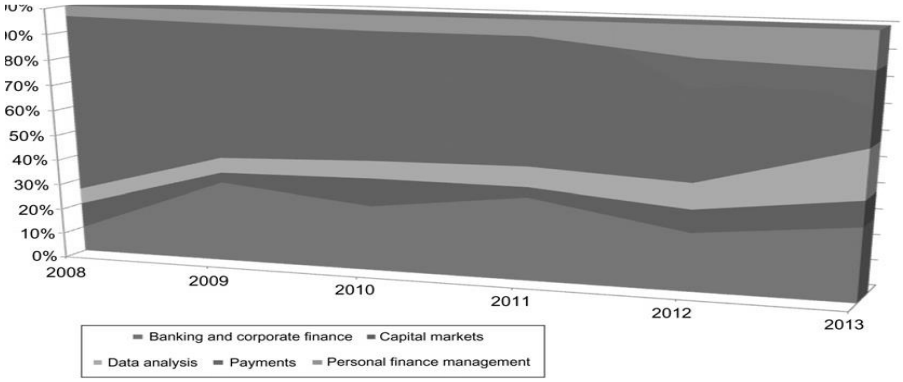
Another question was to know the financial instruments people were more likely to invest in, out of equity shares, debts, bonds, securities, the more popular ones being equity shares and bonds and insurance was more popular in the respondents in the age bracket of (41-60) and above.

How do you estimate the risk of your investment?

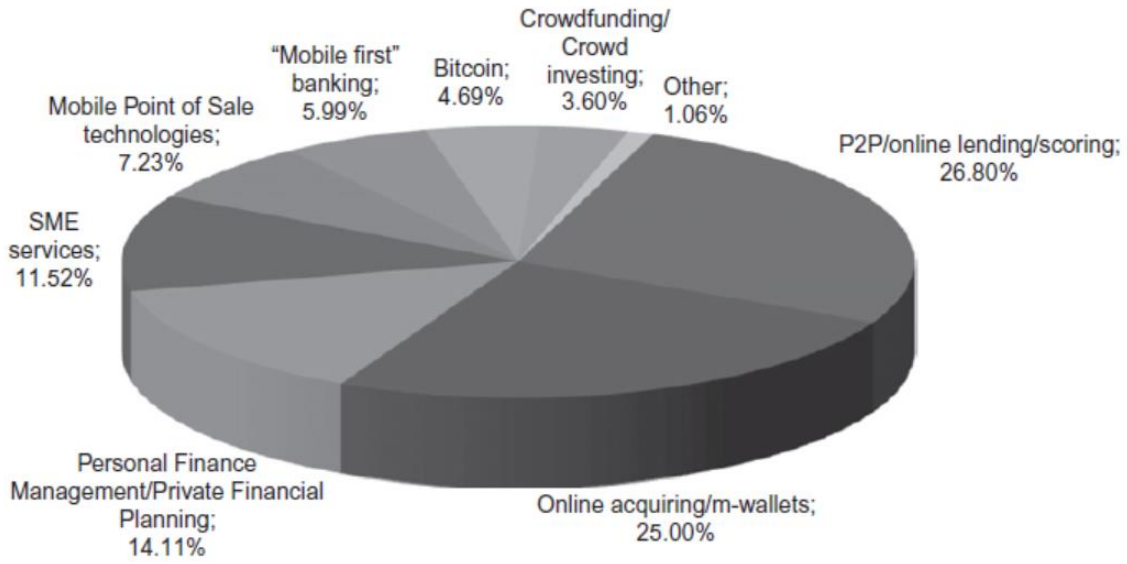




Another question was to know how the respondents estimate their risk potential before investing, the options being news, government policies, Sensex and Nifty, the highest being News followed by Nifty and Sensex. This helped us evaluate the various factors which influence Investment Behavior.The second aspect of the paper analyzes the concept of Fintech in today's era. After studying various research papers, we came across the following findings: The distribution of Financial Technology across the various domains is as follows: Fig. 1. Distribution of the Investment Areas in FinTech, Source: Statista data.

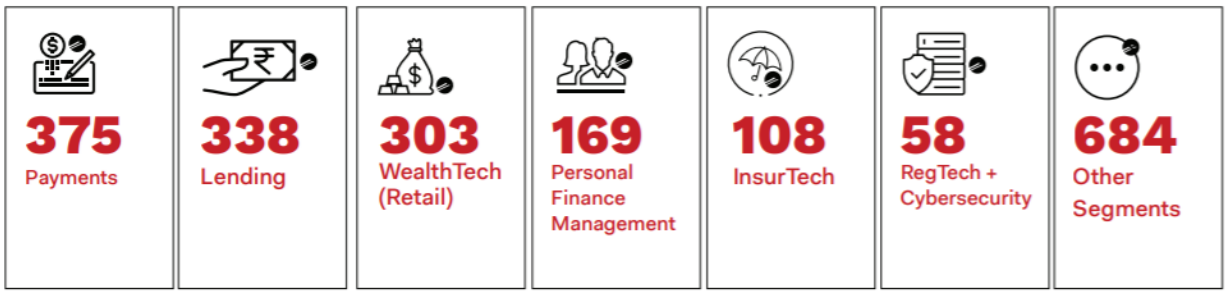


The industry comprising of FinTech industry covers the following core areas: finance and investment, operations and risk management, payments and infrastructure, data security and monetization, and customer interface. The distribution of investment in the FinTech that most popular in the areas of online lending, peer to peer lending, mobile wallets etc. The distribution is given as follows:



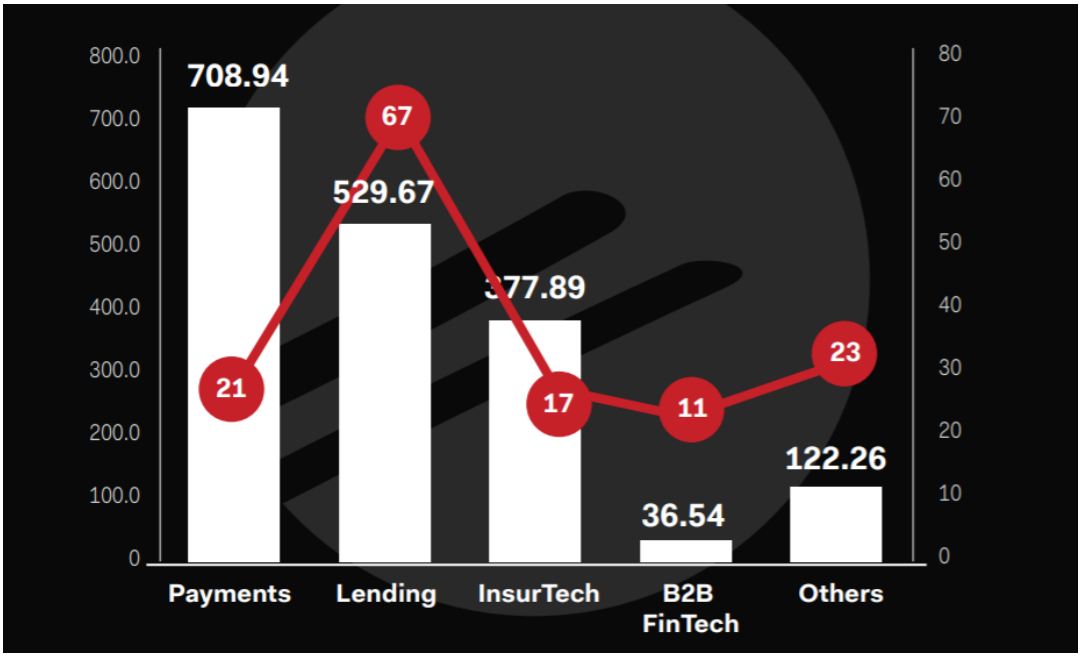
2008_2013 (%). Source: Statista data. Arner et al. (2015) have worked out a topology of the FinTech industry. FinTech has brought about a better experience in the finance industry. FinTech startups in India have gained momentum, the data for the same is as follows (India Fintech Report Medici):

NUMBER OF FINTECH STARTUPS BY SEGMENTS



Customization of services is being offered by FinTech thereby reducing costs and offering personalized products. Indian banks have been much more progressive in their approach by increasing their partnerships with FinTechs, like as Kotak 811 and SBI Yono. ICICI Bank is empowering a neobank called Open. It began with the launching of identity in the form of Aadhaar and then moves like Pradhan Mantri Jan Dhan Yojana to store money and then platforms like UPI

coming to existence. As per the Fintech report by Medici, India has the following statistics in the field of FinTech:

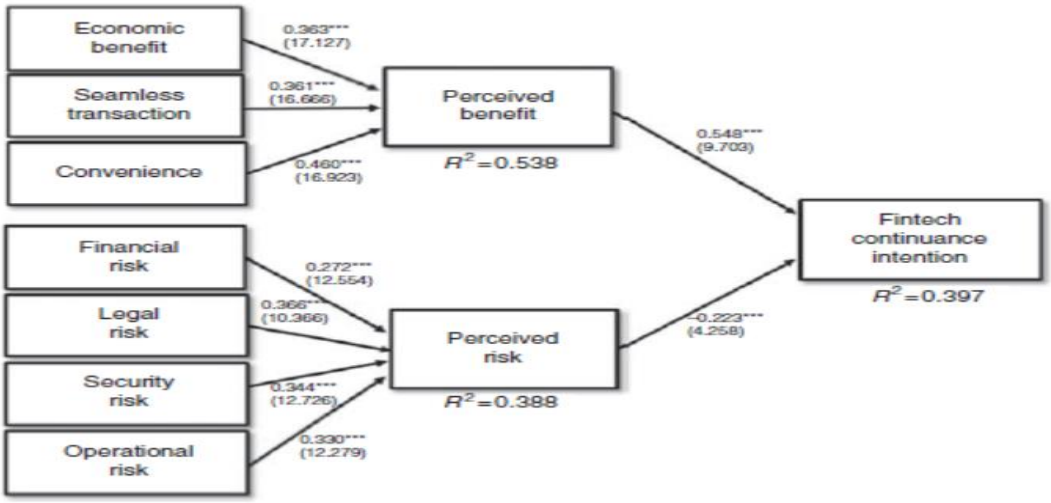


Despite all the advancements in the area of Financial Technology, Cybersecurity and privacy issues have been a major concern. Global businesses have recorded almost 30 million security breaches in the past. The data obtained from the RBI depicts that the banks have lost Rs.252 crore to cybercrime between April 1, 2014 to June 30, 2017 .

In 2016, Reserve Bank Information Technology Pvt. Ltd. was being set up by the Reserve Bank of India to cater to the needs of the cybersecurity for the bank and the entities. In 2017, the government of India announced to set up a Computer Emergency Response Team for the financial sector, that would analyze, information on cyber incidents in sector in addition to sending forecast information along with alerts.

The third aspect deals with the relation of the two concepts, that is the dependability of behavioral finance on FinTech. As per (Hyun-Sun Ryu paper titled," What makes users willing or hesitant to use FinTech?", Software College, Sungkyunkwan University, Suwon, The Republic of Korea,2017)

Authors	Research context	Research content	Main factors of benefit	Main factors of risk
Kim *et al.* (2008)	e-commerce	Investigated the antecedents of trust and risk based on the benefits-risks framework	Single dimension	Single dimension
Lee (2009)	Internet banking	Explained the intention to adopt online banking combining perceived benefits and risks	Financial benefit Transaction speed Information transparency	Security/privacy risk Financial risk Social risk Time/convenience risk Performance risk
Benlian and Hess (2011)	Software as a service (SaaS)	Assessed the major opportunities and risks associated with the Intention to adopt SaaS	Cost advantage Strategic flexibility Focus on core competencies Access to specialized resources Quality improvements	Performance risk Economic risk Strategic risk Security risk Managerial risks
Liu *et al.* (2012)	Mobile payment	Investigated the mobile payment adoption based on the risks-benefits analysis	Single dimension	Financial risk Privacy risk Psychological risk
Melewar *et al.* (2013)	Online group shopping	Investigated perceived benefits, perceived risks, and trust	Price benefit Convenience benefit Recreational benefit	Financial risk Psychological risk Product risk Time risk
Lee, Park and Kim (2013)	Social network service (SNS)	Investigated benefit and risk factors influencing Intention to share information in SNS	Self-clarification Social validation Relationship development Social control Self-presentation	Security risk Stigma risk Face risk Relational risk Role risk
Farivar and Yuan (2014)	Social commerce	Analyzed users' social network usage using benefits, risks and trust	Social benefit Commerce benefit	Social risk Commerce risk
Abramova and Böhme (2016)	Bitcoin	Explored drivers and inhibitors of Bitcoin use	Transaction process, Security and control Decentralization	Financial losses Legal risk Operational risk Adoption risk



Notes: *$p<0.10$; **$p<0.05$; ***$p<0.01$

As per the figure above (Hyun-Sun Ryu Software College, Sungkyunkwan University, Suwon, The Republic of Korea,2017), trust in FinTech service and structural assurance is found to impact the customer intention positively.

Conclusion

The brewing concept of FinTech poses various questions to know the detailed workings and the upcoming changes that these technologies would bring about in the era. Our paper helps to understand the concept in detail and how gradually it is gaining ground in today's era. Besides, Investments were always a part of the system since ages but the nature and behavior of investment has come a long way. Since the oncoming of FinTech, various options have opened up leading a way to various modes of payments, investments etc. Not only that, trust has been a major foundation of investments, since a lot of security breaches, privacy attacks, cybersecurity issues have been coming up, that poses a threat to the field but initiatives have been taken by the government to improvise on the same. Our paper has covered all the three objectives, thereby providing the analysis for the same.

Limitations / Future Scope of the Study

Our Study composed of dealing with FinTech and Behavior of Investment and exploring the link between the two segments. Our study comprised of a limited a set of respondents, which can be refined to elaborate the research. Furthermore, more analysis can be taken ahead to know the nuances of investment behavior. Alongside, detailed work can be done on the change in investment behavior with respect to various financial instruments which is not elaborated in our research.

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An exploration of gaps in the Open and distance learning (ODL) higher education system in India with reference to Industry 4.0

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Abstract

India is confronting the Fourth Industrial Revolution. The Fourth Industrial Revolution represents a fundamental change in the way we live, work, educate ourselves and relate to one another. It presents a challenging phase in human development, enabled by extraordinary technology advances, evolved as a result of earlier three revolutions. These technical advancements merge the physical, digital and human worlds into work and life. The Fourth Industrial revolution also impacts the higher educational sector, thereby creating immense growth, as well as, trials to face. Market and socio economic changes impact education and the methods of imparting education, namely, the Full time conventional as well as the Open and Distance learning (ODL) modes. Higher education provides people the means to earn and support their existence.

This paper explores the prospects of how the Industry 4.0 as a revolution forces us to rethink the techniques and approaches that higher education can develop, creating support for all those, who are unable to study through a regular full time mode for certain reasons. The research adopts both descriptive and exploratory methods to study and find out the parameters which ODL program is already covering and the possible gaps which might impact the satisfaction, employment and growth needs of the learners. The research also studies the deployment of ODL programs, in the light of technology-driven transformations made possible, as a result of the Fourth Industrial revolution. The outcome may create massive opportunities to coach everyone and create more value for the stake holders, within the available educational resources.

The researcher has undertaken IGNOU (Indira Gandhi National Open University) as a representation for ODL programs. The secondary data sources were analysed to find out the methods, operations and consumption of ODL programs. Primary data was collected and analysed by means of structured survey. The researcher also attempts to explore factors affecting the ODL programs, and suggest ways to minimise any existing potential gaps to further increase student satisfaction aiding development of Open and Distance learning Program, benefiting all stake holders.

A. Key words: Open and Distance learning (ODL) program/ courses, Industry 4.0, ICT, IGNOU, Higher education(HE)

B. Objectives:

1. To discuss the elementsand skill requirements of Industry 4.0 and their possible application to the Open and distance learning program/ courses.
2. To find out the factors affecting the Higher education (ODL) program.
3. To highlight the mode of Higher education Open and distance learning program in India with reference to IGNOU as representation.
4. To identify the challenges and gaps existing in the Higher education (ODL) program with relevance to student satisfaction.
5. To suggest ways to minimize potential gapsand overcome challenges benefiting all stake holders with reference to Industry 4.0

Introduction:

"The whole purpose of Quality education is to turn learning into earning, currentsituation into better solution and talent into meaningful living." T Y Howard

Higher education today has transformed itself, confronting barriers posed by the dynamic world economies, uncertain times and preparing students for the jobs which didn't exist some time ago but are existing today. Open and Distance Learning (ODL) system gives opportunity to citizens who are separated by distance, time, as well as who are living at geographically disadvantageous locations of the country.

In India, Higher education through Distance and Open learning consists of Indira Gandhi National Open University (IGNOU), State Open Universities (SOUs), Institutions and Universities offering education through Correspondence Course Institutes (CCIs) in conventional dual modes. ODL mode gives flexible approach of working, independence to current workers, students and more exposure towards further learning to all alike including women and adult senior learners.

The Indian government's Distance Education Council sets and enforces academic standards of Open and Distance Learning programs, publishing a list of recognized programs and subject areas.

Preparing students to sustainable employment options holds the key to make them enter the Fourth Industrial revolution.

The emergence of Industry 4.0 is driven by rapid technology progress.

The concepts like, IOT, Big data analytics, Artificial intelligence (AI), Cloud computing, Simulation, Robotics, Key technologies, Augmented Reality (AR) are being used to create more meaningful and competitive boost to the business with integrated ERP systems, that spans not only inventory and planning, but also financials, customer relationships, supply chain management, and manufacturing execution. It digitizes, gives real time data.

Industry 4.0 is trending, touching the ODL education with various technical opportunities. The education and businesses are restructuring and striving to produce the workforce for this new world and the educational experience to match it.

Fourth Industrial Revolution (Industry 4.0) and Futuristic approach of Higher education:

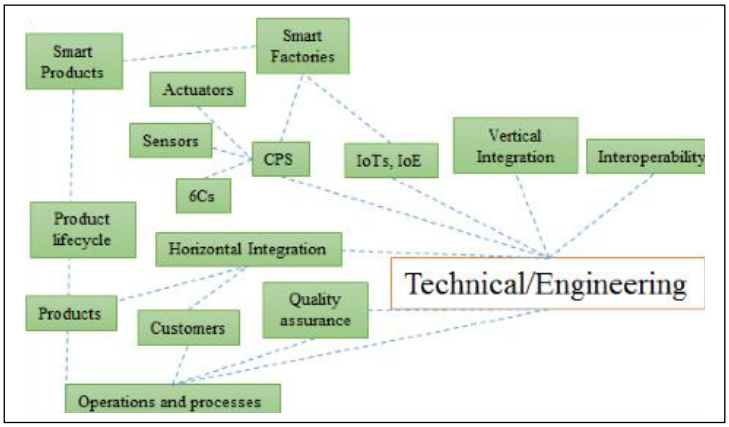
- The term, Industry 4.0was originally coined by 'Kagermann' in 2011 while referring to the Fourth Industrial revolution, which is gradually changing the ecosystem around people.
- Education providers are collaborating with Industry 4.0 to train the current population for upcoming jobs and using effective technical platforms to disseminate HE ODL courses.

- Empowering females to the modernized and technocratic ways of industry 4.0.

Possibilities of Adopting Elementsand Skills of Industry 4.0 for Higher education modes:

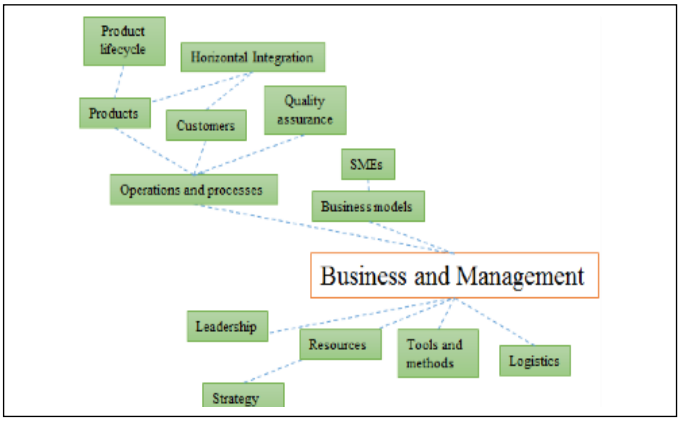
- Adopting elements of technical interface and skills of Industry 4.0 into the methods of imparting ODL program can create better educational service and experience for learners. (Universities of the future Report, www. universitiesofthefuture.eu)

- **Technical and Engineering: Application to customize student requirements**



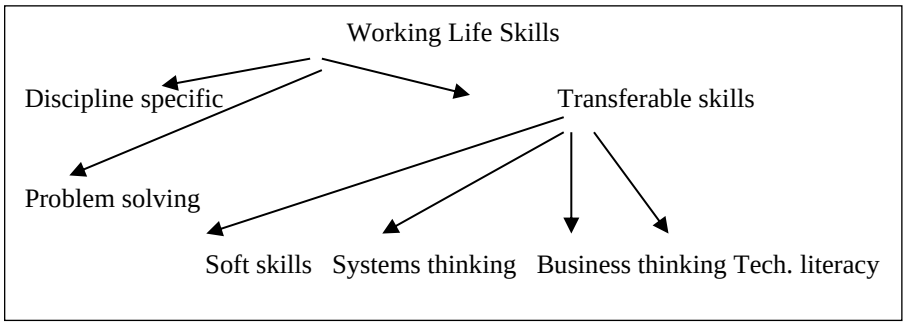
AI, combined with CPS gives smart solutions, enables decision making, and creates new processes for operations and quality control. IOT objects communicate with each other combining knowledge of sciences.

- **Business and management competencies: Creating value for stakeholders**
Combining technological and management skills to attract, retain, and educate human resources by the managers, educators and trainers, as facilitators for these new tech enabled trends.



- **Working Life and educational skills: Transferred to the educational ecology**

The Skills which can be transferred to the educational system in curriculum and application, by combining the elements of Industry 4.0 and creating outcomes for students with added learning, helping them with enhanced job opportunities.



Supported Learning:

Supported learning addresses Learner deficits, which can be tackled by coaching on several competencies. (Mike Hamilton- Director, TSTL Technology,2019, www.digitalinclusion.co.za)

- ICT Tools development
- Interactions and Bridging the subject matter gaps
- Verbal and Written communication
- Creating Digital citizenship
- Tutoring Interventions

Factors affecting the Open and Distance (ODL) learning program:

The factors and the demand drivers influencing the Open and Distance Learning program is clearly observed for a country as vast as India.

- **Vast geography and remote locations far from main city**
- **Senior and Adult learning**
- **Female literacy and higher education empowerment covering Indian demography**
- **Working on the job population** for career development, time flexibility, digital modes of delivering contents have increased demand of ODL programs across all sectors.
- **Technological growth with digital platforms** like, SWAYAM, SAKSHATe-Repository connects ODL students via CEC e-content,'e-PG-'Pathshala', Virtual classrooms, MOOCs via NPTEL National Program on Technology Enhanced Learning.
- **Providing Literacy for all at minimum cost:** "Open and distance education enabled and delivered through information and communication technology (ICT) holds the promise to address the questions of access, and provide new, alternative forms of capacity building." (NKC, 2009, page 4)
- **Global players have brought both change and competition**: Appearance of new global Universities offering on-line ODL programs. Today, 'Coursera' reaches out to 40 million people and 1900 businesses all over the world and operates with 16 well-known universities, such as University of Stanford, Princeton, Michigan, etc. Course certificate recognized by companies like Google, IBM, and more. (www.coursera.org)

- **Enrolments upsurge in Distance education**:HE purpose was fulfilled through Distance enrolment constituting 10.62% of the total enrolment in HE, of which 44.12% were female students.**ODL fulfilled dream of attaining education from remote areas. The upsurge is seen gradually through the years, 2017, 2018, 2019.**
  Enrollment highlights (As per Annual Report by (AISHE) All India Survey on HE)
  Increase in student enrollment in Undergraduate, Diploma and Certificate courses

2018-19

Level	Male	Female	Total
Ph.D.	28	25	53
Postgraduate	454640	544447	999087
Undergraduate	1616601	1083611	2700212
PG Diploma	57060	42331	99391
Diploma	70948	59246	130194
Certificate	20053	22765	42818
Integrated	234	79	313

Level wise Distribution of Distance enrollment- 2018-19 (Box1)

2017-18

- Gradual increase in Male students for integrated programs from 1 enrollment to 178 as compared to 2016

Level	**Male**	**Female**	**Total**
Postgraduate	612906	565601	1178507
Undergraduate	1567538	986873	2554411
PG Diploma	51658	38421	90079
Diploma	72223	50521	122744
Certificate	36313	49289	85602
Integrated	178	73	251
All	2340816	1690778	4031594

Level wise Distribution of Distance enrollment- 2017-18 (Box 2)

2016-17

- In All, 3824901 enrolled for Open and Distance learning modes.

Level	**Male**	**Female**	**Total**
Ph.D.	87	49	136
Postgraduate	510516	597836	1108362
Undergraduate	1421708	1077682	2499390
PG Diploma	41383	27252	68635
Diploma	64175	40053	104228
Certificate	17374	26775	44149
Integrated	1	0	1
All	2055254	1769647	3824901

Level wise Distribution of Distance enrollment- 2016-17 (Box 3)

IGNOU as a representation for ODL in India:

Indira Gandhi National Open University (IGNOU) was established in 1985 by an Act of Parliament with the dual responsibilities of

- Enhancing access and equity to higher education through distance mode
- Promoting, coordinating and determining standards in open learning and distance education systems.

Highlights of IGNOU activities:

- **Educational development of North-East Region (NER)**:

The University has established 8 Regional Centers in the North-East Region with special attention to disadvantaged sections of the society and regions adding special study centers in the backward areas and districts with low female literacy rate.

- **Extensive use of ICT:**

  Information and Communication Technologies (ICTs) used extensively for imparting education. In addition to self-instructional printed materials, the university utilizes Audi/Video programs tapes, tele-conferencing, Gyan Vani (FM Radio), Gyan Darshan (educational TV Channels), computer networks for imparting instructions.

- **Large number of programs**:

  IGNOU has programs, ranging from purely academic to technical, professional and vocational at various levels leading to award of Competency Certificates, Diplomas, Bachelor's, Master's and Doctor's degree to successful candidates. Many of these programs are modular in nature.

- International Activities:

  IGNOU offers its programs in other countries, which include United Arab Emirates (UAE) countries, SAARC countries, under **SAARC consortium for Open and Distance Learning (SACODIL) and Global Mega Universities Network (GMUNET).**

  Collaboration with UNESCO and International Institute for Capacity Building: The University also offers its ODL program in collaboration with UNESCO in Africa and other continents through an agreement signed with Commonwealth of Learning (COL).

  Commonwealth of Learning for ODL:

- The Commonwealth of Learning (COL) is an intergovernmental organization created by Commonwealth Heads of Government, in Vancouver, Canada to encourage the development and sharing of education knowledge, resources and technologies. **It is dedicated solely to promoting and delivering Distance education and open learning.**

- India is third major donor in COL, after United Kingdom and Canadaand represented through Secretary, in-Charge of HE on the Board of Governors and COL committee.

- Educational Media Center for Asia (CEMCA) is in India and Joint Secretary in charge of Distance Learning is a member on Advisory Council of CEMCA. (mhrd.gov.in)

- **Technology support systems aiding functioning of ODL:**

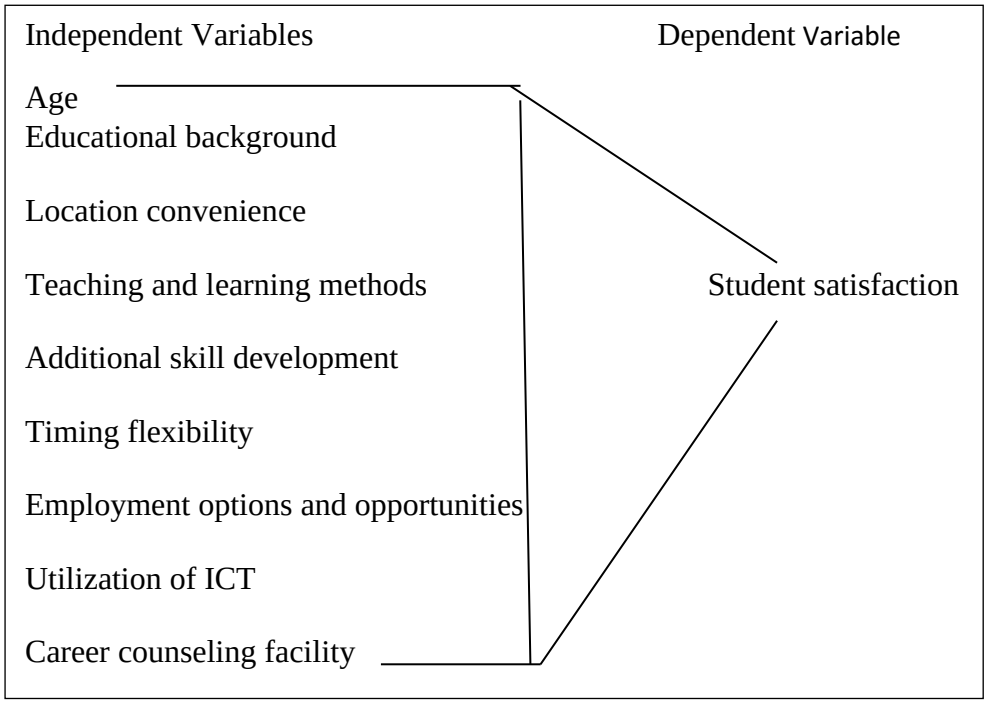
SAKSHAT e-Repository connects ODL students via CEC e-content, e- PG Pathshala, Virtual classrooms

- "One Stop Education Portal **SAKSHAT'**: IGNOU developed plan to use this platform, extensively to provide knowledge resources and impart education to its students.

MOOCs undertaken via IIT Bombay, NPTEL National Program on Technology Enhanced Learning

- The application of National Program on Technology Enhanced Learning **(NPTEL)**, National Mission for Education through ICT, linked with Satellite hubwith **Satellite Interactive Terminal (SIT)**, brings together all the stakeholders in the field of science and technology, higher education, research and development, governance to take the Technology advancement linked with ODL programs. (Bordoloi and Das, 2012)
- **SWAYAM,** Study webs of Active Learning for Young Aspiring Minds has been introduced by the Ministry of HRD, where teachers from institutions like the IITs, IIMs, and central universities have been offering online courses to the citizens of India.
- **(OERs**) Open provision of Educational resources: Defined by UNESCO in 2002, "Technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes, typically made freely available over the Web or the Internet" can be used in ODL mode to relay the lectures. (Kawachi, 2013).

Theoretical Framework:



Dependent variable: Student Satisfaction **Independent variable:** Attributes affecting Student satisfaction

Literature review:

Planning Commission Approach Paper: As we proceed into the new age Fourth Industrial Revolution 4.0, Planning Commission's Approach paper to the 12th Five Year Plans holds ground which clearly states that, "There is a need for a clear focus on improving the employability of Graduates. Indian Higher education is organized into 'General' and 'Professional' streams. General education' which is an excellent foundation for successful knowledge-based careers, often fails to equip Graduates with necessary work skills due to poor quality."
Choudhary and Shankar [1], (2016), mentions in their paper, that the quality of ODL program needs to grow with the changing and practical times in terms of employment opportunities, skill development, study material provided, career counseling at various stages of students, quality of relevant study components, to ensure better job opportunities which the students are lacking. But the paper does not talk specifically about the Upcoming challenges of the ODL program to suit the Industry 4.0. The paper states a clear need of up-gradation of content in higher studies or skill specific studies to attract quality employers since a lot of students took job other than their domain specific areas.

(Bordoloi[2]) Past research work done on the Open and distance learning program expresses that ODL program is vital to the large population of a country like India and can provide skill-based learning empowering the human resource to suit the up - coming challenges of the Industry. The challenges have been pointed out with regards to larger aspects like access to education, equity and employability, deriving long term benefits from education received, developing life skills, soft skills, access to technology, quality, innovation and research.

(Ally, Wark[3]): Mentions of ODL to the Fourth Industrial Revolution (4IR) is much required, since there is an urgency to adopt the technologies both in content and application; such as AI (artificial intelligence, Robotics, Internet of Things (IoT), and data analytics in education according to **Sustainable development Goals for education**and is "to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" as per United Nations Sustainable Development Agenda, 2030.

(Dr. Liza Simmons[4], 2015,) conveys in COL's Strategic planning Report,(2015-2021) that, COL has identified "education" and "skills development" as the two pillars of its Strategic Plan 2015–2021. The theme is "Learning for Sustainable Development" and reflects COL's commitment to strengthening human capital through quality learning opportunities that lead to livelihoods and empowerment. COL will draw on its expertise and experience in open, distance and technology-enhanced learning to increase access, reduce costs and enhance the quality of learning for all.

(Mohammad, Aly,)[5] The study on 'Learning for Sustainable Development in the Fourth Industrial Revolution' by calls for scope for further research in their paper mentioning that Case studies, Cost verses benefit analysis of research across all sectors, cultures, and geographic locations to develop a more comprehensive, perspective to deal with the global challenges of implementing 4IR technologies or synergistically attaining Sustainable development goals.

(Sakhapov, Absalyamova, 2018)[6] : The basis of Industry 4.0 is the concept of the Internet of things. It assumes that each physical object ("thing") has an integrated technology that allows it to interact with other objects and integration of “cyber-physical systems”, CPS, in production processes. This could be a challenge for the lots of specializations and professions and could cause a fundamental change in the nature of education and the organization of the educational process.

Research Methodology:

The paper adopts both Descriptive and exploratory research methods. The data for the research was conducted on the basis of both Secondary and Primary data sources of information.

Research Design:

The study was designed to provide relevant information, both qualitative and quantitative, regarding Open and distance learning programs to take informed and constructive decisions looking at the major concerns of respondents.

Both Secondary sources and Primary sources were used for Data collection

Primary sources:

Primary data was sourced through structured questionnaire sent across to respondents of Open and Distance learning program by means of web-based form, to approx. 121 respondents, keeping in view, the requirements and variables identified from the literature review.The respondents who are either stake holders related to ODL program or to students who have completed any course through ODL mode.

Secondary sources:

The secondary sources include data extracted from Reports of MHRD 2016, IGNOU Tracer Universities of the Future Report

- Understanding India Report, British council, 2014
- IGNOU Tracer Studies Report, 2016
- Report on All India Survey on Higher education, 2015-16, 2017-18,2018-19.
- Department of Higher education, MHRD, Govt. of India
- Report by UNESCO (2002)
- Human development Report, 2016-17
- Planning commission Report, 2014-17

Population and sample:

Convenience sampling

The survey questionnaire received around 43 responses

Dependent Variable:

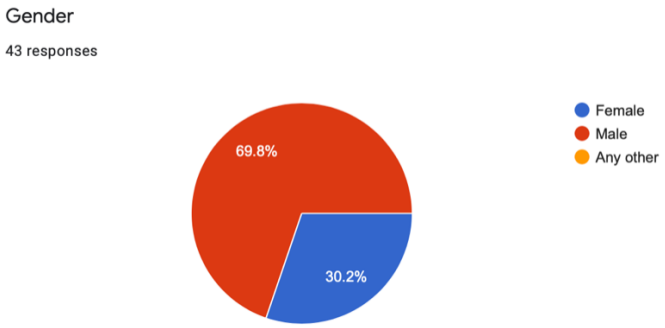
Student satisfaction

Independent variables:

Age
Educational background and Qualification
Convenience of study
Admission process
Technology support facilities
Regularity of lectures
Syllabus effectiveness
Career counseling assistance and facility
Placement/ Employment assistance and facility
Providence of additional Skill development modules
Interactive fun activities

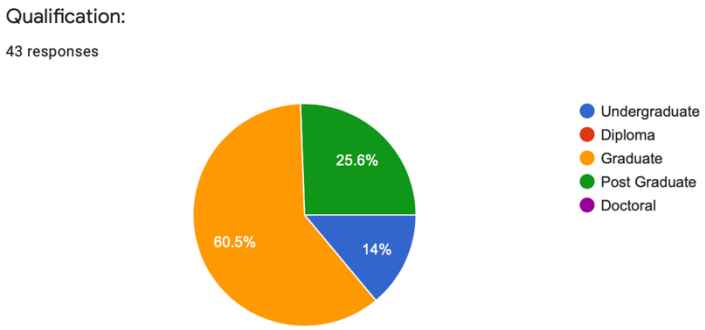
Data Analysis:

Q1. Gender of respondents:



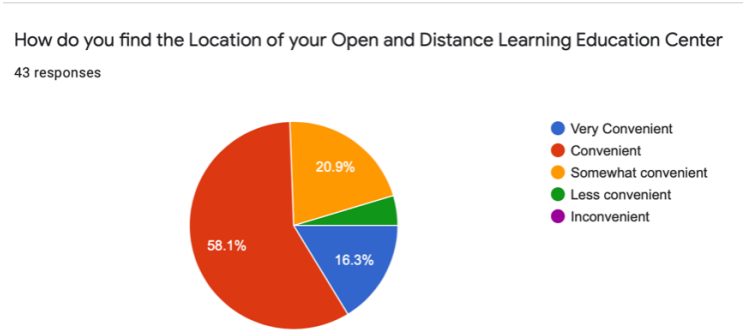
Interpretation: Male respondents were more than Female respondents

Q2. Educational background of respondents (Qualification):



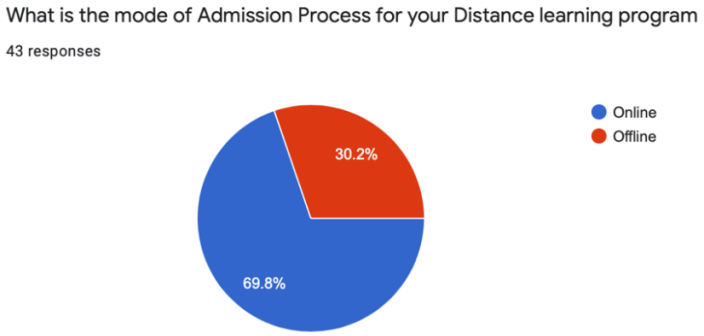
Interpretation: More Graduates opted for the ODL courses, followed by Postgraduates and Undergraduates

Q3. Convenience of the location of the ODL study center.



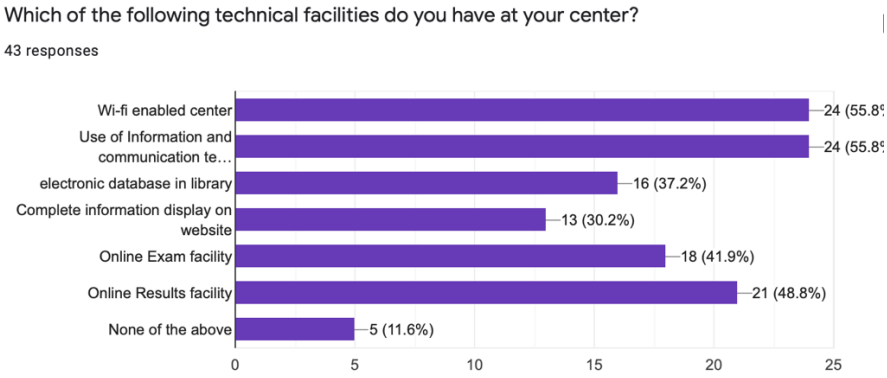
Interpretation: Convenience towards location was expressed by more respondents.

Q4. Admission process of ODL program



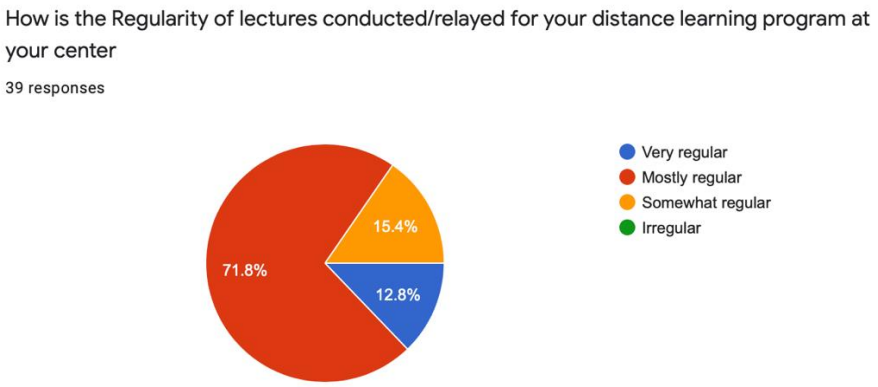
Interpretation: Online mode was more opted for as compared to Offline

Q5. Technology supported facilities at the ODL study center.



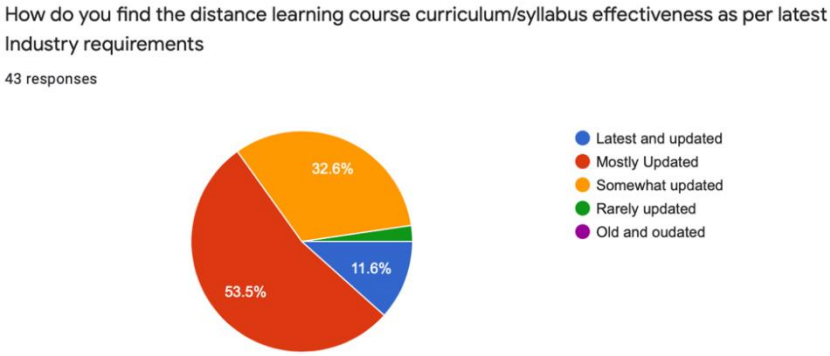
Interpretation: Most centers were Wi-Fi enabled, used ICT platforms and e-library, Website information display at some centers, online exam & result facility used**.** At some centers, there was no technical facility.

Q6. How is the Regularity of lecture conducted/ relayed at the ODL study center?



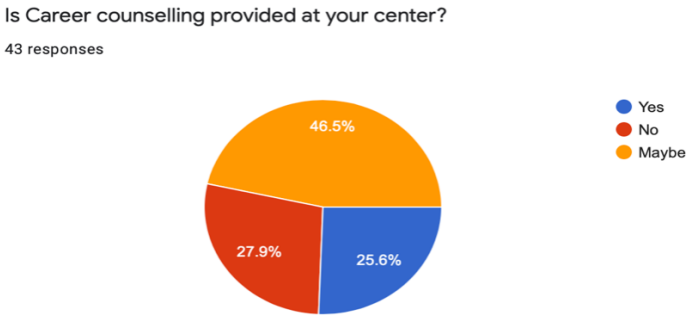
Interpretation: Respondents mentioned lectures to be mostly regular, followed by somewhat regular at certain centers. Few centers relayed/ conducted lectures as Very regular.

Q7. Effectiveness of ODL course syllabus as per latest Industry requirements



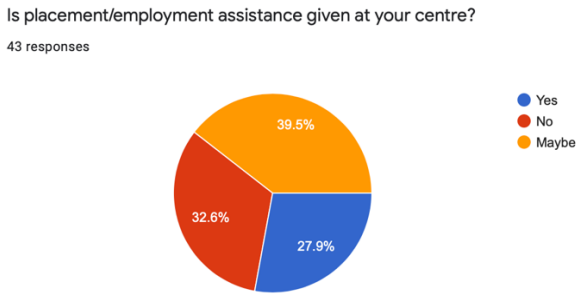
Interpretation: Syllabus was mostly updated, followed by somewhat updated syllabus. Rarely updated at a few centers.

Q8. Is Career counselling provided at your center?



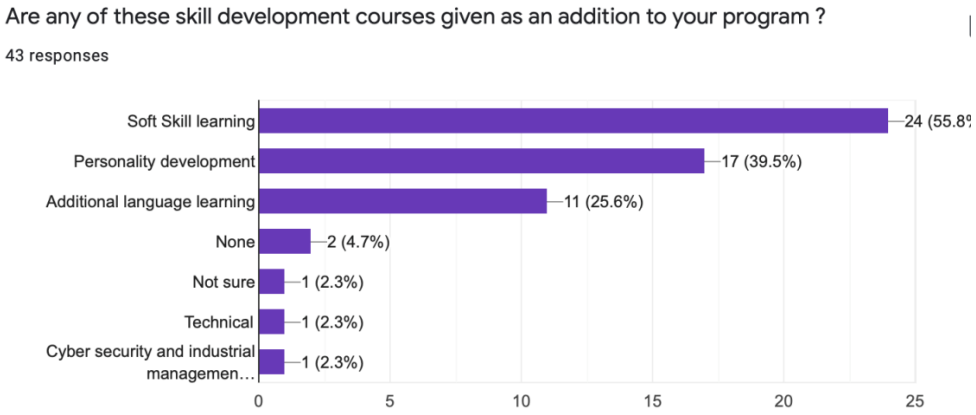
Interpretation: Most respondents were not sure of the facility. Respondents equally responded to No counselling facility at some centers and some centers gave such facility.

Q9. Is Placement/ Employment assistance given at your ODL study center?



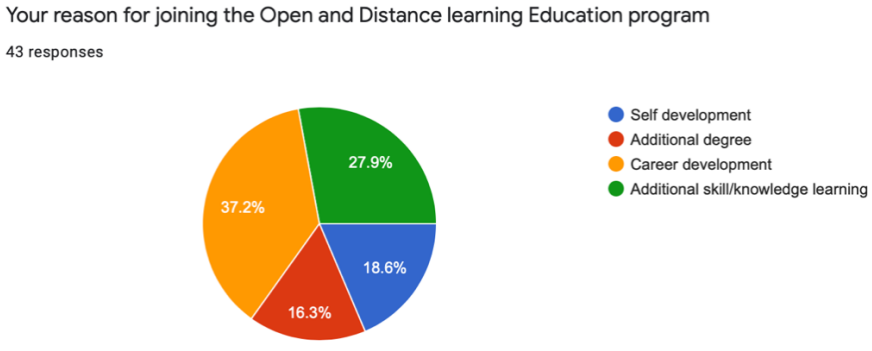
Interpretation: Respondents were not sure if center had Placement facility. Few centers provided the facility and a few centers, no placement assistance was there.

Q 10.Are any of the additional Skill development modules given with the ODL course



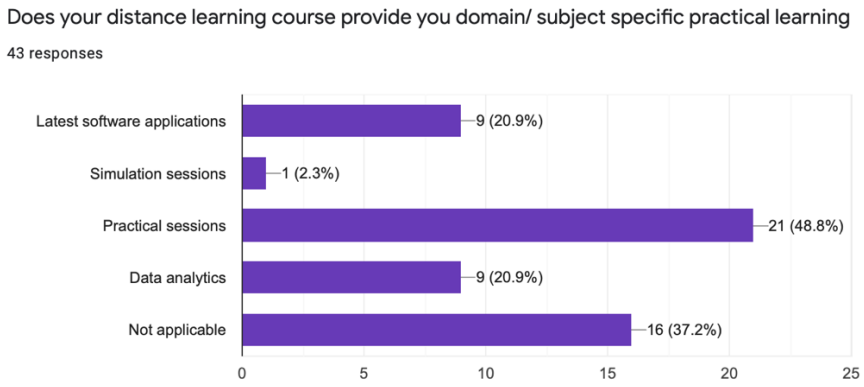
Interpretation: Soft Skills development courses was opted by most respondents, followed by Personality development and Additional language learning courses. Technical skillscourses , Cyber security and Industrial management were opted by few respondents.

Q 11. What were the reasons of joining an ODL program?



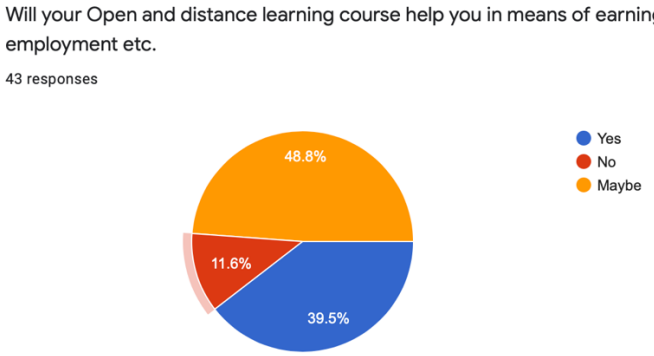
Interpretation: Respondents expressed for Career development as main reason for joining ODL course, followed by Additional knowledge / skill learning and Additional degree.

Q12. Does your ODL course provides subject specific practical learning?



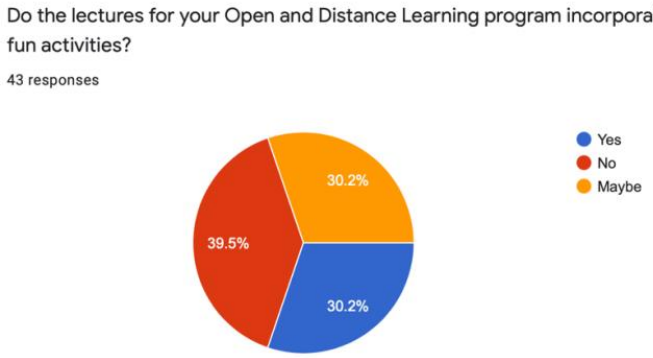
Interpretation: Latest software applications were provided at in practical learning, Simulation sessions were less, and Practical sessions were conducted and no practical sessions at certain centers.

Q 13. Will ODL course help in getting a job/ employment?



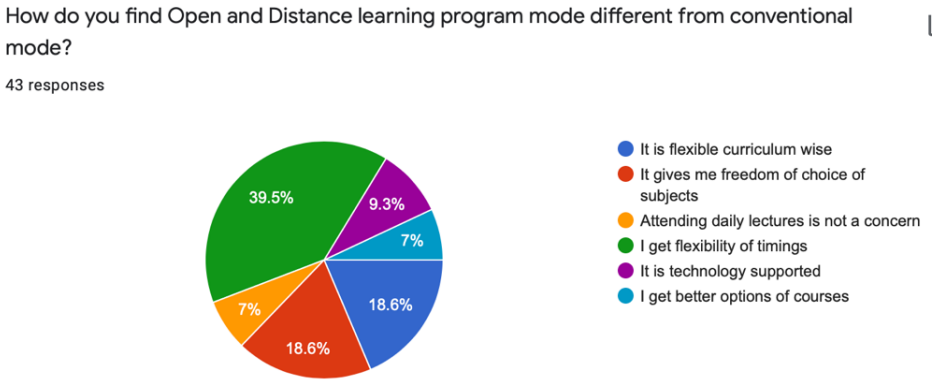
Interpretation: Respondents were not sure of the course help in getting, followed by some who indicated ODL course help in employment. Few did not opt for course help.

Q 14. Are the lectures ODL program interactive and incorporate fun activities?



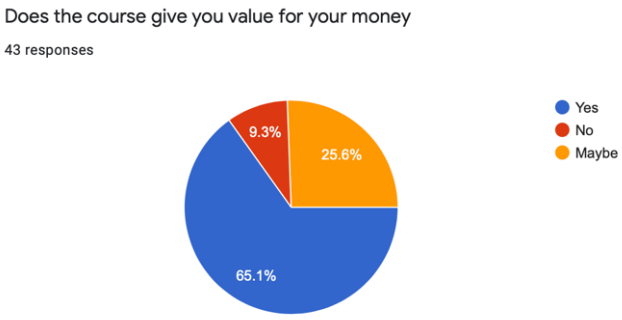
Interpretation: Major respondents expressed in negative followed by equal opinion on No interactive activities and not sure about them.

Q15. How do you find ODL program different from regular mode?



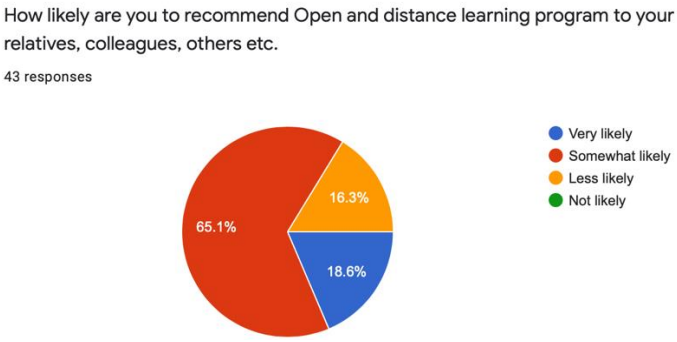
Interpretation: Flexible of timings was most preferred, followed by flexible curriculum and Freedom of choosing subjects. Technology support was preferred by few respondents followed by better options of course and attending daily lectures was not a concern.

Q16. Does the ODL course give Value for money?



Interpretation: The majority of respondents gave an affirmation to the Value for money for ODL course followed by some who were not sure. Less respondents gave negative response.

Q 17.How likely are you to recommend ODL program to others?



Interpretation: Most respondents opted as somewhat likely on recommendation of ODLcourse, followed by less likely and Very likely equally.

Q18. Any other feedback about the ODL program (by respondents)

- Should be career oriented
- Recognized degree
- Easy to study if technology support exists
- Course has only one examination, better if two could be there
- Animations help while tutoring
- Convenient way of education
- Placement / employment assistance should be there

Findings and Observation:

Based on the data analysis of Secondary and primary sources the following findings were can made : The respondents were-

- Somewhat satisfied with the Open and distance learning program
- They found the program to be economical with value for money
- **Flexibility of timings was the main reason to join open and distance learning**
- Flexibility in choice of subjects given
- Career development as the main reason for joining ODL program
- Practical sessions were imparted but a large number stated them as not applicable
- Not sure if the course will get them better employment options
- Lack of Career counselling facility
- Lack of Employment assistance for ODL program for the non-working
- Lack of interaction and fun activities in the program
- The lectures conducted/ relay was mostly regular
- Skill development additional modules were given in certain cases

Gaps and Challenges observed in the ODL program:

- Providing Employment opportunities as the main objective to the students is partially being fulfilled

- No discussions on the problem solving may create dissatisfaction gradually combating the objective of ODL program and further enrollments
- Technology support is partially utilized
- Lack of faculty support and no interactive activities observed in ODL programs

Recommendations:

Based on the analysis of Secondary and Primary data and with reference to the Elements and Skills of the Fourth Industrial Revolution, the following recommendations can be made benefitting all stake holders of the ODL program, enhancing student satisfaction.

- Blended learning as a complementing combination of online and offline learning.
- Should include regular interpersonal interactions with peers and faculty
- Can include creative combinations of individualised and group, online and in-person learning.
- Aligning online higher education and campus development together with best of one-to-one and small group interaction, most students will need more than online alone.
- Education as a service (EaaS): To meet students' needs more effectively and delivering educational service in the quickest, most efficient and economic form.
- Internationally linked programs under affiliation with Central and State Universities should be encouraged for further career opportunities especially for the ODL programs.
- Enhancing Speed for shortening the Innovation cycles
- Fundamentals functions additions in ODL format- Teaching, Research, Service
- Student satisfaction will be achieved more increasing the total enrolment by including problem solving sessions.

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The Human Dimensions of Industry 4.0

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ABSTRACT

The contemporary organizations in the twenty first century have become a hub for cross cultural activities. Workforce diversity is an assortment of people descending from various cultures and conditions, all working together in harmony to achieve the same organizational goals. This paper aims at exploring workforce diversity and its impact on productivity. The paper with the help of an employee survey emphasizes that communication and effective teamwork leads to increase in productivity.

Keywords: Human Dimensions, Workforce Diversity, Productivity, Organizational Communication, Inter-culturality, Cultural Differences, Millennial

INTRODUCTION

Human Dimensions can be represented by workforce diversity and its inter-culturality. It is a heterogeneous assortment of people descending from various cultures and conditions, all vibing and working together in harmony to achieve the same organizational goals. Here, diversity shows that the workforce of any organization must comprise of employees having varying demographics like age, gender, ethnicity, religion, race, geographical locations culture and language; or simply, lifestyles.

No two human beings can be considered similar; mentally, or physically, Workforce diversity aims at bringing divergent people together, who converge at the same point; the point being organizational goals and objectives. This draws and attracts calibre from other disciplines, and creates its own unparalleled unique field. It is influenced by a number of disciplines such as psychology, engineering, sociology, behaviorism and economics. Also, professional qualifications and the behavioral attitude that comes along with it, have a great impact on the workplace dynamics.

In the current global economy, there exists competition at every stage. Every individual, organisation or even a country as a whole, is highly interdependent on each other. For instance, a Sri Lankan might use a phone designed at United States, with components made in Mexico and, assembled and ware-housed at India. For any organization to thrive as a part of the global economy, they have to hire a quality, diverse workforce; as for any organisation, human resource is an asset of the highest order while will drive them towards excellence (Ankita Saxena, 2013).

Millennials are more drawn towards real-time feedback, socially engaging experiences and access to handy mobile phones. Being born in the digital era, they are well-versed with technology; they

are constantly searching for personal fulfillment, rather than just doing a usual 9-5 job. Millennials seek more than the industry is ready to offer. And if they are to be satisfied and retained, there needs to be a change in work environment.

LITERATURE SURVEY

For years, researchers have been studying workforce diversity in various organizations at various levels. With every new study or survey, new developments arise which play a vital role in the implementation and maintaining of a diversified divergent workforce. Kanu (2008) surveyed that the organisation, Goldman Sachs has stretched its discussion from domestic to international level with additional 30,000 employees descending from about 160 countries.

Jakob Lauring believes that workforce diversity is a necessity for organizational growth as well as for the economic development of any country (Jakob Lauring, 2009). He also says that diversity can be in the form of qualifications, skills and knowledge, and that sharing of knowledge acts as an important tool for any organization to grow from within and excel.

Radha Mohan states that it is amazing to have a culturally competent workforce but managing it can be equally challenging as building up the workforce (Radha Mohan Chebolu, 2007). Sharbari Saha and co-authors agree with this and further say that an organization is not competitive enough in the global market if it does not possess a diversified workforce (Sharbari Saha, Dewpha Mukherjee Patra, 2008). Kulin Patel and authors focus on diverse workforce planning when mergers and acquisitions take place. They say that a merger is like a marriage in which employees from both companies must be adaptable and show compatibility (Kulin Patel and Anuradha Sriram, 2010).

Marie and co-authors believe that there exists both positive as well as negative impact of workforce diversity on the company; positive impacts such as rise in innovation and creativity and negative impacts such as conflicts and workforce politics (Marie-Élène Roberge , Rolf van Dick, 2010). A study conducted by Ferraro, Gupta and Jandit concentrates on the fact that a diverse workforce consistently increases workplace productivity (Ferraro, 2001; Gupta, 2008; Jandit, 2003). Daniel V. trusts that having a diverse workforce with no conflicts is one of the greatest challenges in the business scenario (Daniel Vloeberghs", 2005). He further says that diversity in an organisation stands for equality.

WORKFORCE DIVERSIFICATION IN ORGNISATIONS

The business landscape is an ever-changing platform with new upcoming business models, new business plans, new competitions and new technologies. It has become of utmost importance to keep up with this, by constantly thinking on your feet, discovering unconventionally thinking mechanisms and having the courage to try out never-tested-before techniques or solutions.

This can all be summed up with: Having the best of both worlds. Workplace diversity helps in maintaining, rather, increasing performance by embracing and encompassing behaviour and

ideologies from every culture or background rather than a rigid demographic based business scenario. This helps in boosting workplace morale along with increasing productivity. By doing this, employees learn from fellow employees reducing the interpersonal tensions and a better, happy work environment; and also leading to less shelling out of money on trainings. A diverse assembly of skills, knowledge and experiences make an organization competent enough on a global level.

Diverse, multicultural teamwork provides a platform to identify strengths of varied team members, recognize their talent and combining various perspectives. It leads to development of great productive working relationships. It also provides a medium in which members can coach, learn and mentor amongst each other; all while working on the same project. This widens the employees' horizons and provides them with invaluable experience. Also, being bilingual and harnessing that talent provides the employees and the organization with a competitive edge.

For example, The Indian Premier League (IPL), international cricket players from various countries come, practice together from overseas and give their best performance as a team. This can only be possible when the players respect each other's cultural heritage as well as cultural differences; moreover they are willing to incorporate the best techniques form across the globe into their sportsmanship, to achieve a single task, winning the league.

Solving problems in teams, facilitates teamwork, leads to identification of strengths of various team members and recognition of talent, shows initiative and independence in solving and identifying problems. Analytical and Critical thinking skills stand as a framework of any decision making strategy. They can also be achieved by integrating lateral thinking approaches to problem solving mechanism to make concise judgements. For example, the usage of mathematics for financial management and budgeting, using statistical graphs for analysis of big data and performing tests based on assumptions require analytical thinking. Further, the use of inductive, investigative and deductive reasoning is highly beneficial in formulating solutions. By encompassing all of the above, leads to increase in the productivity of an organization.

On conducting a survey with 125 employees at India, working at various organizations, I have discovered that 63.2% people would agree to help a complete stranger at a workplace, irrespective of their origins. 89.5% people are willing to interact with new work-mates who completely differ from them. Only, 21.1% people prefer to hang with people from their same region over people from other regions. And 73.7% people would whole-heartedly participate and initiate inter-cultural work events.

CONCLUSION

The contemporary organizations in the twenty first century need to inculcate cross cultural activities and behaviour; taking into account the Millennial needs. Diversification with a perfect blend of all cultures is an important aspect for any organization to attain excellence and equality.

With the above statistics and generation woke-ness in mind, I would like to propose the developments of a *Zaeden Approach* should take place. The Zaeden Approach will serve as an

out-of-the box approach for the Millennials which is practical and implementable with a help of a range of strategies is absolutely necessary for the efficient working of any organization, such as:

i. Encouraging Employee participation in all activities with respect to all cultures.
ii. Boosting the use of common tongue or language.
iii. Having complete transparency and open communication between the employers and employees.
iv. Having efficient induction programs.
v. Providing the employees with a safe environment.
vi. Being open to changes and having high adaptability.
vii. More informal sessions where one can openly talk without hierarchical pressure.

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Going Wireless in India..Consumer Behaviour in an "Interactive World" - India Snapshot

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Abstract

We are today a connected world. This paper studies the global internet penetration as also the India internet penetration. The use of Social media platforms by consumers has grown by leaps and bounds greatly contributing to our concept of a connected world. The mobile phone- especially the smartphone as a device is in use for several purposes and has become very close to the consumer, it is a personal owned item. In recent years, the usage of apps has multiplied. This research paper seeks to understand consumer behavior in an interactive world- hrs being spent on a daily basis by consumers on the mobile phone which then is re- defining social behaviour. Through this research study we get an understanding of Indian consumer behaviour with respect to the social platforms being commonly used, the apps being downloaded, the usage of dual sims and therefore different numbers for different purposes.

More than 10 apps are being downloaded by a consumer irrespective of age group which is related to a willingness and a mindset to explore technology.

Statistical Modelling has been done and taken through four iterative processes and models to get an acceptable model.

Keywords- internet users, social media platforms, apps in various categories, dual sim usage, reasons-installing and uninstalling an app.

Introduction

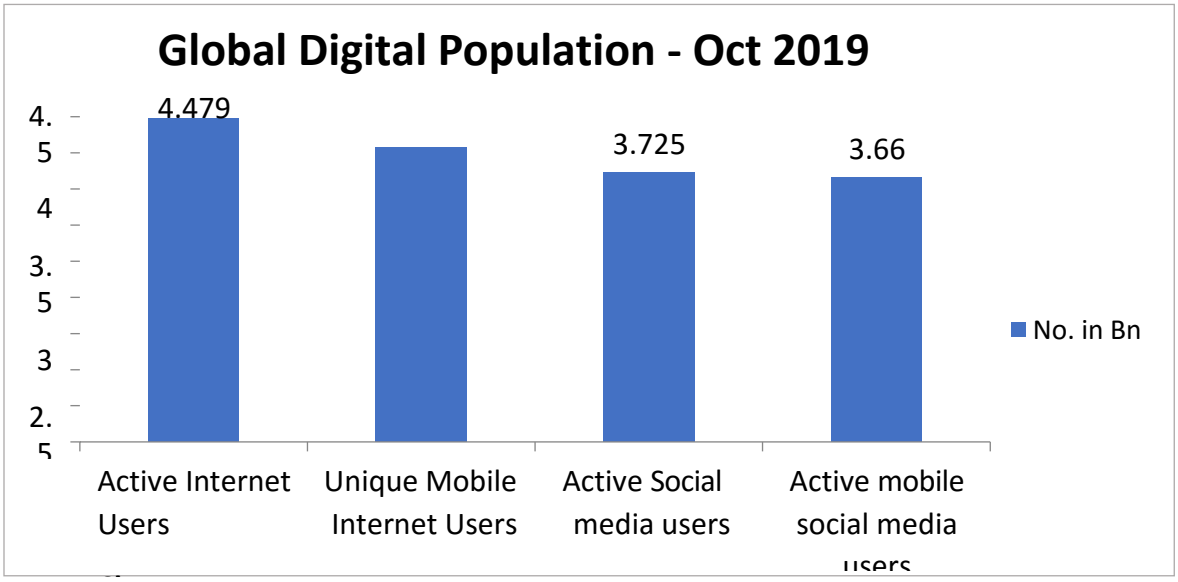
When I was in college in the '70s, there was nothing like the internet. Today, we cannot imagine the world without the internet. We all have come to believe that all research should commence on the internet through a "Google search." It is our first step for finding information on any subject. As the years go by, we all believe that we are all connected, which we are! We are all so connected and yet there is a loss of the personal touch….This research study provides a snapshot of the consumer behaviour in India in a connected world, how habits are changing, what the consumer is leaning towards. The initial section of the paper provides the Macro Global and the Macro India scenario on internet users and the trends that are becoming pre-dominant.

Global Scenario

The internet penetration across counties is tremendous. It has grown by leaps and bounds over the last decade. North America and North Europe have a 95% internet penetration rate amongst the population. Globally, there are 4.48 billion active

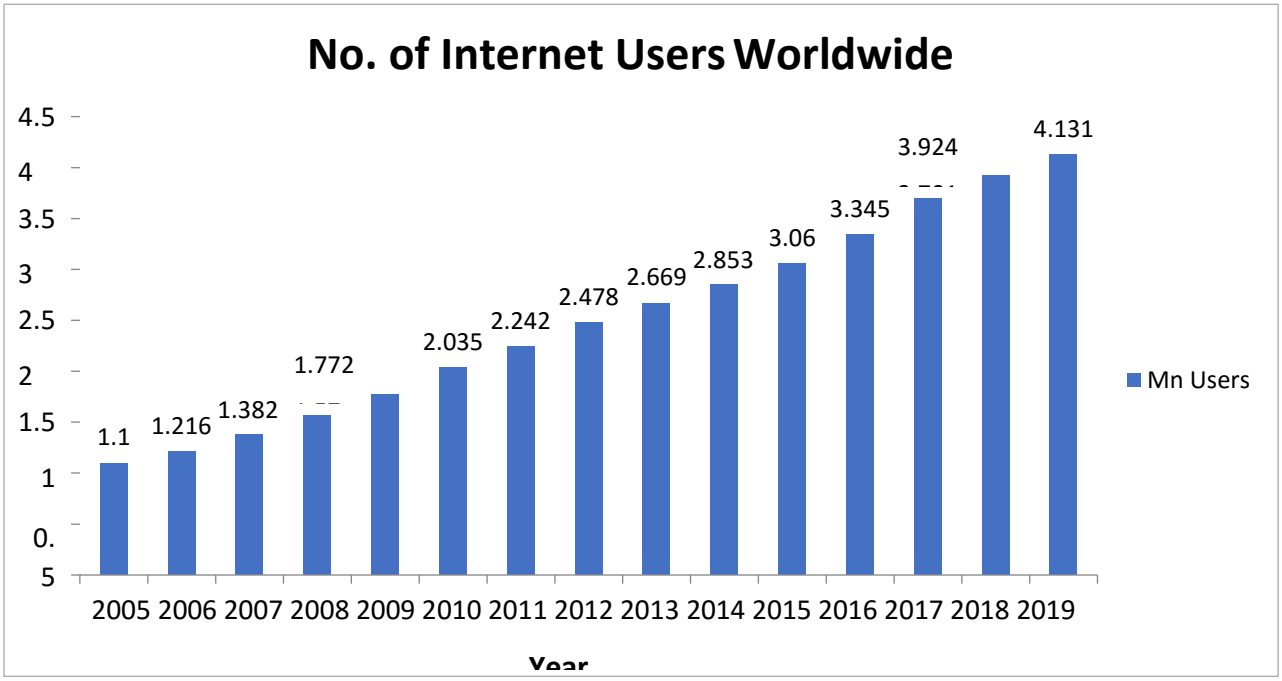
internet users as of Oct 2019. This is data from the statista website.

As defined in the Statista classification- the number of internet users are classified into: Active Internet users, Unique Mobile Internet Users, Active Social media users, Active mobile social media users. As seen in the data, globally 90% of internet users are accessing the internet via their mobile phones. The graph illustrates the numbers and the linkages. The smartphone introduction has hastened the use of the internet as also social media usage. It has become an active and live medium of communication. 98% social media users access the platform using the mobile.



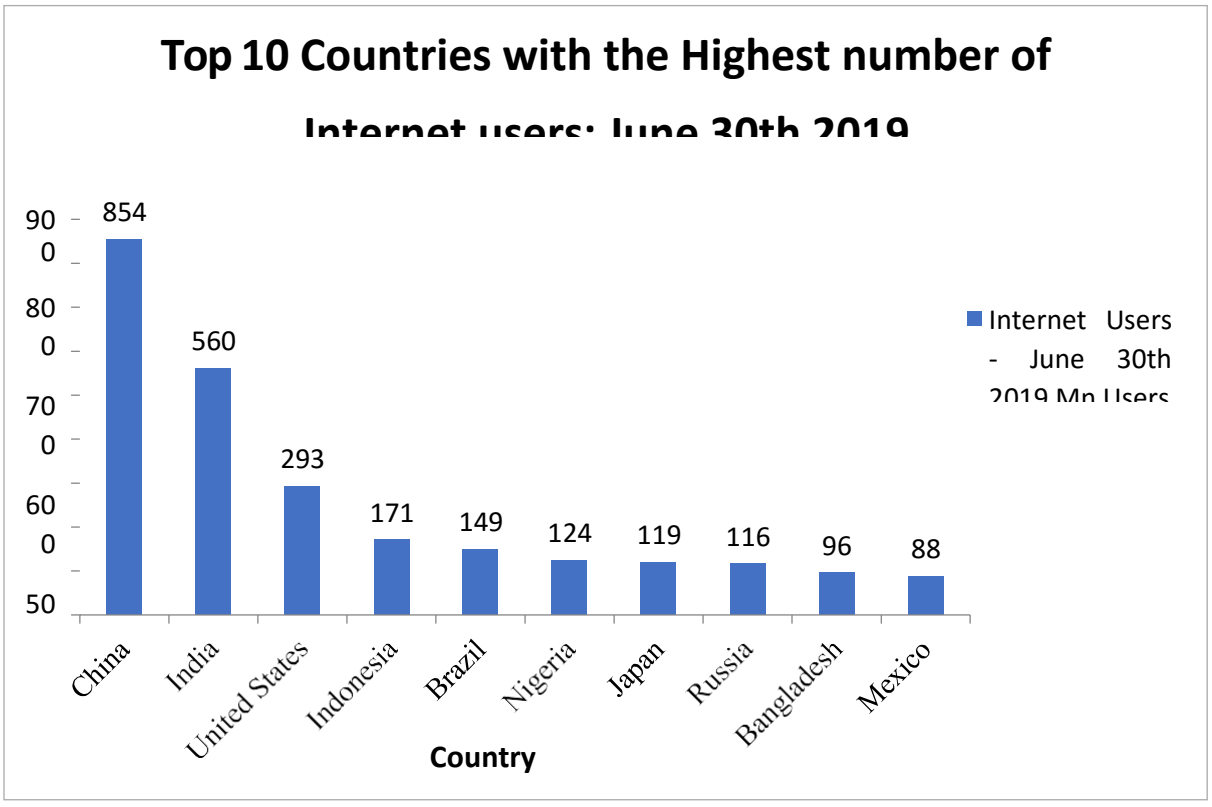
Source: Statista

While looking at the data between 2005 and 2019, the worldwide active internet users have grown from a base of 1.1 billion in 2005 to 4.1 billion in 2019.



Source: Statista

The top 10 countries for internet penetration are:



Source: Internet worldwide stats. https:www.internetworldwidestats.com

The top 3 countries in the highest number of internet users are: China, India and the United States.

And as per statista, the 5 leading social media networks worldwide in Oct 2019 are: Facebook: 2.4 bn, Youtube: 2.0 bn, Whatsapp: 1.6 bn, Facebk messenger: 1.3 bn,
Wechat: 1.13 bn, Instagram: 1 bn.

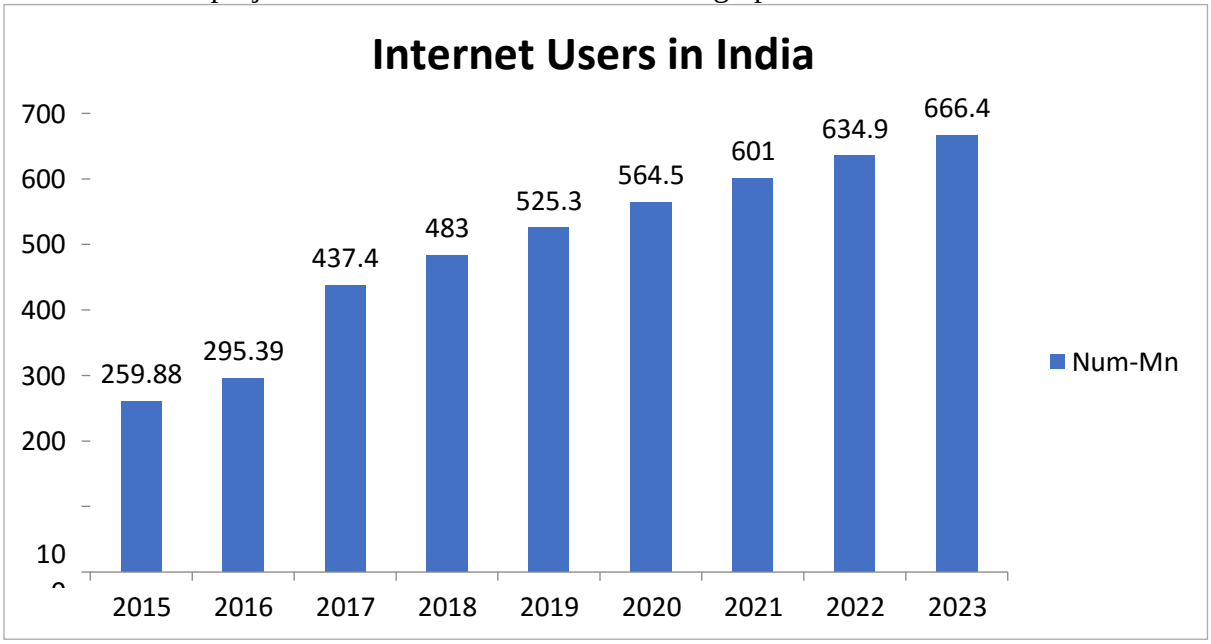
These are usually available in multiple languages and enable users to connect with family, friends or people they connect with on the social medium through invitations.

India Scenario on Internet Users, Social Networks Interaction and Usage of Apps.

The internet users in India have grown rapidly between 2015 to 2019. While in 2015 the number of internet users was approx. 260 mn , in 2017 the number grew to 437.4 mn , a growth of 48% over the previous year. In 2018 the number of internet users grew to 483 mn a growth of 10% over the previous year. It is estimated that the number has exceeded 500 mn in 2019. This is the projection given in the Statista report which further estimates 666mn by the year 2023 where the projections are based on a growth between 5-7% per year.

As seen in the country wise numbers **India already has the second largest number of internet users in the world.**

The actuals and projection numbers are reflected in the graph from Statista data available.



Source: Statista : 2018-2023 are forecasts

While the above are estimates given by Statista, market research agency Kantar IMRB has estimated stronger numbers projecting India's internet users to reach 627 million in 2019, driven by rapid internet growth in rural areas. These estimates are also believable because Reliance Jio made rapid inroads in smaller towns covering Rural India. The salient comments in the newspaper report indicate that increased availability of bandwidth, competitive/cheap data plans and increased awareness driven by the government programs have driven rural use of the internet resulting in 25% penetration in rural India in 2018

The mobile phone is seen as a necessity by all classes of consumers in urban India and its usage has spread to rural India too.

The news reports on the overall telecom market in India in the last two years indicate a lot of turmoil. There has been strong competitive play amongst the leading players Bharti Airtel, Vodafone-Idea with the entry of Reliance Jio.

As per news reports, in March 2019, India's overall mobile user base dropped from 1180 mn to 1160mn. Two major carriers- Bharti Airtel and Vodafone-Idea subscriber base reduced considerably. Analysts believe that both these players were scrubbing and have been removing the inactive base of subscribers from their customer base. Reliance Jio on the other hand grew its subscriber base to exceed 350mn as was indicated to the author by a senior person from Reliance Jio in a meeting with the author in Oct 2019.

Reliance Jio considers itself as a company in the business of Digital Services providing 4 G connections. The company has a future focus on 5G. The growth push from Jio focussed significantly on Distribution in both urban and rural India.

The high growth of mobile phone usage and India becoming the second largest country in number of internet users, is attributed to India having a young population, the growing, aspirational middle class in India and bringing in first time users in rural India.

The aspirational aspect of the middle class plays a large role. A large number of internet users in India are mobile phone internet users and smartphone usage in our country is significant.

The statista estimate for smartphone users is 374mn in 2019.

Social Network Penetration in India

The penetration of social network is very robust. Most social media platforms are being accessed through mobile as seen in the table reproduced from the sannams4 website.

Table 1.

Social Networking Site	Monthly Visits	Mobile Traffic Share	Desktop Traffic share
Facebook	1.6 Billion	99.25%	0.75%
YouTube	1.2 Billion	59.96%	40.04%
Quora	215.8 Million	98.89%	1.11%
Instagram	191.1 Million	99.02%	0.98%
Twitter	125.2 Million	97.81%	2.19%
Pinterest	49.8 Million	98.40%	1.60%
LinkedIn	29.9 Million	90.97%	9.03%

As per sannams4.com, Indians now download more apps –**12.3 billion** in 2018 – than residents of any other country except China. The average Indian social media user spends **17 hours** on the platforms each week, more than social media users in China and the United States.

Our research at SDA Bocconi Asia Center is showing approximately 28 hrs per week based on our sample as seen later in this paper.

Therefore Indian internet users are involved and access social media. Facebook is the most popular social networking site in the country. There are about 270 million Facebook users in India as 2019, placing India as the country with the largest Facebook user base in the world.

Research Study

We at SDA Bocconi Asia Center- Center of Excellence-India Lab, undertook a consumer research study with the following objectives:

Objectives

1. To study the mobile phone behavioural usage patterns and preferences of social media among consumers in India
2. To gain an understanding of how consumers behave across mobile apps, sites and services they use- on their mobile phones
3. To discover insights and understand what drives consumers to install, engage, and uninstall apps across categories-on their mobile phones

Research Methodology

1. Secondary research undertaken on the internet of data sources: Statista, Sannmar 4s, ET- press reports to understand current Macro Global trends and Macro India trends.
2. A research tool for a field study was prepared covering the above objectives and pretested.
3. The Research tool was modified and finalised after the pre-test and field team of

students were briefed.

4. The field work was a combination of Face to face interviews and online survey method where the tool was shared by field team with their respective databases.
5. Student Supervisors monitored regular progress of the field work
6. The Sampling was random, across all states in India
7. Field study undertaken in Dec 2019
8. The Data Analysis has been undertaken in Jan 2020
9. The Data was prepared for modelling in Jan 2020

Sample Details

A sample size of 1452 consumers was achieved across Most states in India.

A demographic analysis of the sample has been done on age, gender, states and professional profile.
Age: The sample covered all age groups. Age profile has been shown graphically.

Approximately 73 % of the sample is in the age group 16-35 yrs, 24% from 36-55yrs, and the balance above 55 yrs

Fig 1

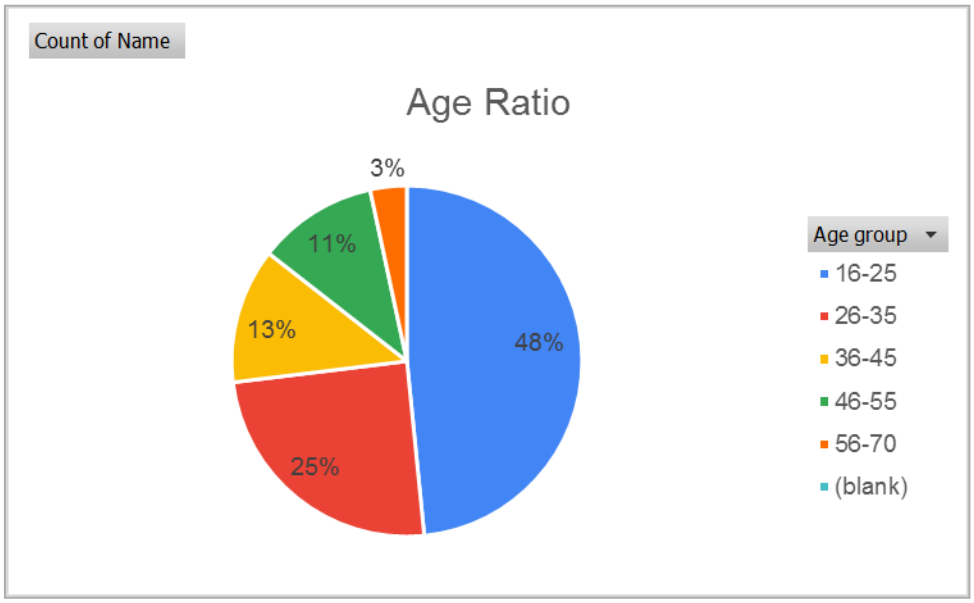
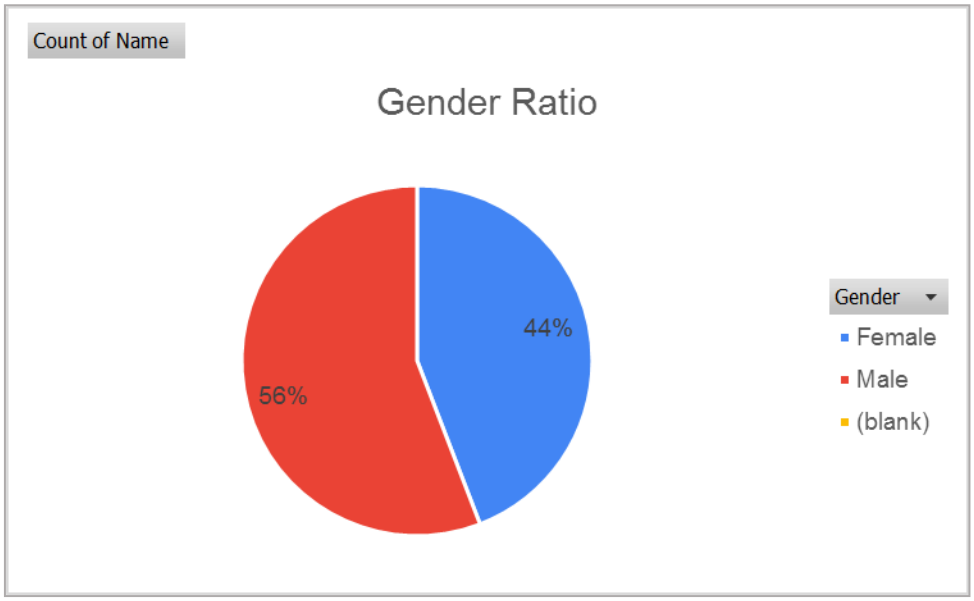


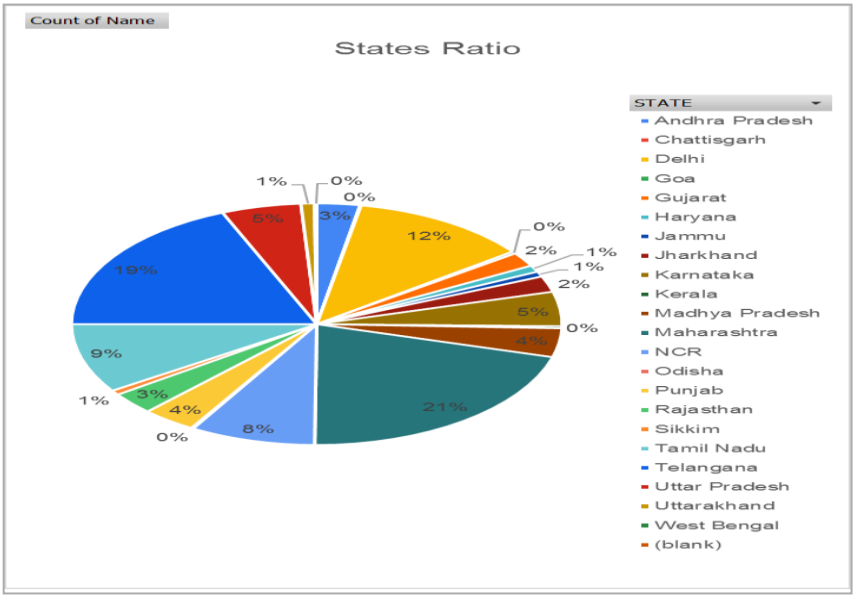
Fig 2



Gender : The gender details are: As seen-44% female and 56% male.

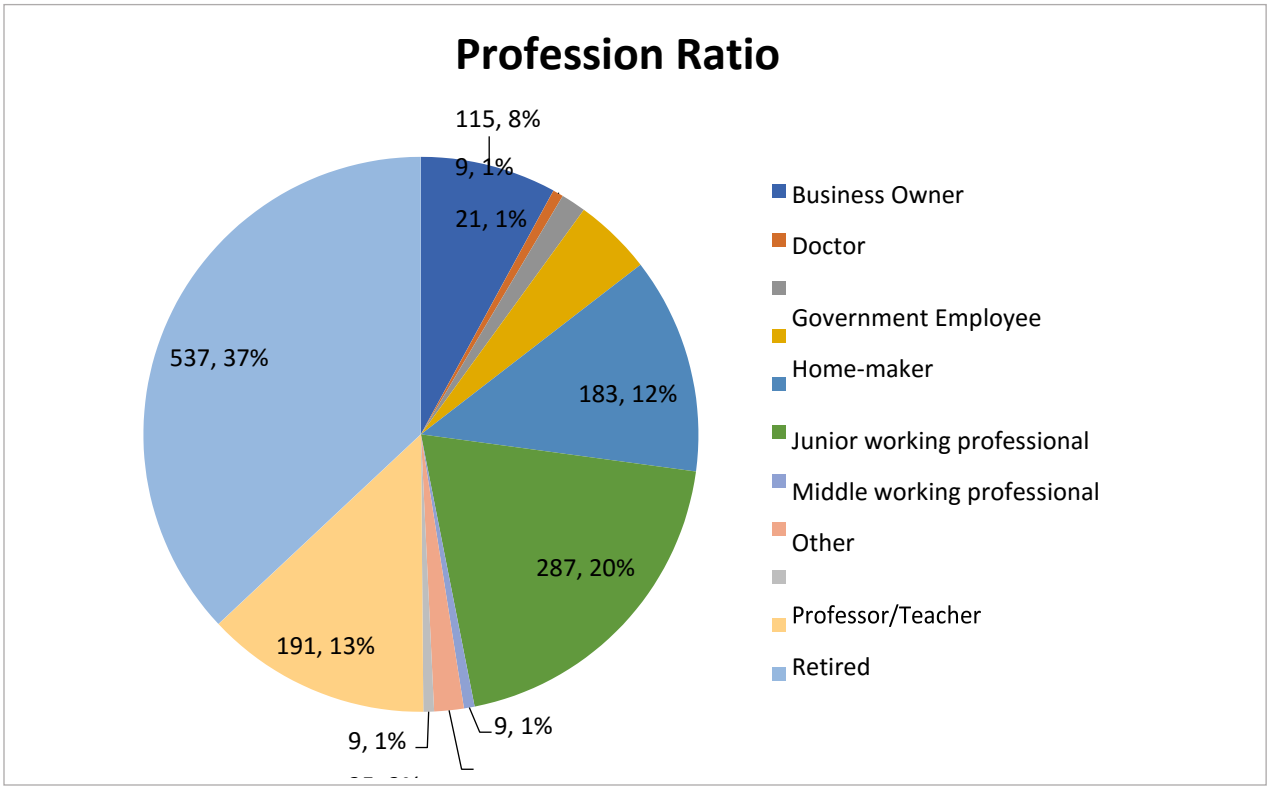
Statewise Distribution: All India Sample covering all states- urban cities and class 1 towns

Fig3



More than 20 states and union territories are represented in the sample. Professional Profile of Respondents

Fig4



It is interesting to observe that the sample if broadly classified into working professionals, students, Home makers and others, the percentage of working professionals are 57.2 %, the percentage of students are 37% and the percentage of home-makers and others are 6 %.

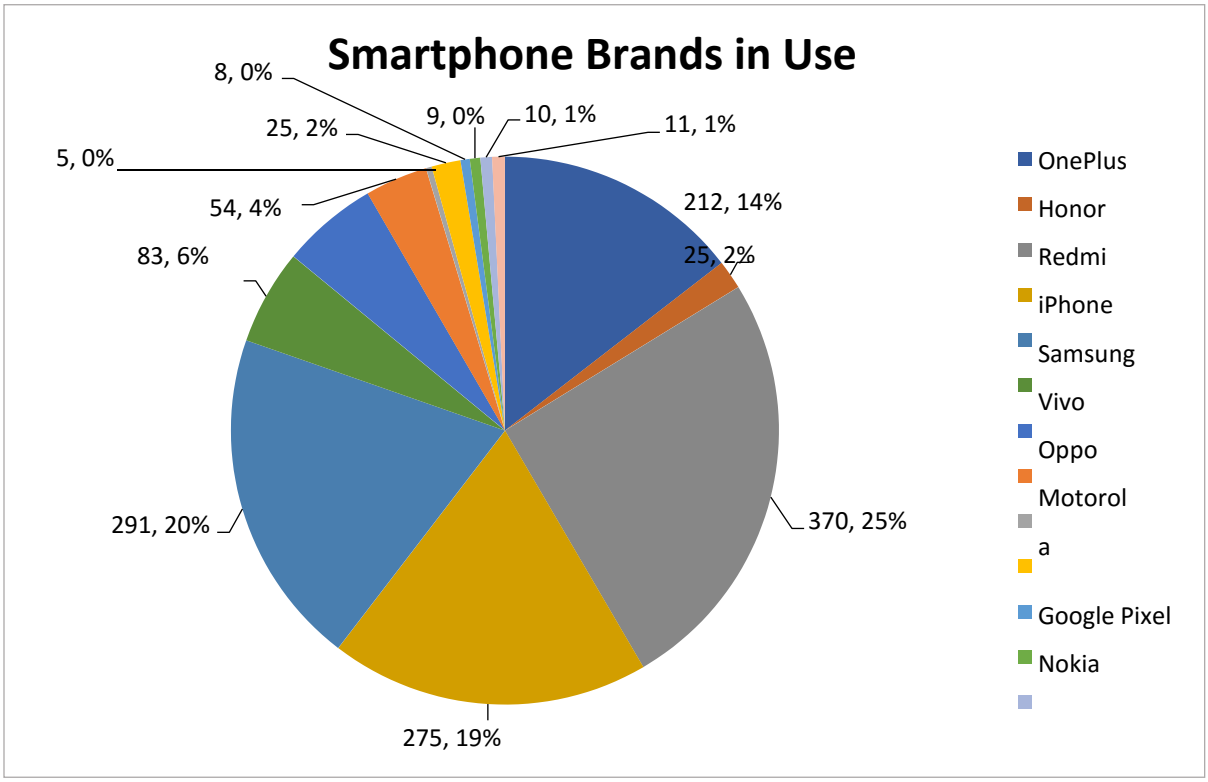
Trends in Mobile Phone Usage in India

- Very interestingly the data analysis shows that 86% of the sample use a single phone, two phone usage is 13% and 3 and more phones in use has already reached 1%. Individuals are using different phones for different purposes.
- With reference to connections, 56% have one connection, however 38% have two connections and 6 % have 3 or more connections. Two and more connections are becoming common.
- Therefore, dual sim phones are being used by a growing consumer base.
- There is a possibility dual sim phones provide the purpose of differentiating between personal and business/professional needs alternatively a number for calls and another number for data/ browsing the internet for various purposes
- When there are dual sims, almost 50% use the same telecom service provider. It is important to note that 50% use a different service provider.
- For internet usage the primary selection is Reliance Jio at 40%, followed by Bharti-Airtel at 35%, Vodafone-Idea at 20%. The other players each contribute a small %.
- For the sample studied in cities/towns of urban India , the smart phone usage

is 99% indicating a very significant penetration of smart phones. Feature phone usage is now very limited.

- There are several brands of smartphones which are doing well. The key ones : Redmi(sub-brand of Xiaomi) Samsung, iPhone, OnePlus.
- The graphical representation of phone brands used by the sample are:

Fig 5

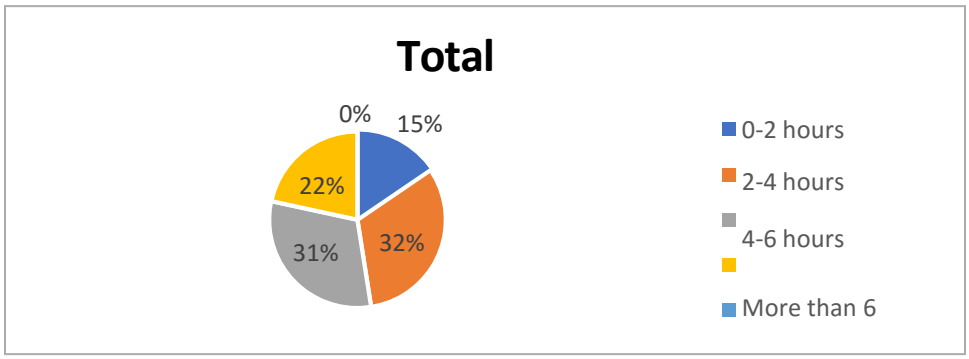


- With respect to Feature phones, the brands used are: Samsung, Nokia and Reliance Jio

Trends in Mobile/smartphone usage

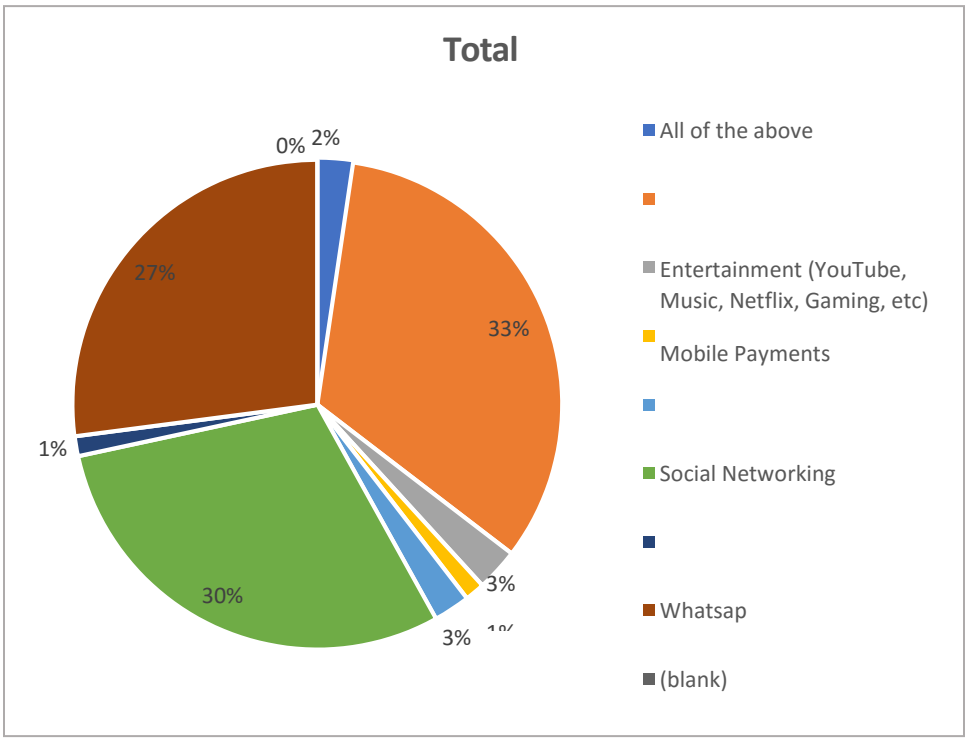
- While 2% of the sample have spent upto Rs 5000 on their phone, 15% have spent from Rs 5000-10000 , 43% have spent between 10-20,000. The balance 40% have spent above 20,000 on their phone. Therefore, the phone is a status symbol and individuals are willing to spend a substantial amount on their phones
- Consumers spend a lot of their time on their cell phone on a daily basis. The pie chart shows the details. So face to face interactions are being substituted with face to phone screen interactions.

Fig 6 Time spent on the mobile



- The phones are used for calling 33%, for social networking-30%, and Whatsapp-27%.
- Whatsapp has taken the place of texting. The next in order are entertainment, mobile payments and texting.

Fig 7 For what is the mobile used the most



Trends in downloading apps

The research data and the data from Sannam s4, indicate that users in India download a large number of apps. Possibly we are more curious. May be individuals wish to learn.

- 66% have downloaded upto 15 apps

- 22% have downloaded from 15 to 25 apps
- 12% have downloaded more than 25 apps
- It is interesting to note that on an average,in all age groups, the number of apps downloaded, exceeding 10 and going to more than 25 and above are 40%.
- Therefore, apps get downloaded more by individuals who are early adopters and are Technology Explorers, those who like to experiment.
    - In the analysis related to downloading of apps vs profession, in the "not working" segment- 40% of the apps downloaded are in the 0-5 range, while 60% are downloading more apps exceeding 25.
    - 90% of students download more than 5 apps going upto more than 25.
    - In the working individual category, 17% download upto5 apps, while 83 % have downloaded more than 5 going upto more than 25.

Fig 8: No of apps downloaded

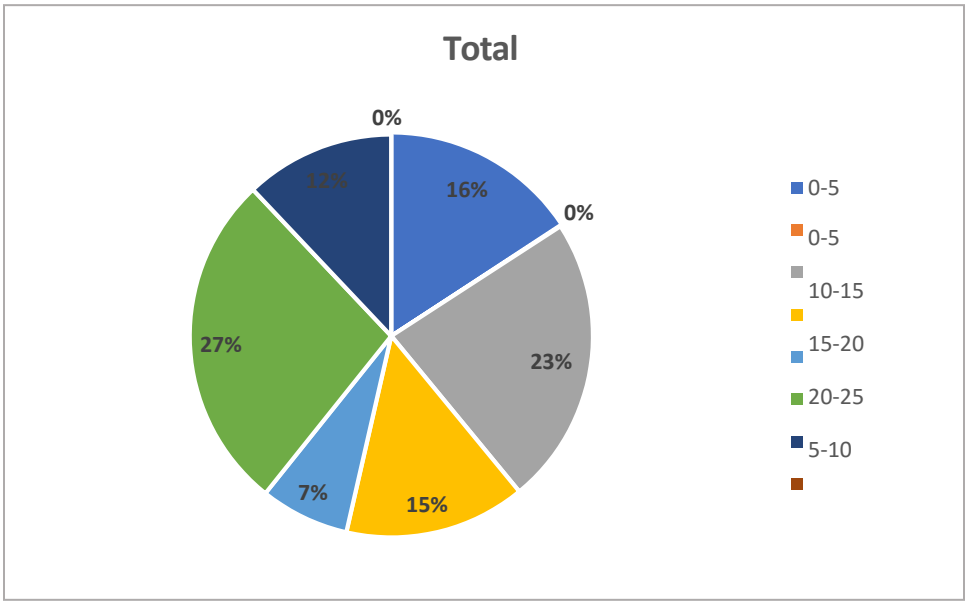
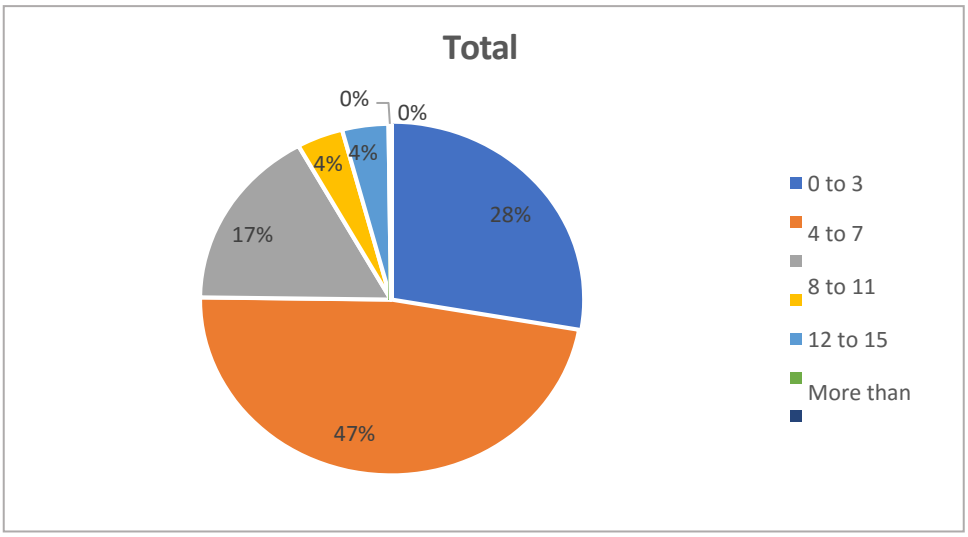


Fig 9: Number of Apps used frequently



The top 10 Ranking of the categories from which apps are downloaded are:

1. Social Networking
2. Entertainment
3. Online shopping
4. Food Delivery
5. Music
6. News
7. Gaming
8. Travel
9. Utilities
10. Health and fitness

Trends in Usage of Apps

- 75% of the sample use between 1-7 apps most frequently.
- The average number of Apps downloaded by the sample is 4. The **top 3 apps** being used in the sample are:

1. Whatsapp
2. Instagram
3. Facebook

The **top 3** categories where apps being used the most:

1. Social Networking
2. Entertainment
3. Music

Trends in the usage of apps on the mobile phone

- In the category of social networking: the 3 apps that have been named are: Instagram, Whatsapp, Facebook, also named are: Youtube, Linked In
- In the category of entertainment : the 3 apps are: Netflix, Hotstar, Amazon
- In the category of Music: the 2 apps are :Spotify, Gaana
- A large number are spending upto 2 hours a day on social media platforms and even more.
- The key reasons why people install apps are for: convenience, app benefits/utility, source of entertainment, time saving
- The reasons for uninstalling an app are several: user experience, storage issues, time consuming, high battery drainage and several others
- The sample recalls that the most number of advertisements are seen on Youtube, followed by Facebook,Instagram and Hotstar

Fig 10

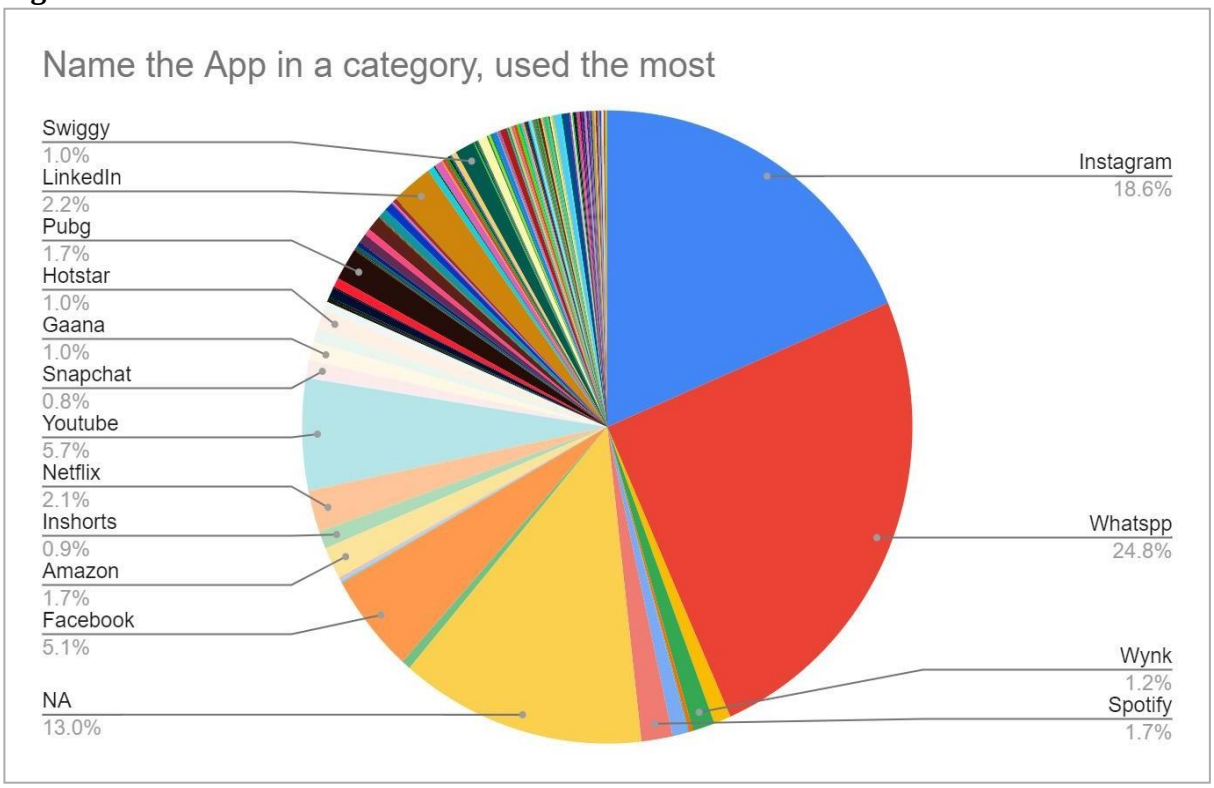


Fig 11

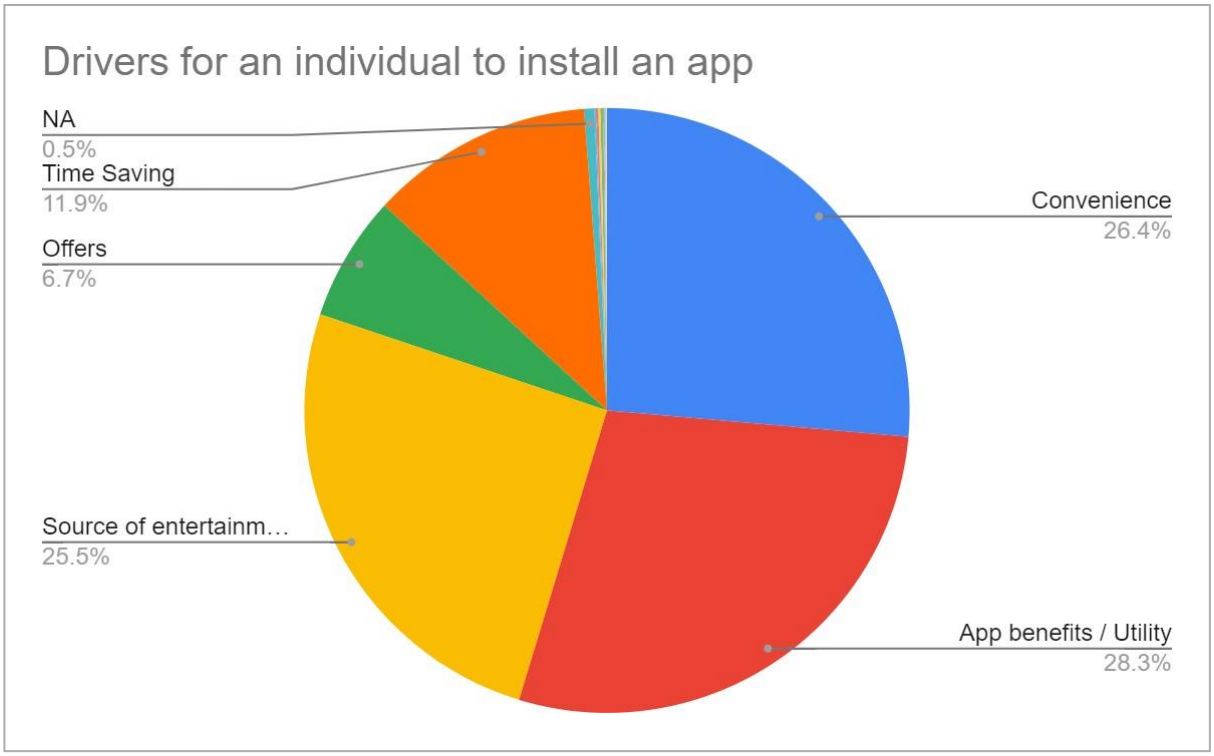

Drivers for an individual to install an app
NA
0.5%
Time Saving
11.9%
Offers
6.7%
Source of entertainm…
25.5%
Convenience
26.4%
App benefits / Utility
28.3%

Fig 12

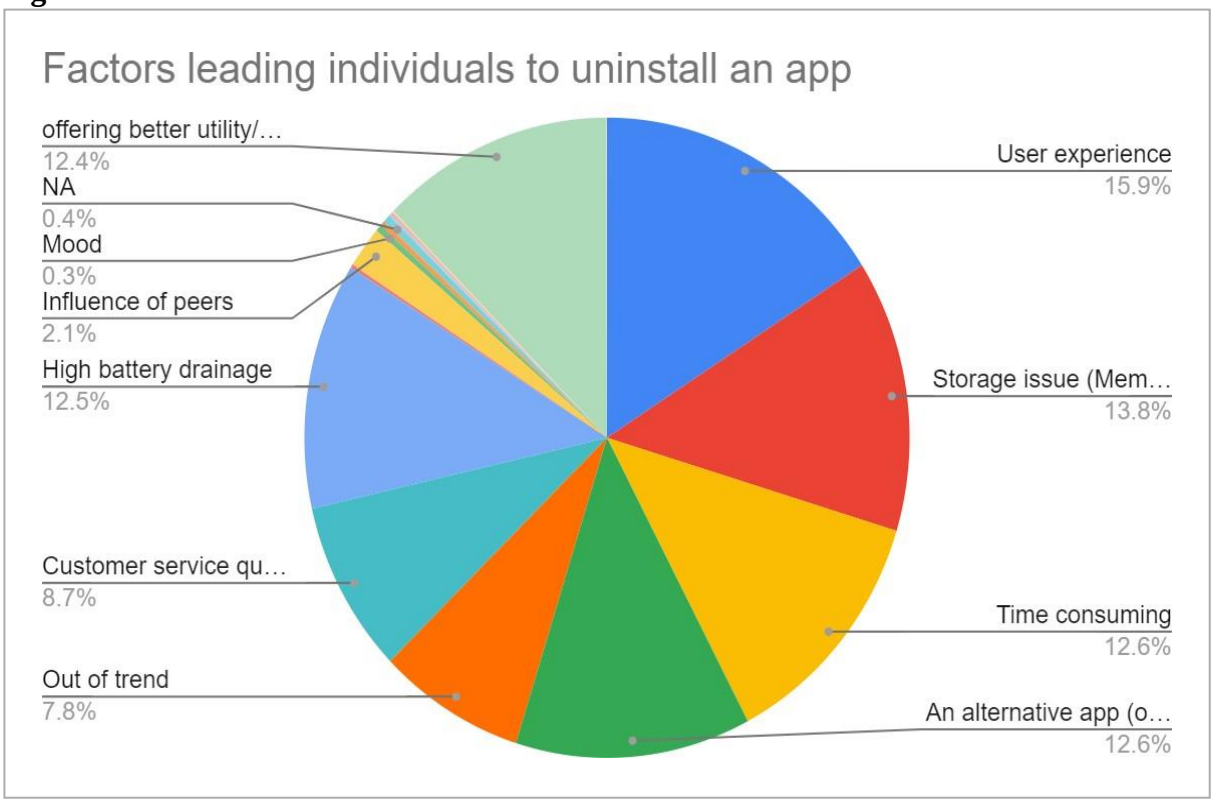
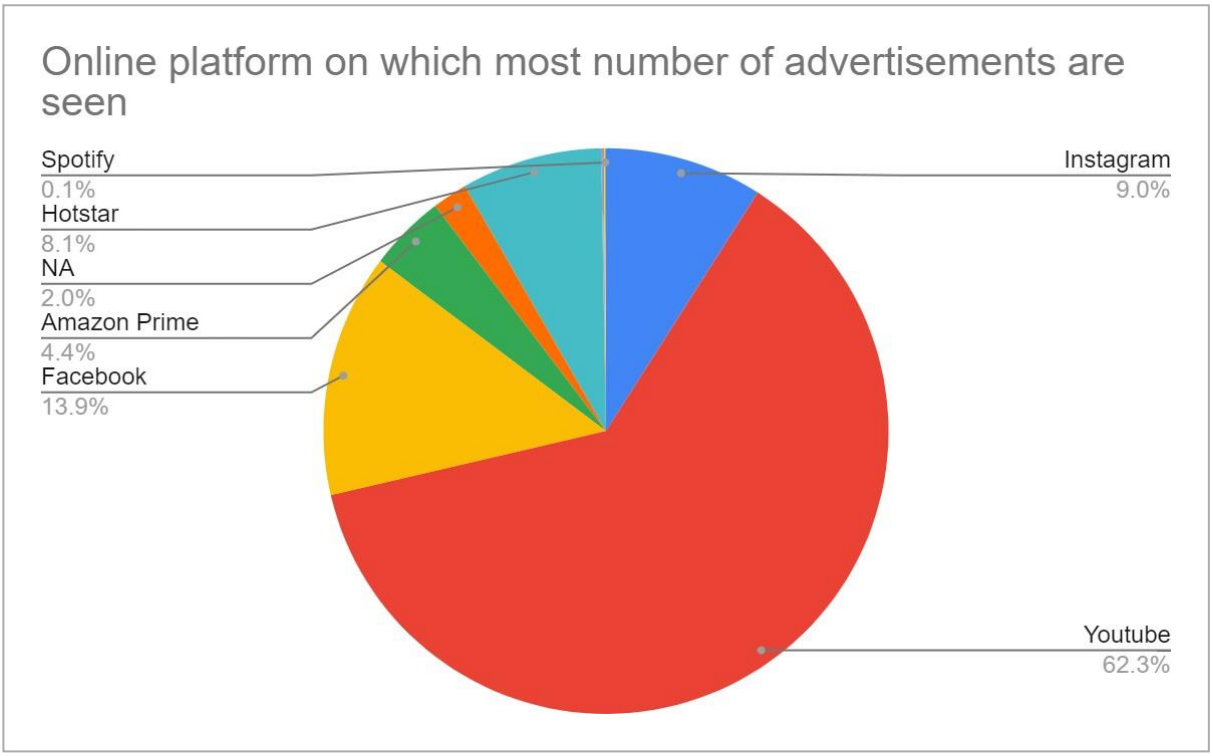

Factors leading individuals to uninstall an app
offering better utility/…
12.4%
NA
0.4%
Mood
0.3%
Influence of peers
2.1%
High battery drainage
12.5%
Customer service qu…
8.7%
Out of trend
7.8%
User experience
15.9%
Storage issue (Mem…
13.8%
Time consuming
12.6%
An alternative app (o…
12.6%

Fig 13



- Youtube followed by Facebook and then Instagram are the platforms on which most ads are seen by consumers.

Developing a model

The Regression Model Used Model 1:

Cellphone usage was regressed on age (X1), ownership of smartphone (X2), number of apps used (X3) and no. of sims (X4).

Model Summary[b]

Mode l	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.339[a]	.115	.113	1.60107	1.930

a. Predictors: (Constant), x2, x4, x3, x1
b. Dependent Variable: y

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	481.888	4	120.472	46.996	.000[b]
	Residual	3709.291	1447	2.563		
	Total	4191.179	1451			

a. Dependent Variable: y
b. Predictors: (Constant), x2, x4, x3, x1

Coefficients[a]

Model		Unstandardized Coefficients		t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	3.283	.452	7.263	.000	2.396	4.170		
	x1	-.030	.004	-8.094	.000	-.038	-.023	.898	1.114
	x3	.043	.006	7.686	.000	.032	.055	.913	1.096
	x4	.305	.086	3.537	.000	.136	.474	.962	1.039
	x2	.505	.419	1.205	.228	-.317	1.328	.983	1.018

a. Dependent Variable: y

It was seen that while the F ratio denoting the usability of the model was significant, the adjusted r^2 of the model was low at 11.3%. Further, X2 was insignificant. The model did not exhibit a high degree of multi-collinearity or autocorrelation. But Breusch Pagan test and White's test both indicated the presence of heteroscedasticity.

Model 2:

As more than 99% of the sample taken were owners of smartphones, it was felt that there was a lack of sufficient variability in the ownership of smartphone dummy variable. X2 was dropped from the model and Y was regressed on X1, X3 and X4. The results were as follows:

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
2	.338[a]	.114	.112	1.60132	1.928

a. Predictors: (Constant), x4, x3, x1
b. Dependent Variable: y

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	478.164	3	159.388	62.158	

1	Residual	3713.015	1448	2.564		.000[b]
	Total	4191.179	1451			

a. Dependent Variable: y
b. Predictors: (Constant), x4, x3, x1

Coefficients[a]

Model		Unstandardized Coefficients		t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	3.777	.190	19.928	.000	3.406	4.149		
	x1	-.031	.004	-8.206	.000	-.038	-.023	.903	1.108
	x3	.044	.006	7.794	.000	.033	.055	.918	1.090
	x4	.311	.086	3.608	.000	.142	.480	.965	1.036

a. Dependent Variable: y

It was seen that though there was a marginal improvement in the F ratio, but the adjusted r^2 was still low at 11.2%. But all the variables were significant, there was no multicollinearity problem or autocorrelation. However, the model suffered from heteroscedasticity.

Model 3:

A log model was considered to overcome the heteroscedasticity problem by regressing ln y on ln X1, ln x3 and ln X4. The log model is given below:

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.370[a]	.137	.135	.55252807987	1.927

a. Predictors: (Constant), lnx4, lnx3, lnx1
b. Dependent Variable: lny

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.914	3	23.305	76.336	.000[b]
	Residual	442.056	1448	.305		
	Total	511.970	1451			

a. Dependent Variable: lny

b. Predictors: (Constant), lnx4, lnx3, lnx1

Coefficients[a]

Model		Unstandardized Coefficients		t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.632	.180	9.070	.000	1.279	1.985		
	lnx1	-.339	.044	-7.704	.000	-.425	-.252	.891	1.122
	lnx3	.270	.027	9.881	.000	.217	.324	.908	1.102
	lnx4	.138	.043	3.216	.001	.054	.223	.960	1.042

Though the model showed all regressors to be significant, the adjusted r^2 was still low at 13.5% (but significant) and the heteroscedasticity persisted.

Model 4:

The reason for the heteroscedasticity was because of the limited data range of the regressors, especially age and the number of apps. White's test in the case of model 2 showed that the square of the residuals was significantly related to X1^2 and X3^2. As a remedial measure, the model was transformed by dividing by X1. The results were as follows:

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.692[a]	.478	.477	.06024177094	1.983

a. Predictors: (Constant), x4byx1, x3byx1, onebyx1
b. Dependent Variable: ybyx1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.819	3	1.606	442.641	.000[b]
	Residual	5.255	1448	.004		
	Total	10.074	1451			

a. Dependent Variable: ybyx1
b. Predictors: (Constant), x4byx1, x3byx1, onebyx1

Coefficients[a]

Model		Unstandardized Coefficients		t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-.030	.005	-5.476	.000	-.041	-.019		
	onebyx1	3.974	.199	19.939	.000	3.583	4.365	.490	2.042
	x3byx1	.032	.005	5.904	.000	.021	.042	.611	1.638
	x4byx1	.295	.085	3.470	.001	.128	.462	.643	1.555

a. Dependent Variable: ybyx1

This model had an adjusted r^2 of 47.7% and a higher F ratio. All the variables were significant. However, the heteroscedasticity still persisted as the data was cross sectional and measured in ranges/slabs. While more model options could have been developed, it would be time consuming and expensive. It was decided to go ahead with this model as the adjusted r^2 was higher than the earlier models.

Conclusions

There are several interesting Learnings from the Research:

1. It is the smartphone mobile device which is dominating the Indian market currently.
2. The mobile phone has become a part of an individual's persona, not just the brand owned but also the number of hours being spent on the phone using various platforms and apps. The Indian consumer seems to be very absorbed with the mobile phone.
3. The average time being spent by an individual on the phone is 3.96 hrs per day- based on the sample, which is 28 hrs per week.
4. This medium is therefore very close to the consumer, and will have to be considered in all communication and marketing strategies.
5. There is a trend of dual sims being owned and used by individuals, 44 % of the sample are using dual sims to achieve their objectives.
6. The telecom operators should understand this behaviour of individuals and accordingly prepare sales and marketing plans
7. A large number of consumers are willing to pay upward of Rs 20,000 for their phones and wish to own the best. Therefore, phone ownership is very aspirational. This fact is captured by smartphone manufacturers and reflects in the advertising /communication of various brands.
8. Since users are calling and accessing various platforms- social networking, entertainment, and music using the mobile- the mobile has become an intrinsic part of the consumers life.
9. All industry sectors must be aware of this and reach out through this medium to interact with the consumer. The type of communication would depend on the sector, the industry.
10. Key cities in India are witnessing a great amount of road traffic because of the

development – highways, flyovers, metro railways are all under development. A large portion of consumers are spending time for 2/3 hrs commuting during which they get involved with social media and use of apps.

11. In developing apps, companies need to understand whether it will benefit them or not.
12. Companies need to understand whether they need a Facebook page, and or various other social media handles to ensure presence. And service that handle regularly and systematically.
13. With widespread internet usage, it is essential for all businesses to have an e-commerce channel as consumers are veering towards doing transactions on the net.
14. The heteroscedasticity error in the model is due to cross-section data and responses being captured through bands and ranges. The regression model developed by transforming the variables can be used as rsq is approx.: 40%

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Social Entrepreneurship - Smart solution to the problems of NGOs

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INTRODUCTION

India has a long history of philanthropic philosophy embedded even in our ancient scriptures of Vedas. The NGOs formed since the colonial as well as post colonial periods are the reflection of the benevolent virtues and values in Indian society. We have around 4 million NGOs running for the welfare of society by working on the issues like alleviating poverty, tackling marginalization, enlightening about environment, achieving women empowerment, safeguarding human rights, improving educational facilities, solving various problems of rural backwards & urban slum population, etc. But when we try to assess the quality and quantity of the work done by these institutions, we come across the lacunae in the process of such evaluation. Firstly, the entire sector is mostly disorganized in respect of their registration, fulfillment of their financial needs as well as availability of steady and stable supply of effective manpower. No doubt NGOs in our country are playing an important role in the development of masses and the balanced growth of economy, but the social impact that the very number of these organizations is expected to achieve is not up to the mark. What can be the right approach towards the social work these institutions dream of accomplishing? The concept of 'Social Entrepreneurship' in which the institution engaged in the social activities tries to be independent in its financial requirements through its business can be the panacea for the problems of the NGOs.

OBJECTIVES

1. To review the history of NGOs in our country
2. To find out the main problems faced by NGOs.
3. To study the newly developed organizations called 'social enterprises' in the field of social and environmental issues.
4. To evaluate the goals achieved by social entrepreneurship
5. To find out the requirements and the ways to fulfill them in order to reap the benefits of the social entrepreneurship
6. To study how the social agencies like NGOs, through the theory of change, may undergo organizational restructuring, to adopt the new sustainable model in the form of social entrepreneurship.

KEY WORDS

NGOs, Social Entrepreneurship, Social Enterprises, Innovative ideas, Sustainability, Social change, Environmental outcome

LITERATURE REVIEW

1.The term NGO (Non Governmental Organization) was initially used by UN in 1945 for describing any non-profit, voluntary citizens' group which is organized on a local, national or international level. The transnational federations like Red Cross to the Grass-root or community based organizations independent from Government control & without profit making motives were covered under the term.

Many such NGOs played an important role in India in assisting the Government in its endeavor of trying to bring about a balanced growth of the Nation. But in bsence of the proper controlling & auditing machinery the NGO Sector in our country is largely in a disorganized form. Till early 21st Century most of them depended on foreign resources for their funding. As per the records of Ministry of Home Affairs, in year 2006 Rs.7,877 crore ($US 1.85 b) which was 90% of the total formal funding of Indian NGOs was received from foreign sources. Around 2005, Indian Government took initiative in changing this trend. But even today there is no central mechanism to recognize their total number as well as quantitative or qualitative evaluation of their activities.

2.Emergence of Social Entrepreneurship: A new breed of social leaders with the motive of bringing about a sustainable social change has emerged in the business world. Its origins can be traced to the early 1980s, starting with a business trend called cause-related marketing. In simple words it is a business trading for social purposes. Bill Drayton, a civil rights activist who had studied Gandhi's work, founded the nonprofit social enterprise Ashoka in 1980. While traveling in India, he came across innovators whose creative ideas for change were not well understood by their communities. Ashoka championed these public innovators, a term that later evolved into “social entrepreneur.” Today, Ashoka supports more than 2,000 entrepreneurial fellows in more than 60 countries as they scale their ventures.

RESEARCH METHODOLOGY

The paper is based on secondary data retrieved from URL. It largely makes use of facts and figures from the official websites of Government of India and Home Ministry. An E book is also referred to.

FINDINGS

The social entrepreneurship does not have a long history as that of NGOs. But, in the short span of their beginning they have proved themselves better over the traditional NGOs in following respects-

1. Their financial sustainability makes them independent in their pursuit of social change.
2. They are able to make broad-based, long-term impact by their innovative ideas.
3. They include the beneficiaries in the process of solution instead of giving them a passive role.

The time and energy required for fund raising activities are utilized in the actual productive and marketing processes.

CONCLUSION

Leila Janah- Social Entrepreneur who died recently at a very young age had described the challenges of being a social entrepreneur on her blog - ‘***We are fighting the battle of birthing a***

new venture, while at the same time trying to show the world that we can inject a sense of justice into the business itself, rather than merely trying to rack up profit.'

Our ode to these warriors, whose mission is bringing together the good of two different concepts(charity & business) in bringing about the growth & social change .

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ARTICULATING EARLY GENERATION Z ON YOUTUBE VIEWERSHIP

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Abstract

Digital transformation has rapidly changed the face of business practices. The popular video streaming platform "youtube" has become a very influential platform for business promotions. The viewers on youtube can avoid watching the advertisement (ads) through "skip ad" option. This makes the efforts of marketers go wasted. Present study is aimed at understanding the factors that influence the early generation Z viewership patterns towards advertisements. For this purpose, 100 responses have been collected through a structured questionnaire from the Gen Z residents of Mumbai city. The findings identify the dominant contributors that affect the viewership of advertisements on youtube. It provides for better prospects towards developing business strategies.

Keywords: Youtube, Generation Z, Business Strategies, Advertisements, Viewership

Introduction

YouTube was launched on 14 February 2005 in San Mateo, California, United States by Jawed Karim, Steve Chen, Chad Hurley. One of the co-founders, Jawed karim uploaded the first ever video on the video sharing website titled 'Me at the zoo'. Initiating with such humble beginning Youtube has innovated itself with various upgradation over the time. They include viewer ratings, below-the line-comments, live streaming, offline videos, content algorithms, voice recognition, YouTube premium and Youtube music. It has helped YouTube to retain its edge and now it has become one of the most prevalent video streaming and sharing platforms. Here are some statistics from Youtube's official website.

- Around 2 Billion logged-in users use YouTube each month and every day, people watch over a billion hours of videos generating billions of views.
- Around 70% of YouTube watch time comes from mobile users.
- Local versions have been launched in more than 100 countries.
- You can use YouTube in a total of 80 different languages (which covers 95% of the Internet population).

YouTube is estimated to be the second largest search engine after Google. Over the time, Youtube has become an extremely desirable platform for content creators. 50 million of the total users are content creators who upload 576,000 hours of video to YouTube every day. Many 'YouTubers' (Content creators who post videos on Youtube to gain revenue) have become world famous celebrities with creating and posting compelling content on the platform. They earn based on number of views for their video and number of subscribers. The content is localized in 91 countries in 80 different languages. With such huge reach, Youtube has become an effective medium for

brand promotion through videos as well as poster advertisements. Companies also market themselves via content sponsorship, collaborations with Youtubers, unboxing videos etc.

YouTube facilitates data driven advertising. Particular ads are shown to potential buyers and people which are interested in that particular product. The algorithms for the same are backed by search history of a user with the help of two giant search engines of the world. Those are Google and Youtube. Hence the results are phenomenal. YouTube ads fall under three categories: Non-skippable ads, bumper ads and True View ads. Non-skippable ads are, as the name suggests cannot be skipped. Business who are looking for little build up can have such ads. They are paid as per cost-per-mile bases which gives more control over ad spend. Bumper ads are the bearable ads which last for 6 seconds at most. They are short and can be less troublesome for viewers. True view ads are the skippable ads which appear at the beginning or in middle of the video. They are great place to get started as they are relatively cheaper.

True view ads are most popular compared to other promotion tool on Youtube. True view ads do not have any specific time limit and also involve low risk. Advertisers only pay when ad is not skipped or desired action is taken by a viewer. Hence, as true ads are skipped after 5 seconds, not a single buck is spent on an uninterested viewer. In 2018, Google came up with 'TrueView for reach' for optimizing ads based on campaign goals. It enables an advertiser to pay per thousand views (CPM-Cost per 1000). The duration of TrueView ads is between 6 seconds to 30 seconds which boosts recall value for the ad. All of these features make TrueView ads very efficient for mass reach but also 'skip ad' feature makes it challenging for companies. Because they have to make ads so interesting in first five seconds that viewers don't skip it.

There are plenty of reason why people skip ads. Most of the viewer's skip ads out of habit. Even when the ad is continued, it doesn't have enough involvement of the viewer as he is more inclined towards watching the video. This attention worsens when the viewers are travelling or engaged in other activities while watching videos. Lot of advertisers are struggling with making engaging ads. Whether it is a TV commercial or Youtube video ads, maintaining consumer attention is substantial with respect to today's tedious competition and rise of Gen Z viewers. Early Gen Z group involves people born between the years 1995 to 2015. This age group has influence from Gen Z as well as Gen Y people. Hence analyzing video viewing behavior of this group becomes significant. This age group is exposed to traditional entertainment mediums such as Television as well as modern platforms such as OTT and various application. Hence the shift rate of this group is higher than the other two groups. The study talks about what are such element which can be used to maximize the output of TrueView ads on YouTube with respect to early gen z group.

Objectives of the study

- To assess various factors which make an Early Gen Z viewer skip or not to skip a video ad on YouTube.
- To study what elements does an early Gen Z viewer consider before skipping a YouTube video ad.
- To explore about a general behavior of an early Gen Z viewer on YouTube.

Literature review

Advertisement's impact is higher on YouTube than on television. But when a viewer skips the ad the impact drops to 10% compared to television ads. This result is not surprising, as ones who skip the ad are not involved in the ad and also, they have less stickiness towards it. When it comes to watching longer videos, viewers are more tolerant. Advertising industry is still working on what kind of advertising works online. Also, they are studying if strategies used in conventional mediums of advertising such as TV, Radio can be applicable on video streaming platforms too. Traditional ad performance indicators such as cost-per-click are not very effective these days as they do not measure the influence on the viewer. (Dorai-Raj, Sundar, Zigmond, 2010).

The Interactive Advertising Bureau (IAB) and its Mobile Marketing Center of Excellence says that Gen Z and millennials are more accessible via mobile phones than any other medium of advertising. The first of generation Z and last of the millennials are more prone to be influenced by ads on mobile phones than an average mobile user. Mobile shopping is comparatively more active than the other generation. Almost 75% of the population conduct shopping on Mobile phones. Gen Z and young millennials are tomorrow's primary customers (The Interactive Advertising Bureau, 2015).

According to Evans, correlation which lies within 0.40 to 0.59 is considered to have a moderate relationship and correlation which lies within 0.6 to 0.79 is considered to have a strong relationship. While watching skippable ads on YouTube, viewers have strong relationship with the entertainment factor of the video that follows the ad. Hence while making the skippable ads on YouTube, the advertisement agency should focus on the 'entertainment' factor. Hence the ads should be fun and enjoyable. Another important factor is 'credibility'. It has moderate positive relationship with viewer's attitude towards skippable ads. Hence the ad should be able to convey a sense of trust and confidence. On the negative side, 'irritation' was found to have negative relationship with the viewer (The Interactive Advertising Bureau, 2015).

Social media platforms and technology have connected to Gen Z at a level which no other generation before it, was connected. They connect via Snapchat, Instagram having no geographical boundaries. Their community of friends is offline as well as online. Gen Z are fluent in media multitasking i.e. shifting to various apps while doing other work. They work on computer while having many tabs open with YouTube/Netflix running in the background. While watching TV they might be on phones. Hence, they rarely pay attention to one thing. A social shift has also occurred in how families interact with each other and spend time together. Earlier a television took place where all the furniture in the room was directed at. Entertainment options were largely prescribed by media providers. Now families still spend time together but there are high chances that each member would have their own personal device in their hand consuming their own media (Madden, 2017).

Online and offline life of Gen Z is easily mingled up. They are connected to social media almost all the time. This constant existence on social media leads them to feeling depressed. Hence to relive from this they go on video streaming websites like YouTube. In a broad sense, this generation crave for feel good videos like videos of slime or dogs doing activities or web series and short stories. According to the survey by Visual Objects, YouTube is the most visited website

by the people of age group 18 years to 24 years. On an average Gen Z watches 68 videos across various social media like Instagram, Facebook etc. They use YouTube differently than the generation before them used it. Around 60% of the Gen Z population use YouTube for various tutorials, lectures also for group activities and learning through apps. Not only for studying but according to Ipsos 80% of the teens say that YouTube has enabled them to learn and acquire new skills that will benefit them in future. Also not only teaching about something but also studying with someone. There is one popular video called 'Study with me'. It has a girl studying with light background music and some breaks so that a person can play it while studying and won't feel alone. In coming few years Gen Z will be 40% of the online consumer. This digital-savy generation is aware when they are exposed to hidden advertisement via videos and also fine with it. Instead of advertisements the content which makes them uncomfortable is something which does not make them feel good. Moreover, they are likely to skip or turn of the advertisements which directly feed their insecurities. On the other hand, unboxing videos are one of the most popular videos among Gen Z population. Brands who use storytelling in their advertisement videos have come out to be very effective. To attract the Gen Z consumer, it is better not to hide the fact that it is an advertisement. Enriching the promotional piece with knowledge, entertainment or the opportunity to make a difference through social cause will definitely be most effective (Rhonda Bradley, 2019)

In YouTube true view ads, viewers decide how much of advertiser's information is to acquire which is not present in the conventional television media, beside this feature YouTube charges advertisers only when viewer watches the entire ad. This proves that more advertisements are watched when a viewer expects the subsequent information to be helpful in making a decision. Hence if the viewer is relatively certain about the advertisement, positively or negatively, he or she can move on to his or her desired content without the cost of delay. In two-sided market where platforms like YouTube sell their ads that are served to viewers. It is found that use of skippable ads leads to more viewers on the platform relative to the traditional ad format. Therefore, with more viewers on the platform, it sells more advertising. Under certain conditions. In some situations, the shift from the traditional to the skippable ad format is Pareto movement. Hence, skippable ads guide the viewers to more preferred information that is meaningful with viewer's perspective. Ultimately, viewer obtains direct benefit by interacting on the platform where viewers are predisposed to advertise products. (Dukes, Anthony J., Qihong Liu, and JieShuai, 2019)

Research Methodology

Research design

Random sampling method is used to collect the primary data. Secondary data is collected from various journals, websites, articles and survey reports. The study is a descriptive research and universe represents YouTube users. The analysis of the data is done with the help of the statistical tools available.

Sample Design

Scope of the study is restricted to Mumbai city only. The universe consists of people using YouTube within the age group of 16 to 26 years old. The sample size includes total number of 100 people. Random sampling method is used to collect primary date via structured questionnaire. A google form was circulated among the samples and some people were interviewed for pilot

study. The sample mainly consists of students as well as working population which actively use YouTube.

Questionnaire design

A structured questionnaire was circulated via Google forms. There are total 10 category of questions out of which, first two questions emphasize on the demographics of the sample size. Question number 3 to question number 5 aim to seek data about general YouTube behavior of the sample size. Lastly question number 6 to question number 10 helps to provide research specific information. All the questions except the first, are close ended questions for easy and objective analysis of the data.

Data Analysis and Interpretation

Table 1 shows the age demographic of the sample size. Out of 100 respondents there are 12 respondents who are within the age 16 to 18 years, 52 respondents are within the age of 19 to 21 years, 31 are within the age of 22 to 24 years and 5 respondents are within the age of 25 to 26 years.

Table 1: Age Demographic

Age (Years)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	12	12.0	12.0	12.0
	2	52	52.0	52.0	64.0
	3	31	31.0	31.0	95.0
	4	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

Table 2 indicates the frequency of the respondents skipping the ads. Out of the total sample size, there are 3 people who rarely skip the ads, 5 people skip an ad sometime, 31 people often skip an ad and 61 people always skip an ad.

Table 2: Number of people skipping ads

How Often					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	3.0	3.0	3.0
	2	5	5.0	5.0	8.0
	3	31	31.0	31.0	39.0
	4	61	61.0	61.0	100.0
	Total	100	100.0	100.0	

Table 3 describes various reasons why the respondents skip an ad. Most of them i.e. 45 of them skip it because they want to skip to next video quickly. Following, 19 of them skip it because the

ad doesn't raise interest, 17 of them skip it because of the long duration and 12 of them skip it because of the boredom. Other responses include reasons like the ads are repeated, few of them are habitual and just one person does not skip the ad.

Table 3: Reason behind skipping of ads

Reason					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	4.0	4.0	4.0
	2	17	17.0	17.0	21.0
	3	13	13.0	13.0	34.0
	4	45	45.0	45.0	79.0
	5	19	19.0	19.0	98.0
	6	1	1.0	1.0	99.0
	7	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

Table 4 describes frequency of respondents watching ads after 'skip ad' option is available. 63 of them watch ads rarely, 28 of them do it sometimes and only 9 of them watch the ad even after 'skip ad' option is available.

Table 4: How often people watch ads after 'skip ad' option is available

Availability of 'skip ad' option					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	63	63.0	63.0	63.0
	2	28	28.0	28.0	91.0
	3	9	9.0	9.0	100.0
	Total	100	100.0	100.0	

Table 5: Factors which made the person skip an ad

Factors for skipping an ad					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	9.0	9.0	9.0
	2	12	12.0	12.0	21.0
	3	11	11.0	11.0	32.0
	4	19	19.0	19.0	51.0
	5	3	3.0	3.0	54.0

	6	10	10.0	10.0	64.0
	7	7	7.0	7.0	71.0
	8	28	28.0	28.0	99.0
	9	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

(Tone (Happy, Sad, angry etc.) -1, Music -2, Actor/Actress -3, Poppy Colors/ Funkiness -4, Catchy voice-5, Recent internet sensation-6, Celebrities like Stand-up comedians-7, Generic theme (Cricket, Love etc.)-8, YouTube stars-9). As shown in the above table, 28 out of 100 respondents consider generic theme as a reason to skip an ad 9 people considered tone of the ad as a factor to skip it. After that poppy colors/ funkiness and music is selected by 19 and 12 respondents selectively. There are only 11 respondents who skip ads because of actors. Other than these catchy voices (3), recent internet sensation (10) and celebrities like standup comedians (7) have been selected by few respondents.

Table 6: Factors that made the person recall a particular ad

Recalling factor					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	15.0	15.0	15.0
	2	23	23.0	23.0	38.0
	3	11	11.0	11.0	49.0
	4	7	7.0	7.0	56.0
	5	7	7.0	7.0	63.0
	6	5	5.0	5.0	68.0
	7	6	6.0	6.0	74.0
	8	25	25.0	25.0	99.0
	9	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

Table 6 reflects the factors that make the person recall an ad. (Tone (Happy, Sad, angry etc.) -1, Music -2, Actor/Actress -3, Poppy Colors/ Funkiness- 4, Catchy voice-5, Recent internet sensation-6, Celebrities like Stand-up comedians-7, Generic theme (Cricket, Love etc.)-8, YouTube stars-9). It is found that 23 respondents recalled the ad because of the music it had. 25 people were able to recall the ad because of ad's generic theme like love or cricket. Tone and actors as a factor were chosen by 15 and 11 respondents respectively. Other than the stated factors catchy voices funkiness and recent sensation were chosen by very few respondents.

Table 7: Factors that will be considered for not skipping the ad

Factors considered for not skipping					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	8.0	8.0	8.0
	2	10	10.0	10.0	18.0

	3	4	4.0	4.0	22.0
	4	9	9.0	9.0	31.0
	5	9	9.0	9.0	40.0
	6	11	11.0	11.0	51.0
	7	49	49.0	49.0	100.0
	Total	100	100.0	100.0	

Table 7 reflects the factors that the respondents consider while not skipping the ad. (Duration of the ad-1, If it's a movie trailer-2, Favorite actor/actress-3, Woke advertisement (Social message)-4, Knowledge addition- 5, Humor-6, Curiosity-7). As shown in the above table 49 respondents chose curiosity as a factor they will consider while watching the ad. 10 respondents chose movie trailer as another factor to be considered while not skipping the ad. 9 respondents also considered the ads which has knowledge addition in anyway. Along with it, 9 respondents check if the ad has got any social message. Factors like humor was considered for 11 and duration of the ad was considered by 8 respondents.

Table 8: When a person is most likely to skip the ad

Most likely to skip before					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	26	26.0	26.0	26.0
	2	30	30.0	30.0	56.0
	3	10	10.0	10.0	66.0
	4	8	8.0	8.0	74.0
	5	26	26.0	26.0	100.0
	Total	100	100.0	100.0	

Table 8 shows when the respondent is most likely to skip an ad. (Before Web series-1, Before Music videos-2, Before Movies-3, Before Stand up/DIY/Vlogs-4 and Before any short video-5). 30 respondents of the total are most likely to skip an ad before the music video. 26 respondents are likely to skip ad before web series and short videos. Only 10 respondents are likely to skip an ad before a movie and lastly 8 of them are likely to skip it before a stand up or DIY video.

Findings of the Study

As stated in the Table 1, most of the respondents were within the age group of 19 to 24. Although there is considerate amount of respondents within the age of 16 to and 18 and 25 to 26, the result is inclined towards this age group. As stated in the Table 2 and Table 3, most of the people always skip the ad and reason behind skipping the ads selected by most of the respondents is that they want to skip to the next video quickly. 31% of the respondents often skip ads and some of the other reasons behind skipping ad are prolonged time, boredom or the ad doesn't raise interest. With reference to Table 4, most of the people rarely watch ads after 'skip ad' option is available. Only 9% of the respondents watch ads even after the option is available. Considering Table 5 respondents selected generic themes to skip an ad. Ads having a generic theme like love, cricket etc. were skipped more as compared to those who have poppy colors. Adding catchy voices in the ad did not add a significant value for the respondents. Tone of the ad and the generic theme were

the other reason why the respondents skip an ad. Music used in the ad also plays an important role as a reason behind skipping an ad. Music also played highest selected reason, when the respondent had to recall an ad. Along with it, theme of the ad also helped the respondents recall a specific ad. Only few respondents recalled an ad based on the actors, catchy voices and poppy colors. There were many factors which affect the decision of the respondents. Ability to raise curiosity being the most selected one, ad of a movie trailer is also skipped less. 44% of the respondents also think that if the ad is knowledgeable in general, they won't skip it. Other than this, duration of the ad stands lesser importance if the prior elements are fulfilled. There were highest chances that the ad will get skipped before music videos. Other than that, ads get skipped before short videos and web series. Movies and stand up videos have lesser chances of ads getting skipped.

Conclusion

The sample size of the research is born between 1995 to 2005 which has a mixed psyche of Gen Z and Gen Y. They are raised by early Gen Y but they grew up with Gen Z peers. This age group puts emphasis on music, tone and ability to raise curiosity of the ad while skipping it. Because this age group is exposed to digital ad almost all the time. The ads which keep them interesting are ones which they consider to watch. Most of the times they skip ads out of lack of interesting matter in the first five seconds, as most of the ads on internet have become monotonous while struggling to be different. Hence the viewers eagerly wait until the skip ad option becomes available. Because of this, most of the viewers have become habitual to skipping ads. Hence the whole ad is rarely seen. As early Gen Z generation has grown up in digital age, they have seen more of Youtube and OTT than the television, hence people appearing on web series, OTT shows and standup comedians appeal more to them and hence the ads are skipped less when these people are in them. Along with this, actors present in the ad also restrains a viewer from skipping. Hence in general, those who love a particular actor will not skip that particular ad where he or she is present, but as actors are associated with many other things, ads with actors do not have much recall value. Music plays a significant role in making a viewer not skip an ad or even skip an ad. Many of the ads take additional efforts to make an ad memorable by adding catchy music and poppy colors but more than adding a value these elements make a viewer skip an ad. When the music is in sync with viewer's mind, he or she is more prone to watch and vice versa. Hence if a happy viewer views an ad which has melancholic music, he is likely to skip it. As viewers are bored of monotonous ads, generic themes like love, cricket adds a negative value rather than making a viewer see an ad. Hence these ads are skipped more rather than those who do not have such themes. But when it comes to recall value these ads win because they have genericity which is easy to recall. When ad makes a viewer curious, he or she automatically continues to watch without skipping, same happens when ad acts a knowledge addition. Duration of the ad matters if the viewer anyway wants to skip to the video quickly, hence the prior two stands at a greater importance than the latter. Every time when a viewer clicks a YouTube video, he or she already has a preconceived notion before watching and this notion is disrupted when an ad comes in-between. Additionally, similar happens when a viewer is about to watch any of the YouTube videos like Music, Vlogs, a web series. Hence, tone of the ad determines if the ad will get skipped or not. Ads are most likely to get skipped before music videos because of its diverse genre and short duration. Due to same reason, ads before movies are less likely to get skipped because of its long duration as the viewer has state of mind to spend some time on the movie already.

In a nutshell, tone of the ad has to be in sync with the viewer, along with that music plays a significant role when the recall value of the brand is concerned. Additionally, story ad of the ad

should climax early in order to make an early Gen Z viewer see it, considering that they usually skip ads early. The age group puts more efforts on Music and digital world rather than the traditional media.

Managerial implications

Gen Z will soon enter the earning population of the total customer base. This generation is also known to practice micro tasking and tend to give partial attention to two or more things at a time. Hence fetching attention of this generation for an advertisement will be a tough nut to crack. This research helps advertisers understand what factors will make a Gen Z viewer not to skip the ad, so that delivery of the advertising message is uninterrupted. It helps trace a pathway to determine what factors an advertiser should consider while making first 5 seconds of the advertisement. As this generation is new in the mainstream consumer market, this research provides their reactions to skippable ads on YouTube.

Limitations

Research includes people who skip ads immediately after the 'skip ad' option is available and not the people who might watch the ad further and skip later. Surveying all the individuals that qualify to be a part of this universe was not possible, the sample size is thus limited to Mumbai city. The results are based on the responses given by the sample size of 100 only.

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Jeetram – a handloom weaver; which way to go?

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ABSTRACT

The handloom industry in India is carrying its excellence in craftsmanship from decades. Jeetram – a skilled handloom weaver of Chhattisgarh state has kept this traditional handloom weaving alive from generations along with his family.

But from past two-three years, there have been major economical changes due to which, Jeetram is in dilemma whether to carry forward the same or opt something else for his livelihood. With introduction of new technologies like power loom and cloth mills, this beautiful hand woven art of weavers like Jeetram is at jaws of death. There has been an increase in price of yarn which is an essential component in the production of handloom products. The study tries to find out how local weavers are being affected by the changes mentioned above.

The present study is presented in the form of a case describing and exploring the factors responsible for this dilemma. Data is collected as an interview with Jeetram.

KEY WORDS :

Handlooms, Weavers, Economical changes

JEETRAM:

The handloom industry in India is one of the leading industries from ancient history and conquers a unique place in our country. The industry also plays a very important role in India's economy. In case of employment, it is the second largest sector after agriculture.

But the worth of Indian handloom along with the weavers has gradually come to an end over the years. Against all odds, weavers like Jeetram are still continuing to go with this old tradition of handloom weaving. Jeetram, a 35-year old local handloom weaver from Sakti of Janjgir district has been in this profession since many years. His family (refer to Annexure I) includes his father Rammohan from whom this art of weaving has been inherited. Including he and his father the other members in his family are his wife, Sarita and their two kids-Bablu and Radhika. The handloom weaving has been their only source of livelihood since past generations. The society in which he and his family reside consists of people who are into the same line of profession. The society of weavers gained this tradition of weaving from their forefathers and they were doing immensely great in past but the future of weaving has become unpredictable as per the current situation.

INDUSTRIAL OVERVIEW:

The loom which is manually operated either with the help of hand or leg or both are generally termed as **"handloom"** (refer to Annexure II). Handloom is not just a word in India but a representation of the ancient Indian culture. Handloom was known to the Indians since Indus Valley Civilization. Thus, the handloom weaving in India is said to be as old as mankind itself.

The daily operations of the handloom are normally household based where all the family members are involved in the production process. The industry also involves transfer of skills from one generation to another.

The industry which once witnessed growth at a very high rate also saw decline at the same pace. The sector which used to be one of the largest sectors with an advantage of having less capital, minimum usage of power, nature friendly is now facing various kinds of problems due to certain changes – economical as well as technological changes occurring in the industry. The weavers are facing livelihood crisis. The tragic death of Indian handloom weavers went unnoticed in the last 20 years. As per reports suggests, the total number of suicides from the year 1997-2010 are 615.

The handloom sector has not increased in the last ten years. As per research carried out in the year 2009-10, the number of people engaged in weaving were more than 43 lakhs which is very less when compared to 1995-96 when there were 65.5 lakhs people were in this profession. Looking towards the latest one, the number of weavers are only 31.45 lakhs. Even the budget allocation for handloom sector was reduced to Rs. 604 crore from Rs. 710 crore in 2016-17. This drop in the allocation of budget has made it difficult for the handloom weavers to cope up with the limited resources. Various schemes which turned out to be fruitless, the changed conditions of the industry, competition from power looms and mills, no proper infrastructure and financial support, change in consumer preferences, marketing problem, less availability of chemicals have been largely responsible for deterioration of the handloom industry. Abrupt increase in prices of cotton yarn further added to the dilemma of handloom weavers.

MAJOR CHALLENGES FACED BY JEETRAM:

1) **Rising Input Costs**

   The hike in prices of yarn, dyes, and chemicals in recent years has resulted into cost disadvantage to the Indian weavers. They are unable to get the necessary inputs at affordable prices. For example, the cotton sector was previously exempted from the taxes but now after the introduction of GST, it has been brought into it at the rate of 5%.

   The situation is worse for the individual weavers like Jeetram who need inputs in small quantities. Thus, this situation has affected the level of productivity of the handloom industry.

2) **Credit Problem**

   In case of Jeetram, the poor financial condition of him has made it difficult to obtain money from the financial institution. As a result of which he has to depend on private money lenders for the money which he requires to carry out the weaving process and the exploitation of weavers like him continues.

3) **Hurdles in GST**

   The goods and services tax (GST) on yarns, dyes, chemicals and comprised selling price of the product is leaving Jeetram with extremely low benefits. He and his family are finding this kind of tax structure too complicated. According to him, it is very difficult to maintain transactional records for a layman like him.

   Many provisions of the scheme are still not understandable by him.

4) **Marketing Problem**

   Jeetram states that they suffer from many marketing problems as well due to lack of various resources. The handloom products and raw materials required to make that

products are not easily available in tier II (state capitals or big cities) and tier III towns (minor cities with a population less than 1 million). Jeetram adds that due to the above problem the prices become too high for the common people to buy the handloom products.

5) **Lack of Modernization**

Jeetram has been using old technology and looms since ages which results into low output and requires high maintenance cost. Working with that much old looms and equipments becomes really tough sometimes. The repetitive production process is affecting his health in various ways such as body pain, eye problem, pain in his palms, etc.

6) **Migration to Other Fields**

The community of weavers has significantly reduced in recent times. The same problem is going on in Jeetram's family. Due to less profit in this profession and no future ahead, his son is no mood to continue weaving and according to him he would be shifting to any other profession after seeing the current scenario.

7) **Poor Infrastructure**

The handloom manufacturing requires a vast geographical area. There is no proper infrastructure for Jeetram to keep all the necessary requirements for handloom weaving. The water supply is a prominent part in weaving which according to him is insufficient in the particular area where he resides. According to him, the poor infrastructure and not so developed geographical area affects the productivity, quality and also incur an extra cost to him.

8) **Insufficient Research and Development**

Due to the poor financial backup, Jeetram has been facing the problem related to research of his industry. He states that the provisions of the state are also insufficient. The modern designs of handloom and the changing taste of the public is still unknown to him due to lack of research and development.

9) **Technological changes**

As digitisation is the need of the hour, advancements in technology are increasing at a rapid rate. The increase in technology is affecting the handloom industry in a very negative way. The increase in number of power looms (refer to annexure IV) and mills and cut-throat competition from them has put the existence of this sector in doubt – Jeetram said.

10) **Lack of Education**

The poor weavers like Jeetram lack the required knowledge about working in co-operatives. He is still not able to understand the procedures of the co-operatives which affect their performance as well. Even he fails to sell his handloom products to proper markets. Not only that, sometimes to clear his debts, he is forced to sell his products even at losses.

11) **Change in Buying Behaviour**

According to Jeetram, there has been noticed a sudden change in the buying behaviour of customers. They are slowly shifting towards the product produced by power looms and mills due to lack of time nowadays. He further states that, the quality on which buyers used to rely on has become a matter of subject now.

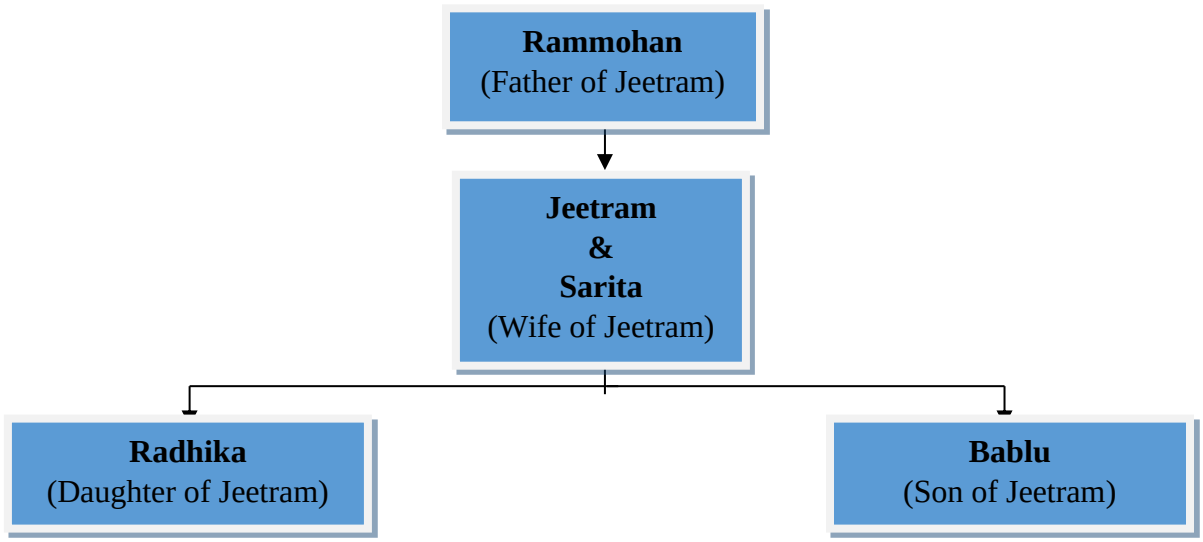
DILEMMA OF JEETRAM

Along with all these major challenges, there is always more to the troubled handloom weavers' plight, says 35 year old Jeetram. According to him, carrying out day to day operations is becoming

difficult for him and he has no hope of relief in the coming future. Everyday Jeetram has been putting 10 hours of work. Rammohan, Jeetram's father states that weavers work from start to end of the day and still gain no profit because the major portion of their earnings goes in paying debts. Despite of the lifelong hardwork, their possessions are very limited. Their livelihood sadly represents the problems of handloom weavers in India. Even Bablu, Jeetram's son is not willing to enter into this profession of handloom weaving in the coming future. According to him, weavers nowadays are weaving poverty.

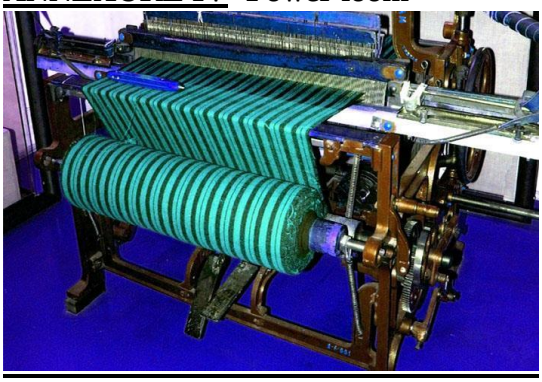
The art of weaving which was once a matter of prestige for them has become worthless now. He is battling hard to revive the same position what weavers had in the past. After seeing all this, Jeetram is in a great dilemma whether to pass on this ancient art of weaving to further generations or get his son educated and make him enter in another profession as per his will.

ANNEXURE I - Family tree of Jeetram



ANNEXURE II - Handloom

ANNEXURE IV- Power loom



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Psychological Well-being Domains and Gender Differences

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ABSTRACT

The concept of psychological well-being argues that well-being is not just about being happy, it is about living a life which is worth living. Higher Level of Psychological Well-Being is an Indicator of Positive functioning. It also has positive relation with health, long life and mental health. This research is undertaken to understand the level of psychological well-being among management students and also to see possible gender differences if any. A primary study is conducted to understand the distribution of psychological well-being domains in a pre-defined sample. In all 295 students are studied on Ryff's well-being scale and results are analyzed through descriptive as well as inferential statistical analysis. The results show high level of psychological well-being in management students. Personal growth perceived is higher compared to other well-being domains. Also the data is negatively skewed for all aspects and also for overall wellbeing score. However, there is no significant gender difference in the levels of psychological well-being.

Key Words: Psychological well-being, Ryff's scale, Management students, Personal growth, Gender differences

INTRODUCTION

The focus on leading a healthy life not just physically but mentally and emotionally as well brings us to the concept of well-being. Understanding well-being among plays an important role as this impacts an individual's mental health and positive psychology. A focus on well-being considers how people feel and function, and how they evaluate their lives. Well-being talks about the way in which people evaluate their lives with regard to their own appraisals of how life is going, or particular aspects of their lives. Well-being covers elements which lead to a happy and fulfilling life.

Well-being

Well-being plays a central role in creating successful and healthy work environment. Focusing on well-being at work presents an opportunity to benefit organizations by helping working individuals feel happy, satisfied and content in their roles. Research shows that people who have good standards of well-being at work are likely to be more loyal, more creative, and more productive than individuals with poor standards of well-being at work. For decades, organisations have tried to nurture these qualities through employee engagement strategies; however, engaging employees is just one part of the story. Improving well-being at work implies a more rigorous approach, which focuses on helping employees to strengthen their personal resources, flourish and take pride in

their roles within the organisational system, Function to the best of their abilities, both as individuals and in collaboration with their colleagues and have a positive overall experience of work.

Well- being is argued to have two important elements, this can be separated into two key aspects, Hedonic and Eudaimonic. The hedonic aspect of well-being refers to people's feelings or emotions, such as happiness or anxiety. Associating well-being with hedonic pleasure or happiness has a long history. Psychologists adopting the hedonic view focus on a broad conception of hedonism which includes the preferences and pleasures of the mind and the body. The primary view among hedonic psychologists is that well-being consists of subjective happiness (SWB).

Hedonic psychology is defined as the study of what makes life experiences pleasant and unpleasant. It clearly suggested that the terms well-being and hedonism are essentially equivalent. By describing wellbeing in terms of pleasure and pain, hedonic psychology poses for itself a clear target of research and intervention, namely maximizing human happiness. Although there can be many ways to evaluate pleasure and happiness in human experience, research in hedonic psychology uses assessment of subjective well-being (SWB). SWB consists of three elements: life satisfaction, presence of positive mood and absence of negative mood, together often summarized as happiness. Ideas included in SWB include positive affect and negative affect, happiness, and life satisfaction. Positive psychology is mainly concerned with the study of SWB. *(Diener 2011)*

Subjective well-being (SWB) follows hedonic approach of well-being, it includes how people experience the quality of their lives. Psychologists defined happiness as a blend of life satisfaction and the positive and negative affect. SWB encompasses emotions and moods as well as evaluations of one's satisfaction with general and specific areas of one's life. *(Diener, Ed, 2000)*

The eudaimonic aspect of well-being refers to leading 'a life well lived', interacting with the world around you to meet basic psychological needs such as experiencing a sense of competence or sense of meaning and purpose.

In spite of the popularity of the hedonic view, many philosophers and thinkers have discouraged happiness as a major standard of well-being. Aristotle an ancient Greek philosopher originated the concept of eudaimonic happiness. He considered hedonic happiness to be an inappropriate way of assessing well-being as it makes humans mindless followers of their desires. He suggested, instead, that true happiness is found in the expression of virtue, in doing what is worth doing. The distinction brought out the difference between purely subjectively felt needs and objectively valid needs, former being partly harmful to human growth and the latter being in accordance with the requirements of human nature.

The term Eudaimonia is appreciated because it refers to well-being as distinct from happiness. Eudaimonic theories argue that not all desires and outcomes that a person might value would yield well-being when achieved. Even though they are pleasure producing, some outcomes are not good for people and would not promote wellness. Thus, from the eudaimonic perspective, subjective happiness cannot be equated with well-being. *(Ryan & Deci 2001)*

Indeed, the deeper philosophical roots of the new model of well-being resides in Aristotle's formulation of the highest human good, which he termed Eudaimonia. His writings sharpened the significance of this alternative approach to well-being via the claim that the highest of all human goods is not happiness, feeling good or satisfying appetites. Instead, it is about activities of the soul that are in accord with virtue, which Aristotle elaborated to mean striving to achieve the best that is within us.

Eudaimonia thus captured the essence of the two great Greek imperatives: first, to know yourself, and second, to become what you are. The latter requires discerning one's unique talents, and then

working to bring them to reality. Ryff (1989) also argued that the concept of psychological well-being (PWB) is distinct from SWB and she presented a multidimensional approach to the measurement of PWB.

Psychological well-being

Psychological well-being (PWB) refers to the theory and the measurement scales developed and advocated by Ryff. C (1989). In her seminal paper, "Happiness is everything, or is it? Explorations on the meaning of psychological well-being" she differentiates PWB with subjective well-being (hedonic well-being). Ryff attempted to combine different conceptions of well-being from the ancient Greek to the modern psychological such as theories of Individuation from Carl Jung, Self-actualization from Abraham Maslow and others.

Carol D. Ryff explored the meaning of Psychological Well-Being by studying the extensive literature. She derived six aspects of well-being (self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth). Three hundred and twenty-one men and women, divided among young, middle-aged, and older adults, rated themselves on these six measures along with instruments prominent in earlier studies (affect balance, life satisfaction, self-esteem, morale, locus of control, depression). Results discovered that aspects like positive relations with others, purpose in life, autonomy, and personal growth were not strongly present in prior assessment indexes, hereby supporting the assertion that key aspects of positive functioning have not been symbolised in the empirical research arena.

Ryff's study was based on the fact that there has been negligence in the task of defining the essential features of psychological wellbeing. He argued that much of the prior literature is founded on conceptions of well-being that have little theoretical rationale as a consequence of which, theory on psychological well-being has neglected important aspects of positive functioning. An alternative framework of psychological well-being, based on the integration of several theoretical domains is presented and operationalized in this research.

The research also brings attention to the fact that the literature on psychological well-being was not, in its inception, strongly theory guided. Instruments, earlier developed for other purposes, became the standard bearers for defining positive functioning. The six aspects of psychological well-being conceptualized by Ryff (1989) are autonomy, personal growth, self-acceptance, life purpose, mastery, and positive relations.

Autonomy: There is considerable emphasis in the prior literature on qualities like self-determination, independence, and the regulation of behavior from within. Self-actualizers are described as people showing autonomous functioning. This person is also described as having an internal locus of evaluation, whereby one does not look to others for approval, but evaluates oneself by personal standards. The process of turning inward in the later years is also seen by life span developmentalists to give the person a sense of freedom from the norms governing everyday life.

Self-acceptance: The most recurrent criterion of well-being evident in the previous perspectives is the individual's sense of self-acceptance. This is denned as a central feature of mental health as well as a characteristic of self-actualization, optimal functioning, and maturity. Life span theories also emphasize acceptance of self and of one's past life. Thus, holding positive attitudes toward oneself emerges as a central characteristic of positive psychological functioning.

Positive relations with others: Many of the former theories stressed on the importance of warm and trusting interpersonal relationships. The ability to love is seen as a central component of mental health. Positive relatedness comes with strong feelings of empathy and affection for all human

beings, being capable of greater love, deeper friendship, and more complete identification with others. Warmth relating to others is seen as a criteria of maturity. Thus, the importance of positive relations with others is repeatedly stressed in these conceptions of psychological wellbeing.

Environmental mastery: The individual's ability to choose or create environments suitable to his or her psychic conditions is seen as a characteristic of mental health. Maturity and life span development contribute to this. These theories emphasize one's ability to progress in the world and change it creatively through physical and mental activities. Successful aging also emphasizes the extent to which the individual takes advantage of environmental opportunities. These viewpoints suggest that mastery of the environment is an important ingredient of positive psychological functioning.

Purpose in life: Mental health is said to include beliefs that give one the feeling there is purpose in and meaning to life. Maturity also give emphasis to a clear comprehension of life's purpose, a sense of direction in life and intentionality. Thus, one who has positive psychological functioning has goals, intentions, and a sense of direction, and the feeling that life is meaningful.

Personal growth: Optimal positive functioning requires individuals to continue developing their potential to grow and expand as a person. The need to actualize oneself and realize one's potentialities is central to the clinical perspectives on personal growth. For example, Openness to experience is a key characteristic of the positive functioning person. Such an individual is continually developing and becoming, rather than achieving a fixed state wherein all problems are solved. Life span theories also give obvious emphasis to continued growth.

The combination of mental health and life span developmental theories points to multiple aspects of positive psychological functioning. Conceptually, some of these criteria appear to be distinct in meaning from the dimensions that have been appearing in past studies of psychological wellbeing (criteria like positive and negative affect, life satisfaction). Little does the empirical research emphasizes on qualities like positive relations with others, purpose in life, autonomy, or personal growth as key components of well-being. Therefore, the empirical challenge is to operationalize these theory guided dimensions so that they can be examined vis-a-vis the older indexes of positive functioning.

The basic aim of Ryff's research (1989) was to encourage interest in the basic question of what constitutes positive psychological functioning. It has been argued that early conceptions of wellbeing suffered from limited theoretical grounding, which led to the neglect of important facets of psychological health. In an effort to introduce certain of these theoretical ideas to the empirical literature, six theory-guided dimensions of wellbeing were operationalized. These measures revealed acceptable preliminary psychometric properties, although further validation and assessment is needed. Certain of these instruments showed convergence with prior indexes of well-being. For example, self-acceptance and environmental mastery are strongly associated with measures of life satisfaction, affect balance, self-esteem, and morale, thereby indicating clear linkages between theory-guided components of well-being and those evident in empirical studies. However, other dimensions—most notably, positive relations with others, autonomy, purpose in life, and personal growth—were not as closely tied to older assessment indexes. These findings support the assertion that key aspects of positive psychological functioning emphasized in Ryff's theory have not been represented in the empirical arena.

Psychological well-being relates differently to different people. It is very subjective. In general, the ability to cope up with the frequent stresses of everyday life in an acceptable way can be regarded as psychological health.

STATEMENT OF PROBLEMS AND NEED FOR STUDY

The measures on psychological well-being probe the following dimensions: (1) the extent to which respondents felt their lives had meaning, purpose and direction (purpose in life); (2) whether they viewed themselves to be living in agreement with their own personal convictions (autonomy); (3) the extent to which they were making use of their personal talents and potential (personal growth); (4) how well they were managing their life situations (environmental mastery); (5) the depth of connection they had in ties with significant others (positive relationships), and (6) the knowledge and acceptance they had of themselves, including awareness of personal limitations (self-acceptance).

The psychological heath influences behaviour significantly. An individual's mental well-being signifies his ability to handle stress and pressure. Understanding this also gives a fair idea of how an individual evaluates his life and whether he is satisfied with that. Since psychological well-being looks at life evaluation beyond happiness,

The present study attempts to understand psychological well-being dimensions in management students. Ryff Scales of Psychological Well-Being is a valid and reliable measure of psychological well-being. It can aid colleges and universities in understanding the degree to which their students are self-accepting, are pursuing meaningful goals with a sense of purpose in life, have established quality ties with others, are autonomous in thought and action, have the ability to manage complex environments to suit personal needs and values, and continue to grow and develop. Although the instrument does not measure all dimensions of well-being, the knowledge of students' psychological well-being can aid institutions in developing meaningful and intentional programming to enhance these dimensions of well-being.

LITERATURE REVIEW

The literature on psychological well-being has progressed rapidly since the emergence of the field over five decades ago. The studies show that psychologists and other social scientists have taken huge steps in their understanding of the factors influencing psychological and subjective well-being.

Well-being is a complex construct concerning with optimal experience and functioning. Research on well-being is derived from two broad perspectives: the hedonic approach, which focuses on happiness and defines well-being in terms of pleasure accomplishment and pain avoidance; and the eudaimonic approach, which focuses on meaning and self-realization and defines well-being in terms of the degree to which a person is fully functioning. These two views have given rise to different research attentions and a body of knowledge that is in some areas different and in others complementary. New methodological developments concerning are also allowing researchers to explore the field and formulate new questions for the same. *(Ryan and Deci 2001)*

A study on psychological well-being aspects of Asian elders (Thai elders) was carried out by a group of researchers. Psychological well-being is an important aspect of life quality for older adults. Asian elders may have a distinctly different perspective from Westerners concerning the meaning of psychological well-being. Using qualitative research methods, this study focused on the views of Thai elders. In-depth interviews and focus group discussions were conducted with 67 Thai people aged 60 and over. Transcripts were analysed resulting in the identification of five dimensions of well-being: harmony, interdependence, acceptance, respect and enjoyment. When compared to research in the United States, some of the dimensions of psychological well-being were distinct while others were overlapping. *(Ingersoll-Dayton, et al. 2001)*

Considering the importance of assessing aspects of wellbeing in individuals and its role in physical and psychological health, a study was carried out to examine the reliability and validity of Ryff's Psychological Well-being Scales (RPWBS). 145 students (96 women and 49 men) selected using random stratified method, completed RPWBS, Self-acceptance subscales, Oxford Happiness Scale, and Rosenberg's Self-esteem Scale. Data were analyzed using descriptive statistic methods and correlation coefficient. The research concluded that the Ryff's Psychological Well-being Scales (RPWBS) are valid and reliable and are suitable for use in assessing the psychological well-being of Iranian students. *(Bayani et al, 2008)*

One the other hand, there is research evidence which argues that reliability of Ryff's model of well-being. The study assessed the measurement properties of Ryff's Scales of Psychological Well-Being. Analyses of self-administered data from three major surveys – Midlife in the United States (MIDUS), National Survey of Families and Households II (NSFH), and the Wisconsin Longitudinal Study (WLS) – yielded very high overlap among the dimensions. These large correlations persisted even after eliminating several methodological sources of confounding, including question wording, question order, and negative item wording. However, in MIDUS pretest and WLS telephone administrations, correlations among the dimensions were much lower. Past research also demonstrates that self-administered instruments provide more valid psychological measurements than telephone surveys, and we therefore place more weight on the consistent results from the self-administered items. In sum, there is strong evidence that RPWB does not have as many as six distinct dimensions, and researchers should be cautious in interpreting its subscales. (Springer KW, Hauser RM: 2006)

A group of researchers developed a shorter version of psychological well-being and tested it on a combined Spanish language sample from Spain and Columbia. Using confirmatory factor analysis, the models were compared. The results showed that four out the six dimensions overlapped considerably. However, the model that fit the data best was the six factor model with one underlying second order well-being factor, hereby confirming Ryff's model in a non-Anglo–Saxon culture. *(Van Dierendonck et al, 2008)*

There is a significant negative relationship between social support and psychological problems suggesting that the higher the social support, the lower is the psychological problem *(Mariam Dzulkiflil et, al 2009).*

Psychosocial well-being is considered to have four dimensions: subjective well-being related to every day's events, subjective well-being related to faculty events, psychological well-being and social well-being. Diener's (1985) and Seligman's (2002) models of subjective well-being and Ryff's (1995) and Keyes' (1998) models of psychological and social well-being served as the conceptual basis for the development of various instruments measuring psychological well-being. *(Valeria Negovan, 2010)*

Various evidences are reviewed that indicate that high subjective well-being (such as life satisfaction, absence of negative emotions, optimism, and positive emotions) causes better health and longevity. For example, prospective longitudinal studies of normal populations provide evidence that various types of subjective well-being such as positive affect predict health and longevity, controlling for health and socioeconomic status at baseline. A number of studies indicate that positive feelings predict longevity and health beyond negative feelings. However, evidence suggests that intensely aroused or manic positive affect can be detrimental to health. Research is needed that examines in more depth the psychological and physiological pathways by which various types of subjective well-being influence health and longevity. *(Diener and Chan, 2011)*

There is positive relation between psychological well-being and academic performance. However the components relate differently for different individuals. Some of the good academic performers had high Autonomy and Environmental mastery while others had high Self-acceptance, Purpose in life and Positive relations with others **(***Henry P. H. Chow 2010).*

When positive psychology intervention are practiced, there is significant decrease in general distress, anxiety and depression symptoms among the intervention participants. In addition, the intervention strengthen self-esteem, self-efficacy and optimism, and reduced interpersonal sensitivity symptoms. There are potential benefits of evidence-based positive-psychology interventions for promoting mental health. *(Anat Shoshani and Sarit Steinmetz 2013)*

To get a detailed picture of the influence of positive and negative affect, a study employed the affective profiles model in which individuals are categorised into groups based on either high positive and low negative affect (self-fulfilling); high positive and high negative affect (high affective); low positive and low negative affect (low affective); and high negative and low positive affect (self-destructive). Individuals categorised as self-fulfilling tended to score higher on the psychological well-being dimensions: positive relations, environmental mastery, self-acceptance, autonomy, personal growth, and purpose in life. In addition, 47% to 66% of the variance of the harmony in life was explained by the dimensions of psychological well-being within the four affective profiles. Individuals categorised as self-fulfilling tended to report higher levels of both psychological well-being and harmony in life, however, individuals in the self-destructive group reported the lowest levels of psychological well-being and harmony. Self-acceptance and environmental acceptance might enable individuals to go from self-destructive to a self-fulfilling state. Garcia et al. (2014)

A study was done by Ryff in 2013 on developments in psychological well-being studies. The study reviewed research and interventions grown up around Ryff's model of Psychological well-being in the 1980s. The conceptual origins of this formulation are revisited and scientific products emerging from various thematic areas are examined. Increasing evidence supports the health protective features of psychological well-being in reducing risk for disease and promoting length of life. To date, over 350 publications using the eudaimonic scales of well-being have appeared in more than 150 scientific journals. (Ryff 2013)

Psychologists have given considerable attention to how well-being relates to other 'individual difference' variables such as personality traits. An early investigation used the big five model of traits and found that openness to experience was linked with personal growth, agreeableness was linked with positive relations with others, and extraversion, conscientiousness and neuroticism were all linked with environmental mastery, purpose in life and self-acceptance.

A variety of other psychological variables have been linked with well-being. Optimism, for example, predicts higher well-being, with the effects mediated by sense of control. Stable self-esteem predicts higher scores on autonomy, environmental mastery and purpose in life than unstable self-esteem. The satisfaction of psychological needs contributes to higher wellbeing. Intentional activity changes predict gains in psychological well-being, while those who revealed shifts from extrinsic to intrinsic values over the college career had greater increases in psychological well-being. (Ryff 2013)

Wigtil and Henriques (2015) investigated the relationship between intelligence and psychological well-being in young adults using a sample of 3,829 incoming first-year students at a large university using multiple regression of SAT scores and scores of these dimensions on a 54-item version of Ryff's Scales of Psychological Well-Being.. There is a positive linear relationships between intelligence and PWB dimensions of Environmental Mastery, Autonomy, Personal

Growth, Purpose in Life, and a curvilinear relationship between intelligence and the PWB dimension of Positive Relations with Others.

Clemente, et al. (2016) studied a sample of 289 female students randomly selected from high schools in Iran. The study aimed to measure students' stress and psychological well-being status among sample female adolescents. It was found that an inversely significant relation exists between stress and psychological well-being (r =-0.68). Findings also indicated that students, who had good relation with teachers, had 54% less probability of low psychological well-being than those who had not. No causal inferences were drawn due to non-experimental nature of the study. This study concluded that the prevalence rates of mental disorders and stress reported for high school females of Iran, Thus there it is needed to develop effective strategies to promote psychological well-being and stress management, especially for female adolescence. This study attempted to determine the level of psychological well-being among postgraduate students.

Roslan et al (2017) studied Psychological Well-Being among Postgraduate Students. The study also aimed to assess the relationship between psychological well-being and demographic factors, such as age and field of study. Psychological well-being questionnaires were administered to a sample of 192 Master of Education students. The findings demonstrated that students possessed a slightly high level of psychological well-being. Differences were found in students' psychological well-being across age groups, and field of study.

Table No.1: Literature Review on Psychological Well-being

Sr. no.	Author	Year	Area of research	Major outcomes
1	Ryan and Deci	2001	Approaches to well-being	Two Approaches to Well-Being: Eudaimonic And Hedonic
2	Ingersoll-Dayton, et al.	2001	Psychological well-being in Thai elders	dimensions of well-being: harmony, interdependence, acceptance, respect and enjoyment
3	Springer KW, Hauser RM:	2006	Assessment of the construct validity of Ryff's scales	6 Dimensions Overlap Considerably
4	Van Dierendonck D and others	2008	Exploration of Ryff's Model of Psychological Well-being	Confirmation of Ryff's six factor model.
5	Bayani et al	2008	Validity of Ryff's well-being scales	Ryff's Psychological Well-being Scales are valid and reliable and are suitable for use in assessing the psychological well-being of Iranian students

6	Edgar Bresó Esteve	2008	Well-being and Academic Performance	Students with positive past academic record show positive Academic engagement
7	Mariam Dzulkifli Adawiah and Md Aris Safree Md Yasin	2009	Well-being and positive psychology	Significant negative relationship between social support and psychological problems
8	Henry P. H. Chow	2010	Well-Being and Academic Performance	Positive relation between psychological well-being and academic performance
9	Valeria Negovan	2010	Psychosocial well being	4 dimensions: subjective well-being, subjective well-being related to faculty events, Psychological well-being and social well-being.
10	Diener and Chan	2011	influence of subjective well-being health and longevity	High subjective well-being causes better health and longevity
11	Anat Shoshani, Sarit Steinmetz	2013	Well-Being and Academic Performance	Positive-psychology interventions promoted psychological well-being & academic performance
12	Carol D. Ryff	2013	developments in psychological well-being studies	Research on eudaimonic perspective and Psychological well-being is on a rise.
13	Gracia	2014	Relationship of positive and negative affect on psychological well-being and harmony.	Individuals with high positive and low negative affect have higher levels of both psychological well-being and harmony in life
14	Clifton J Wigtil and Gregg R Henriques	2015	The Relationship Between Intelligence and Psychological Well-Being	There is curvilinear relationship between Verbal ability and Positive Relations with Others; there is significant relationships between Maths scores and Purpose in Life and Personal Growth in the negative direction.

15	Miguel Clemente et al.	2016	Stress and Psychological Well-being	an inversely significant relation exists between stress and psychological well-being
16	S. Roslan, N. Ahmad, N. Nabilla and Z. Ghiami	2017	Psychological Well-Being Among Postgraduate Students	Students possessed a slightly high level of psychological well-being. Differences were found in students' psychological well-being across age groups, and field of study

OBJECTIVES OF STUDY

The present study has following objectives.

1. *To understand well-being and its hedonic and eudaimonic views.*

The study aims to understand the conceptual and theoretical framework of well-being in terms of its domains Psychological well-being and subjective well-being. The study also focuses on understanding the various domains psychological well-being in depth.

2. *To assess psychological well-being and its subscales in management students.*

The research undertaken attempts to assess the psychological well-being through its subscales (Self-acceptance, Positive Relation, Autonomy, Environmental Mastery, Purpose in Life and Personal Growth) of post-graduate students of management studies and see where students stand in terms of psychological well-being scores. The study also tries to see if there is a difference in psychological well-being with respect to gender.

HYPOTHESIS

Based on the objectives, following hypothesis will be tested.

H1: There is no difference in distribution of Autonomy, Environmental Mastery, Personal Growth, Personal Relations, and Purpose in life and Self-Acceptance scores.

H2: There is no difference in proportions of psychological well-being scores across categories of gender.

RESEARCH METHODOLOGY

Research design: Descriptive research is undertaken to understand psychological well-being and its facets. The same factors are studied for a pre-decided sample through a survey questionnaire. Top notch management institutes from Mumbai are considered for a primary analysis of traits exhibited by their students.

Sampling design: Random sampling is used. Total 295 management students are surveyed. The survey was floated online as well as manually to all full time MBA students of sample institutes.

Questionnaire design: This paper uses 42 items set of Ryff's scale. The reliability coefficient of Ryff's scale for each trait is given below.

Table 2: Cronbach's alpha for psychological well-being scale

Self-acceptance	0.71
Positive Relation	0.77
Autonomy	0.78

Environmental Mastery	0.77
Purpose in Life	0.70
Personal Growth	0.78
Overall Ryff's well-being scale	0.82

RESULTS

In all, 295 students were assessed on Ryff's psychological well-being scale out of which 209 were males and 86 were females. It is generally observed that management courses have more number of male participants. The students were assessed on the Ryff's psychological well-being scale and the results are as follows. Management students demonstrated higher ratings in overall psychological well-being. Students' self-report about personal growth was quite high. The data showed negative skewness which supports general research observation that people tend to give higher ratings to themselves.

Table 3: Psychological Well-being scores on all six domains

		Autonomy	Environmental Mastery	Personal Growth	Personal Relations	Purpose in life	Self-Acceptance	Psychological Well-being
All	Low	35	43	10	25	25	40	13
	High	260	252	285	270	270	255	282
	Total	295	295	295	295	295	295	295
Male	Low	21	30	7	17	19	29	10
	High	188	179	202	192	190	180	199
	Total	209	209	209	209	209	209	209
Female	Low	14	13	3	8	6	11	3
	High	72	73	83	78	80	75	83
	Total	86	86	86	86	86	86	86

Table 4: Descriptive statistics of psychological well-being scores

	Autonomy	Environmental Mastery	Personal Growth	Personal Relations	Purpose in life	Self-Acceptance	Psychological Well-being
Median	3.71	3.71	4.14	4	4	3.85	3.88
Mode	3.71	3.85	4	3.85	4	3.85	4.26

Kurtosis	0.39	0.01	0.32	0.46	0.75	0.45	0.32
Skewness	-0.34	-0.17	-0.57	-0.55	-0.63	-0.56	-0.41
Count	295	295	295	295	295	295	295

Testing the distribution of scores across six categories of psychological well-being.

H1: Null hypothesis: There is no difference in distribution of Autonomy, Environmental Mastery, Personal Growth, Personal Relations, and Purpose in life and Self-Acceptance scores.

H1: Alternate hypothesis: There is significant difference in distribution of Autonomy, Environmental Mastery, Personal Growth, Personal Relations, and Purpose in life and Self-Acceptance scores.

Table 5: Hypothesis testing for H1

	Autonomy	Environmental Mastery	Personal Growth	Personal Relations	Purpose in life	Self-Acceptance
Low	35	43	10	25	25	40
High	260	252	285	270	270	255
Total	295	295	295	295	295	295
Chi-square test						
Chi				27.858		
df				5		
p value				0.0000388		

Reject null hypothesis.

Considering the p-value at 5% significance level, the difference in proportion is statistically significant. There is significant difference in distribution of Autonomy, Environmental Mastery, Personal Growth, Personal Relations, and Purpose in life and Self-Acceptance scores.

Testing difference in proportion of psychological well-being score across gender

H2: Null hypothesis: there is no difference in proportions of psychological well-being scores across categories of gender.

H2: Alternate hypothesis: there is significant difference in proportions of psychological well-being scores across categories of gender.

Table 6: Hypothesis testing for H2

Psychological Well-being			
	Male	Female	Total
Low	10	3	13

High	199	83	282
Total	209	86	295
Chi-square test			
Chi		0.243	
df		1	
p value		0.6220477	

Accept Null hypothesis. There is no difference in proportions of psychological well-being scores across categories of gender. Difference in proportion is statistically insignificant

From the data analysis and hypothesis testing, it can be said that the score differ significantly on all six parameters of psychological well-being. Students have positive psychological well-being overall and also in individual domains. But there is no significant difference in scores for males and females.

DISCUSSION

Psychological well-being refers to how people evaluate their lives. These evaluations may be in the form of cognitions or in the form of affect. The cognitive part is an information based appraisal of one's life that is when a person gives conscious evaluative judgments about one's satisfaction with life as a whole. The affective part is a hedonic evaluation guided by emotions and feelings such as frequency with which people experience pleasant/unpleasant moods in reaction to their lives. The assumption behind this is that most people evaluate their life as either good or bad, so they are normally able to offer judgments. Further, people invariably experience moods and emotions, which have a positive effect or a negative effect. Thus, people have a level of subjective well-being even if they do not often consciously think about it, and the psychological system offers virtually a constant evaluation of what is happening to the person. Psychological well-being can also be defined in terms of internal experience of the respondent and their own perception of their lives.

Higher level of psychological well-being is an indicator of positive functioning. It also has positive relation with health, long life and mental health. Psychological well-being also has strong influence on academics and job performance. Previous literature proves association of high psychological well-being to high income and better performance at workplace. It is also found to be related to physical health. If a society regularly assesses well-being, people will provide their attention on it and learn more about its causes. Psychological well-being is therefore valuable not only because it assesses well-being more directly but it has beneficial consequences.

CONCLUSION

Despite some minor limitations, the Ryff Scales of Psychological Well-Being is a valid and reliable measure of psychological well-being. It can aid colleges and universities in understanding the degree to which their students are self-accepting, are pursuing meaningful goals with a sense of purpose in life, have established quality ties with others, are autonomous in thought and action, have the ability to manage complex environments to suit personal needs and values, and continue to grow and develop. Although the instrument does not measure all dimensions of well-being, the

knowledge of students' psychological well-being can aid institutions in developing meaningful and intentional programming to enhance these dimensions of well-being.

The six domains of psychological well-being; Autonomy (The degree of independence and self-determination), Environmental mastery (The ability to manage one's life properly and responsibly), Personal growth (The extent of being open to new experiences), Positive relations with others (The ability to have satisfying and high quality relationships with others), Purpose in life (The degree of goal-orientation, believing that one's life is meaningful and purposeful) and Self-acceptance (The degree of a positive attitude towards oneself and one's past life), these dimensions offer a notable contrast to previous well-being indicators focused on feeling good, happy, positive or satisfied with life.

FUTURE SCOPE OF STUDY

In higher education, the Ryff could be used in a multitude of settings, such as a part of an intake and final assessment at a student counselling center. Counsellors would be able to see what impact the counselling sessions had on students' psychological well-being. Spiritual counsellors could also use the inventory in their dialogues with students about developing meaningful purpose in life in the journey toward finding true "vocation." Perhaps the most obvious place where this instrument may be used in the higher education setting is in conjunction with a health or wellness curriculum in residence halls, Greek-letter organizations, and first-year experience programs.

Educators could administer the Ryff before and after initiating programs to assess their impact on students' psychological well-being. In this way, the Ryff scales could be used as a tool to inform what types of programs could be provided to enhance psychological well-being. More generally, the Ryff could be administered to a student population at the beginning and end of the college career to measure the collective development of well-being over time. Researchers might also consider combining data on student demographics (e.g., socioeconomic status, ethnic background, GPA, major, etc.) with results of the Ryff survey to examine relationships between student characteristics and well-being.

LIMITATIONS

One limitation of the Ryff scales is that it relies on self-reported assessments of psychological well-being. As with all self-report instruments, students may respond in ways that are socially desirable rather than reveal their actual response to each statement.

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A Study of Logistics 4.0: Overview, Implications, Challenges & Applications

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ABSTRACT

The objective of this paper is to provide a comprehensive understanding of the concept of Logistics 4.0, which is a part of Fourth Industrial Revolution (Industry 4.0) and its implications on resource planning, warehouse management systems, transportation management systems, etc. This paper discusses about various challenges associated with implementation of Logistics 4.0 along with its applications. This paper is one of the attempts to draw attention towards the implications of Logistics 4.0 and implementational challenges, as most of the recent studies are discussing the technological shift and change in manufacturing and logistics processes. The concepts are presented by integrating the existing literature with logical beliefs.

RESEARCH DESIGN

The research described in this paper has largely been carried out through journals, consultant's reports, literature reviews, websites, and articles. Throughout the development of paper, the main purpose is to understand the logistics required for industry 4.0 with implications, challenges, and applications of logistics 4.0 on different industries. The methodology enabled to gain an overall understanding of logistics 4.0 and development in different industries to improve efficiency and customer satisfaction with the help of Industry 4.0.

The research tries to answer following questions:
1.What different technologies are associated with Logistics 4.0, their impact and uncertainties associated with them?
2. How will Logistics 4.0 impact different functions of the industry?
3. What are the challenges associated with implementation of Logistics 4.0 and what are its applications?

OVERVIEW

In a current global market, technological innovation and customer demands for advanced technology and services promote the emergence of new challenges, which is changing industry drastically. This transformation will definitely influence how organizations will be managed according to the new incentives, customer satisfaction, environmental and context configuration. Although some sectors like the automotive, technology and biology industry, with the innovation and overall increased efficiency taking lead on the industry changes, others will have to follow technological evolvement. This change is being done very quickly, allowing us to touch on the new industrial revolution, commonly known as the fourth industrial revolution (Industry 4.0). This

new technological revolution is causing profound

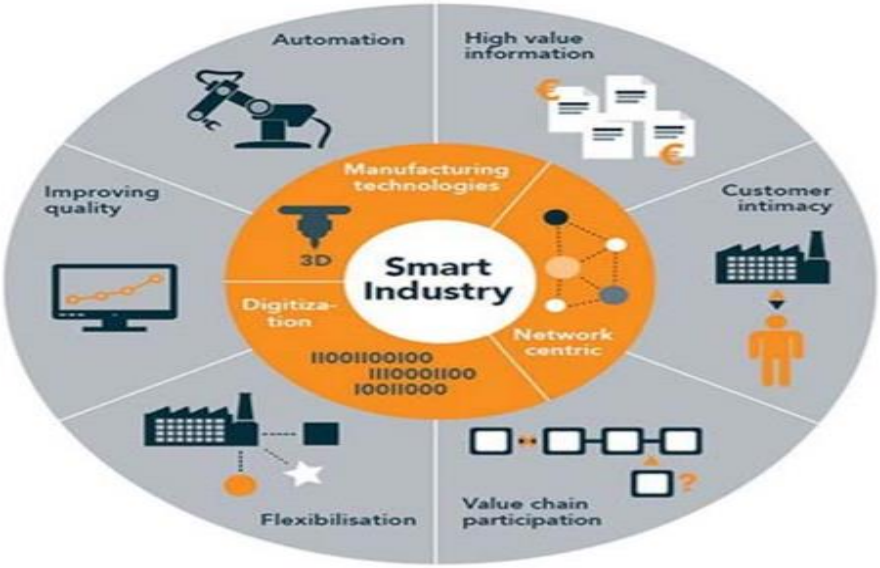

Fig. Industry 4.0 Concept [1]

changes in the industry as well as in society in the economic outlook, in how work is planned and operationalized, the way of human-machine interactions, among other situations. Although, the ability to correctly interpret and perceive these changes will allow us to gain a higher level of awareness and a capacity to monitor and read the markets, which will help to promote the alignment of the organization with this pattern of paradigm change. Therefore, the gained insights will help in the interpretation of the clients' behavior towards choosing products and services, and the appearance of new paradigms such as shared economy, additive manufacturing, social networks, collaborative innovation, digital platforms among others that are contributing and enhancing the pace of change.[1]

INDUSTRY 4.0

Industry 4.0 is originated from a German government project that promotes the computerized manufacturing in 2011. Industry 4.0 is also referred to as the "fourth industrial revolution" since the first industrial revolution that took place in the 18th century. The first industrial revolution improved the productivity of the iron and textile industries by using steam power, and the second industrial revolution took place just before WWI and created reduced manufacturing cost by using electric power to create mass production. With the development of personal computers and the internet in the 1980s, the third industrial revolution transformed the economic landscape.[2] After the term Industry 4.0 was revived in 2011 by the German economic development agency, the fourth industrial revolution builds on the third, leveraging emerging technologies (or Industry 4.0 technologies) such as Additive Manufacturing, Advanced Robotics, Artificial Intelligence, Autonomous Vehicles, Blockchain, Drones, Internet of Things, etc.

Unlike the previous three, Schwab [3] argues that the fourth industrial revolution is fundamentally different because it leverages connectivity and communication among billions of devices. These emerging technologies along with voluminous real-time data will transform the manufacturing and service operations along a global supply chain, and change the interactions between humans (consumers and supply chain partners) and machines. Currently, many companies are exploring

ways to create value by exploiting these Industry 4.0 technologies. According to the McKinsey Global Institute, operations, and equipment optimization in the factory setting can generate up to $3.7 Trillion of value by 2025 [4]. More recently, Frank et al. [5] examined different economic and technological drivers for companies to adopt various Industry 4.0 technologies. Based on a survey of 92 manufacturing companies, they find that computerized (or smart) manufacturing is a key driver.

LOGISTICS 4.0

Logistics 4.0 is a narrower term than Industry 4.0 in spite of having similar assumptions. "Logistics 4.0" can be defined by two approaches. As regards the short-term approach Logistics 4.0 is defined as firm and mutually related processes between independent members with the use of large amounts of data. As to the medium-term approach Logistics, 4.0 is defined as autonomous, self-organizing systems within other systems. Logistics 4.0 is logistic systems which consist of independent subsystems. The behavior of the subsystems depends on other surrounding subsystems. This term also means process automatization and organization and the Industry 4.0 support. The Logistics 4.0 definition combines two aspects: processual (supply chain processes are a subject of the Logistics 4.0 actions) and technical (tools and technologies that support internal processes in the supply chains). Logistics 4.0 has the aim to enlarge the supply chain members' efficiency and performance. The supply chain is based on decentralized decision-making structures. The above objectives are to be achieved by performing vertical integration of members related to hierarchical subsystems in the organization and horizontal integration related to the cooperation between external legal entities. Due to the similarities between the Logistics 4.0 and Industry 4.0 concepts, the former one is based on its typical features, i.e. digitalization, automatization, networking and mobility.[6] The Logistics 4.0 technologies are based on using drones, sensors, self-steering vehicles, Big Data, GPS. virtual reality glasses, intelligent transporters, gates, forklifts and automatic vehicles [7] are the concepts that are dedicated to different industries. The Logistics 4.0 concept implementation advantages are savings in human work, high standardization of linking logistic functions to information pieces and the use of equipping logistic enterprises with the newest technologies. The disadvantages are high investment costs and the IT supply network possession requirement.

TECHNOLOGIES ASSOCIATED WITH INDUSTRY 4.0

Table: Technologies Associated with Industry 4.0 [8]

The Technology	The Impact	The Uncertainties
Physical Internet (based on IoT)	• Improved supply chain transparency, safety and efficiency • Improved environmental sustainability (more efficient resource planning)	• Social expectations around data privacy and security may change • Regulation around data security and privacy may increase or be enforced more stringently • The sector's willingness and ability to invest in collaboration • Whether international bodies will drive standardization

Data Analytics	• Improvements in customer experience and operational efficiency in operations • Greater inventory visibility and management •Improved 'predictive maintenance'	• Rate of development of data processing capacity is unclear • Question marks around data security • Social expectations around data privacy and security may change • Regulation of data security and privacy may increase or be enforced more stringently
Cloud	• Enabling new platform-based business models and increasing efficiency	• Development of costs unclear (once a certain scale is reached physical data centers still tend to be cheaper) • Uncertainties around data security
Blockchain	• Enhanced supply chain security (reduction of fraud) • Reduction in bottlenecks (certification by 3rd parties) • Reduction of errors (no more paper-based documentation) • Increased efficiency	• Rate of adoption uncertain • Unclear whether one or two dominant solutions will emerge or multiple competing solutions
Robotics & Automation	• Reduction in human workforce and increased efficiency in delivery and warehousing • Lower costs	• Speed of technology development unclear
Autonomous Vehicles	• Reduction in human workforce • Increased efficiency in delivery processes	• Regulatory environments not currently in place in most countries • Liability issues not yet clear • Ethical questions remain especially in relation to emergency situations
UAVs/Drones	• Increased cost efficiency (use cases: inventory, surveillance, delivery) • Workforce reduction	• Regulation in most countries not sufficient for commercial use in public areas like delivery • Safety and privacy concerns may hamper market acceptance
3-D Printing	• Lower transportation demand • Transported goods would mostly be raw materials	• Speed, scale, and scope of uptake by customer industries still unclear

IMPLICATIONS OF LOGISTICS 4.0

The demand for high-individualized and personalized products and services is increasing continuously. To meet the demand inbound and outbound logistics have to adapt to this changing environment. Due to the increasing complexity, it simply cannot be handled with ordinary planning and control practices.

"Smart Logistic" is a logistics system, which can improvise on the aspects of the flexibility, the adjustment to the market changes and will make the company be closer to the customer needs. This will lead to improvement in the level of customer service, the optimization of the production

and will lower the prices of storage and production. As "Smart Logistics" will change according to the actual technology, it has a time dependency and hence it is quite essential to define the state of the art of the technology. This new paradigm comes as the result of increasing use of Internet that enables the communication between machines and humans in real time. Logistics 4.0 shall rely upon and use, the following technological applications:

1. Resource planning

The resource planning management procedures, according to the adoption of the Industry 4.0 viewpoint, will enhance the overall productivity, flexibility and agility to the changes that might occur in the supply chains. The proper alignment and integration between the main actors of the supply chain, and the increasing level of visibility and transparency will ensure an adequate forecast of resources (people, materials, equipment) which will potentiate the optimization of resources/processes, the time to market alignment and raise the asset employment [9]. The degree of sophistication required will increase significantly, throughout the IoT and also the degree of specialization of human resources. The human resource (HR) competencies are going to change dramatically due to the continuous adoption of the Industry 4.0 paradigm. As the necessity of computational and analytical skills, as well as the technological systems integration is increasing, it will change the common profiles of the HR in industry.

2. Warehouse management systems

The warehouses are a vital hub in the flow of goods within a supply chain. But, in today's economic climate, they also have to serve as a key source of competitive advantage for the logistics providers. The adoption of the Industry 4.0 paradigm is going to introduce remarkable changes in the way warehouse works. The level of integration required among the different actors and stakeholders of the supply chain will guarantee a total coordination and alignment between all the value chain phases. Therefore, as an example, transports will be able to communicate their position and predicted arrival time to the intelligent warehouse management system, which will be able to select and prepare a docking slot, resulting in optimized just-in-time and just-in-sequence delivery. Also, the RFID sensors will reveal what has been delivered, and send the track-and-trace data of the entire supply chain. The WMS will automatically attribute storage space according to the delivery specifics, and request the appropriate equipment to move the goods to the right location autonomously. Once pallets are moved to the assigned location, tags will transmit signals to the WMS to provide real-time visibility into inventory levels, which could prevent costly out-of-stock situations, as well as enhancing the management decision capability towards adjustments that might be needed to increase clients' service level.[1]

3. Transportation management systems

A transportation Management System (TMS) is part of the supply chain management (SCM) specifically centered on the transportation logistics. A TMS enables interactions between an order management system (OMS) and distribution center (DC) or a warehouse. With the help of TMS companies control and manage ever higher freight costs; integrate with other supply chain technologies (like Warehouse Management Systems and Global Trade Management Systems); and handle electronic communications with customers, trade partners, as well as carriers. TMS has become a popular choice for companies of all sizes and across all industries as their breadth of offerings has expanded to incorporate these and other capabilities. With the massive use of IoT and the inevitable upcoming of Industry 4.0, a TMS system is an essential element in the concept of Logistics 4.0. Logistics 4.0 uses real-time and inline data to achieve more efficiency and effectiveness in a logistic process. A TMS system is important so that a company can use GPS technology to accurately locate its own vehicles while they're on the road, monitor freight

movement, negotiate with carriers, consolidate shipments, and use the platform's advanced functionalities and also to interact with Intelligent Transportation Systems (ITS).

TMS are redefining companies' strategies as most recent TMS offer better end-to-end supply chain visibility and for that they are being adopted among small-to mid-sized companies. With the increased use of mobile devices and services TMS solutions will be integrating smartphone applications that drivers can use to create 'breadcrumb visibility' of where specific trucks are at any given time. IoT and TMS will play an increasingly important role in transportation and logistics industries [10]. More and more physical objects are equipped with bar codes, RFID tags or sensors, transportation and hence logistics companies can conduct real-time monitoring of the movement of physical objects from the origin to their destination across the entire supply chain. As sensing, networking, communication, and data processing capabilities of vehicles are increasing, IoT technologies can be used to enhance these capabilities and share under-utilized resources among vehicles in the parking space or on the road. As an example, IoT technologies nowadays make it possible to track each vehicles' existing location, monitor its movement, and predict its future location.

4. Intelligent transportation systems

Intelligent Transportation System (ITS) is a field that interoperates in different fields of transportation systems like transportation management, control, infrastructure, operations, policies and control methods. ITS adopts some of the new technologies like computing hardware, positioning system, sensor technologies, telecommunications, data processing, virtual operation and planning techniques. The idea about virtual technologies integration is a novel issue in the transportation field and it plays a crucial part to overcome the issues in global world. ITS's are important for increasing safety and reliability, travel speeds, traffic flow as well as for reducing risks, accidents rate, carbon emissions and air pollution. ITS provides solutions for cooperation and reliable platform for transport. Electronic Toll Collection, Highway Data Collection, Traffic Management Systems, Vehicle Data Collection, Transit Signal Priority, Emergency Vehicle Preemption are some applications of ITS. ITS is not limited for vehicular traffic, it also provides other services and can be implemented in navigation, air transport, water transport and rail systems. The most recent generation of ITS, generation 4.0, makes use of multimodal systems incorporating personal mobile devices, vehicles, infrastructure and information networks for system operations as well as personal contextual mobility solutions [11]. A fully operational ITS environment can be used for purposes like intelligent truck parking and delivery areas management, multimodal cargo (i.e. supporting planning and synchronization between different transport modes during logistic operations), CO_2 footprint estimation and monitoring, priority and speed advice (i.e. saving fuel consumption, reducing emissions and heavy vehicle presence in urban areas), eco-drive support (i.e. supporting truck drivers to adopt a more energy efficient driving style and reducing fuel consumption and CO_2 emissions in turn).[1]

CHALLENGES IN LOGISTICS 4.0

In the fourth Industrial revolution, logistics planning has become an integral part of the organisation. The adoption of Industry 4.0 will have a profound impact on supply chain management. Logistics 4.0 will provide speed and high performance by collaborating with the industry 4.0. The strategic planning of logistics resources is very crucial for high performance. However, Logistics 4.0 has some challenges which industries need to overcome.

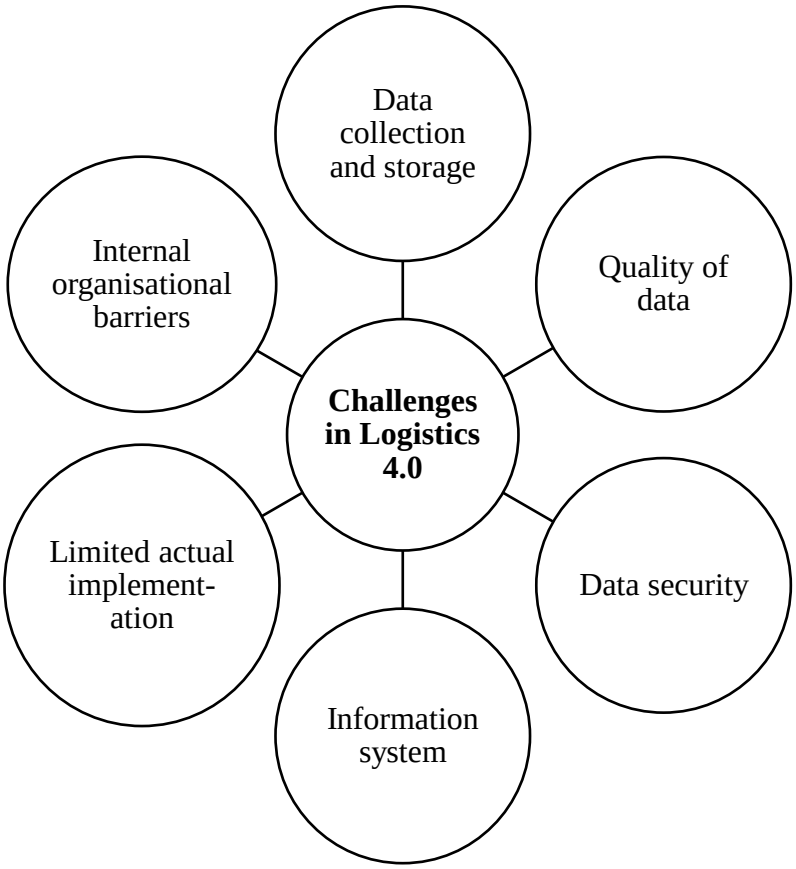

Fig. Challenges in Logistics 4.0

Data collection and storage

Every day new data is coming in every industry consists of important information but there is a need to improve the system to store both the structured and unstructured data. A new generation of storage tools is growing with the increase in their additional performances and in their capacity to collect, store and transmit data. However, this sheer amount of data leaves organizations continuing to face the challenge of aggregating, managing and creating value from data [12]. The data storage systems are still in a developing state and industries are yet to take the full advantage of it.

Quality of data

The quality of output produced by the system heavily depends on the input provided to the system. The data provided to the system must be of high accuracy and reliability. The garbage data must be removed to improve the quality of data of logistics.

Data security

In the logistics industry, companies need to share data constantly to keep logistics processes optimized. However, security issues are a major problem as the data is shared with other departments. A company can lose sensitive data to others and that can create a problem for the company. Because of high-security concerns, companies are avoiding using logistics 4.0 in the industry. There is a need to improve the security standards and norms for high data security.[12]

Information system

Logistics 4.0 needs a reliable and accurate information system. Complex sensors setup is required to gain important insightful information. Industries need proper infrastructure for a reliable information system.

Internal organisational barriers

Internal organizational barriers like manufacturing processes, location of departments create a problem to get the information and difficulty to track the product movement in the company. This creates a problem to implement Logistics 4.0.

Limited actual implementation

Logistics 4.0 is still in the initial phase and a lot of research on the concept is going on. There are only a few companies who implemented the industry 4.0 companies are still not ready to implement logistics 4.0 because of the unavailability of a large number of successful case studies of implementation logistics 4.0.[13]

APPLICATIONS OF LOGISTICS 4.0

Logistics 4.0 has the potential to improve the effectiveness of supply chain management. Some companies are already implementing it with positive results. With the increase in the use of technologies of Industry 4.0, the need of Logistics 4.0 will increase to meet the requirements and the required efficiency of technologies. The few applications of logistics 4.0 are as below:

Improving logistics by using Blockchain

In the food and drug industry, the degradation of quality is one of the major concerns. Many companies are under pressure to maintain the quality of the product. If degradation of quality happens companies need to check the processes used by suppliers, methods, and materials used for production and ways to store the product. The monitoring of logistics in entire supply chain management is complex, time-consuming and costly. Blockchain is used to track the flow and required quality of products like perishable goods. The logistics industry has many parties like manufacturers, suppliers, customers, auditors. Customers can track the movement of goods by blockchain and trace the whole chain of product manufacturing. Data cannot be changed easily in the blockchain so it helps auditors to audit the system. The diamond industry has the problem to track the movement of the diamond. Everledger is using blockchain to track the flow of diamonds. The record of each diamond is updated as it changes the hand.[14]

Smart transportation

Smart transportation techniques like autonomous vehicles and smart city projects will help to operate and maintain the system efficiently. Austria is an example of the implementation of smart transportation technologies. Autobahn and Highway Financial Stock Corporation (ASFiNAG) of Austria used Cisco's Connected Roadways solutions providing the Internet of Things (IoT) solution with the help of sensors. The highway monitors itself, send information to drivers and predict traffic to ensure the safety and clear lanes.[15]

Smart shelves for retail stores

Smart shelves are wireless inventory control systems with weight sensors. The weight sensors constantly monitor the weight on shelves and if the weight is reduced to the lower limit it gives signals for stock replenishment. It also triggers the back end system about the misplaced items. It helps in real-time inventory management with increasing customer satisfaction. It ensures nonstop shopping and an increase in sales.[16]

Wearable medical devices

The diagnostic care and pharmacy services in developing countries are limited because of the unavailability of qualified doctors and perceived low quality of services. Patients visit only a few good hospitals and it makes hospitals overcrowded. It becomes difficult for the doctor to give personalized attention to every patient and that creates a problem for the people. Patients can share their personalized data with their online doctors via telemedicine with the help of wearable medical devices. Medical wearable devices are worn by a person that provides medical monitoring and support for a required time. For example, Apple Watch Series 2 monitors data which can help to gain insights about the person's health. Cincinnati-based Enable Injections developed the enFuse device to enable patient-administered subcutaneous delivery of high-volume therapeutics outside of the hospital. The on-body drug delivery platform has a self-contained drug transfer system that is compatible with standard syringes and vial container formats [17]. This helps in the logistics cost and also increases the reaction time of a system to deliver the product to the customer.

CONCLUSION

1. Since the fourth industrial revolution is taking shape, its common agreement in organizations and businesses is that there is a need for improvement in technologies used in logistics.
2. Both industry 4.0 and logistics 4.0 are complex systems that will need great technological and environmental changes. Companies need to understand and analyze the current market need and use relevant and effective technology.
3. Logistics 4.0 has a capacity to improve the effectiveness of the entire supply chain and it can help to increase customer satisfaction by monitoring the real-time data and providing personalized solutions.
4. There are few challenges to make logistics 4.0 compatible with Industry 4.0 but in the near future the companies will overcome the challenges and use the logistics 4.0 to make the efficient use of Industry 4.0.

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Awareness of Mobile App Related Cyber Crimes: An Empirical Study

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ABSTRACT:
Cyber Crime is rising as an intense risk not only in India but also all over the world. There is misuse of data from mobile phone apps, computers and laptops. The web world has its advantages and disadvantages. Everybody has access to the internet. Sharing of data through various platforms is quite frequent. People have so many ways to get data but are unaware that the free sharing can cost their credentials or privacy may be hindered. This study measures the awareness of cybercrimes through apps installed on smart phones. Random sampling method has been used to collect the data and statistical analysis is done. We have found that majority of respondents are aware about the mobile apps related cybercrimes. However, they do not know the preventive measures to avoid mobile apps related cybercrimes.
Keywords: Cyber Crime, Apps, Privacy

INTRODUCTION:

People's perception and attitude towards computer ethics and information security significantly affect the way they use information technology (Mansur Aliyu.et.al, 2010). “With data costs falling by 95 per cent since 2013, India will see internet users rise by about 40 per cent and number of smartphones to double by 2023” (McKinsey, 2019). Indian mobile data users consume 8.3 gigabits (GB) of data each month on average, compared GB for mobile users in China and 8-8.5 GB in advanced digital economy of South Korea. Indians have 1.2 billion mobile phone subscriptions and downloaded more apps 12.3 billion in 2018 than residents of any other country except China (ET, 2019). Today’s young generation has made Google and Facebook part and parcel of their everyday affairs but many are unaware of the damage it may cost through the free data. In exchange of the free data it accesses the data available on the apps. People connect with each other through emails, chat rooms, and social media platforms etc. With many mobile paid apps available people are unaware of the damages it may cost to them. Initially many apps offer free services, however later charge for the same services. Right from astrology, dating to banking, shopping and education many options are available. These apps ask for information such as email address. Email address is a way of getting first-hand information and if the email address is not secure, it can leak many crucial information of the users. The World Wide Web may help citizens to overcome various issues but everything has its advantages and disadvantages. Many studies found that there is an increase in the fictitious world of people and they have forgotten the real world and are happy to stay and live in their fictitious world which in case is hampering the self of human beings. Parents, academicians and policy makers should spread awareness about cybercrimes among the millennial because they get victimized easily and are prone to commit crime through computers and mobile apps.

LITERATURE REVIEW:

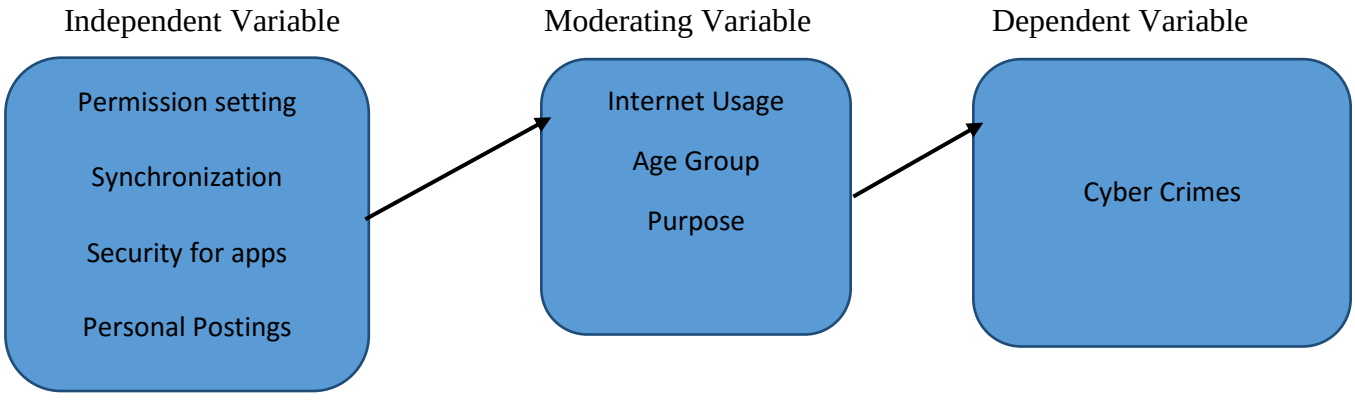
D A Prathima Mathias and Suma B, (2019) said that the students with higher capabilities must be persuaded not to commit cybercrime. Moreover, they should know about the data innovation and digital wrongdoing. Rajender.et.al, (2017) has explored the different facets of cybercrimes in the technology driven world and preventive measures to be taken to avoid these cybercrimes. Bamrara.et.al, (2012) has measured the level of satisfaction of customers with respect to electronic banking and targeted those customers who have been victims of cybercrimes. The author identified the essential ingredients of successful BCM implementation based on experiences of banks in India. It is important for the organizations to make sure that how far the customers are satisfied with the services provided. The lack of vigilance among social networking users also results in their becoming a weak link for attackers. Hackers have used profile information on social networking sites to create targeted social engineering attack. Shantanu Ghosh, (2011) saw that attackers launched targeted attacks against a diverse collection of publicly traded, multinational corporations and government agencies, as well as a surprising number of smaller companies. Shantanu Ghosh says that smartphones, instant messaging and social networks are becoming the new playground for virus and malware attacks in India. Attackers are now embedding malware into apps that are available for download on app stores of smartphone makers. Initially the apps look authentic performing the same thing for purpose the user downloaded them but in background, they function in wrong way. Indians have the highest confidence levels in the Asia-Pacific-Japan region regarding the use of third-party software on their mobile phones. Ghosh said that most Indian companies are adapting to mobile computing and social networking in a big way; they needs to be watchful about the vulnerabilities and threats on these platforms. McLean and Susan, (2011) suggested that organizations should treat cyber risks as strategic business risks as opposed to purely IT risks and consider what level of risk the organization is prepared to accept. Mani.et.al (2014) says a better understanding of the information security threats, awareness, and risk management standards in real estate sector can reduce the risk of information leakage. There is a lack of understanding about the true magnitude of malicious cyber activities and its impact on the real estate sector.

RESEARCH GAP:

There has been a considerable length of discussion on the cybercrimes through internet hacking websites, via personal computers but there is not enough focus on mobile apps related cybercrimes. Now a day's mobile phones are no more safe. Just by sharing a link one's phone may get affected and can cause many tremendous damage to the person data. Many researches have been done pertaining to cybercrimes via laptops and computers but very few researches caters to the segment of cybercrimes through apps because people are unaware about the permission settings of the phone and apps itself. Life has become simple for transaction just by entering the CVV behind the Card and the payment is done. But very few are unaware that when we download the apps for use there are several permissions sought to access data on our mobile phones. Until we do not grant permission, the app may not work. This is the first step towards privacy hindrance. We accept the permissions because we want mobile apps to work and hence we ignore the permission settings part which is very crucial. Hence, this research paper attempts to study whether people are aware of the crimes caused by the apps installed on phone or while sharing via different platforms.

Sr. No.	Gaps Identified	Variables selected for the study
1.	Many people are unaware of the permission setting being tampered during installation of the apps.	Unawareness of the permission settings in apps causes cybercrime.
2	For the security purpose, it has been seen that many users synchronize the phone data with the mail ids so that they can access it anywhere.	Unawareness about the synchronization settings leads to leakage of data in various platforms which are prone to cybercrimes.
3	Now days we use so many apps and for security reasons we have passwords but majority people keep on forgetting the password hence they keep the same password for all apps.	Having the same password for multiple applications can also be very harmful and it becomes easy to crack once and the same can be applied to all apps.
4	Many millennials nowadays seek self-attention hence they keep on posting their whereabouts.	Having no knowledge about what to post and not one can also follow you and may take disadvantage of the same.

THEORETICAL FRAMEWORK:



HYPOTHESES:

H_1: People are aware of the fact that cybercrime can be cause through mobile apps.

H_2: Unawareness of permission settings in mobile apps leads to an increase in cybercrimes.

H_3: Unawareness about the terms and conditions of app during installation in mobile phone increases cybercrime

H_4: Unawareness of security of apps leads to an increase in cybercrimes

H_5: Unawareness of preventive measures towards cybercrime through mobile apps.

Research Objectives:-

- To check awareness in people regarding mobile apps related cybercrimes.
- To study the perception of people towards cybercrime caused by mobile apps.
- To study the factors by which the people fall prey cybercrime.

RESEARCH METHODOLOGY:

The study area was Mumbai, Thane and Navi Mumbai regions. Targeted sample size was 250. But only 180 responses were received. Out of which 120 were from male respondents and 59 from female. One respondent was not willing to share the gender status. So the analysis was conducted on 180 responses. Only the respondents' perspective has been considered to check the awareness regarding mobile apps related cybercrimes. Primary data was collected from respondents with the aid of structured questionnaire. Questionnaire had combination of open ended and closed ended questions. Data analysis is conducted by simple statistical analysis.

DATA ANALYSIS AND INTERPRETATION:

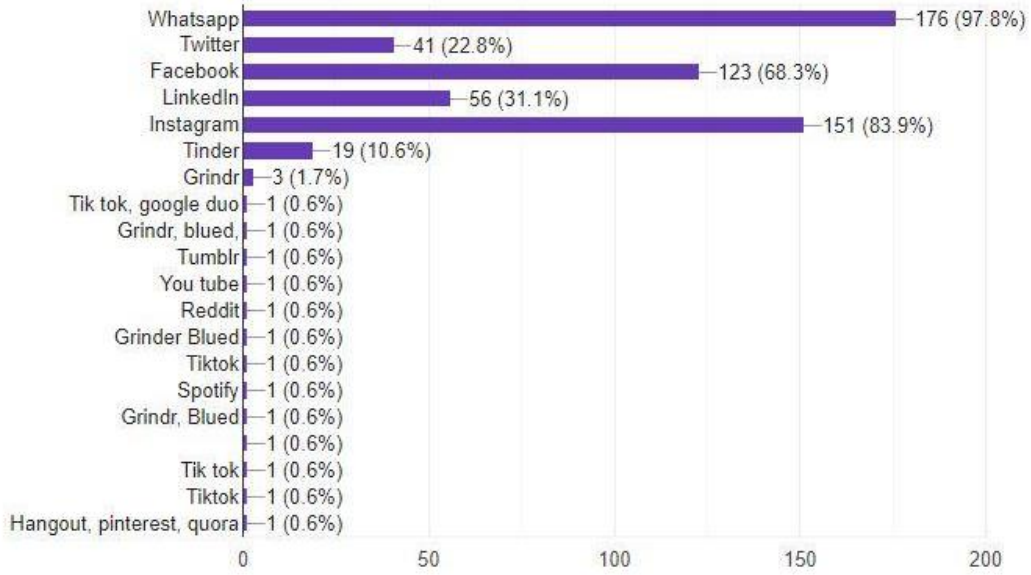
1) Findings:

- All the respondents have smart phone with mobile data.
- All the respondents who has undertaken the survey revealed that male respondents were 120 while female respondents were 59. One respondent was not willing to share the gender status.
- According to the conducted survey, 1.67% of the respondents were from age group of 15-18, 71.67% were of age group 19-25, 14.44% were of age group 26-30, 5.56% were of age group 31-35 and 6.66% were above 36.
- 77% of the respondents use the same email id for all the applications for creating an account.
- 73.3% of the respondents do not have the same password for different app.
- Only 50% of the respondents understand the difference between fake and real apps.
- Almost 48% of the respondents do not write down the passwords while 42% do write it down somewhere and 10% of the respondents write the password sometimes.
- 38% of respondents spend 1-3 hours on mobile using internet. 28% of people use mobile data for more than 5 hours. While only 11 percent of respondents spend less than 1 hour on mobile data. 23% of people spend 1-3 hours on mobile data.
- Apart from social media apps respondents use apps for different purposes like for entertainment they use TikTok, Hotstar, and Amazon Prime Video. Jio Music, Jio cinema, Jio Tv, Netflix, Voot. For shopping, they use Amazon, Flipkart, Myntra, OLX, Club Factory, Shein, Nykaa, Lenskart, Big Basket, Zomato and Swiggy. For banking, they use google Pay, PhonePe, BHIM, PayPal, PayTM and for education, they use BYJU, Duolingo, Voot Kids, Google Classroom
- Most of the respondents do understand the difference between fake and real apps.
- 93% of people know about cybercrime but are the majority of respondents are unaware of how to prevent it.
- 83% are aware of the fact that cybercrimes can be done through mobiles apps too.

- 55% of the respondents knows where they can report cyber-crime case. While 45% of the respondents do not know about the same.
- 78.3% of respondents are aware about possible threats caused because of viruses, malware, threats, ransomware etc. and 22 % are not aware about the possible threats.
- Majority of the respondents 90.6% are interested to know more about the cyber-crime.

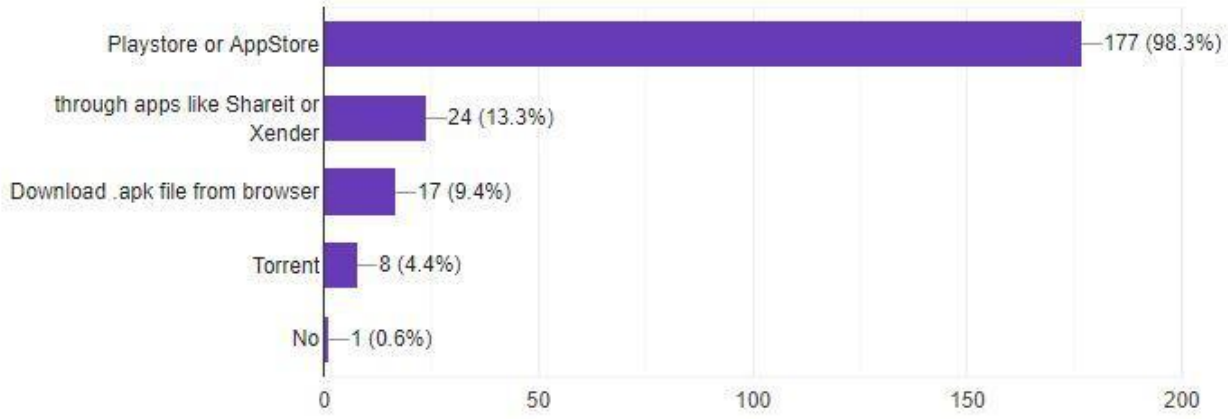
2) Data analysis and Interpretation:

1. Which of the following social media app do you use? (In this question, user may select more than one option)



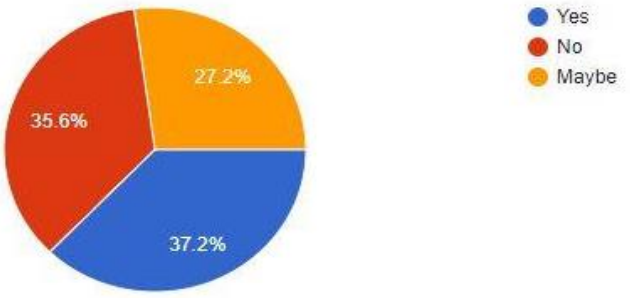
Interpretation: From the above figure, it is inferred that the most used social media app is WhatsApp wherein we can exchange so many other media formats followed by Instagram, Facebook, Tinder, TikTok, Reddit.

2. Form which of the following platforms do you download the apps? (In this question, user may select more than one option)



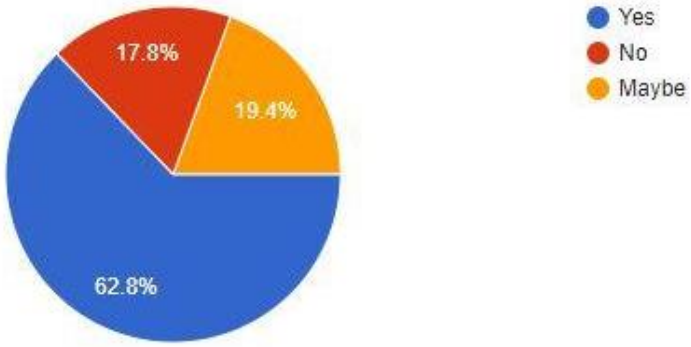
Interpretation: From the above chart it is inferred that majority of the respondents use play store to download other apps. Some respondents also use apps like SHAREit, Xender and Torrent. Some of the respondents download the .apk file of such app from the browser.

3. Do you grant all the permissions that allow the app to use the feature of your device blindly?



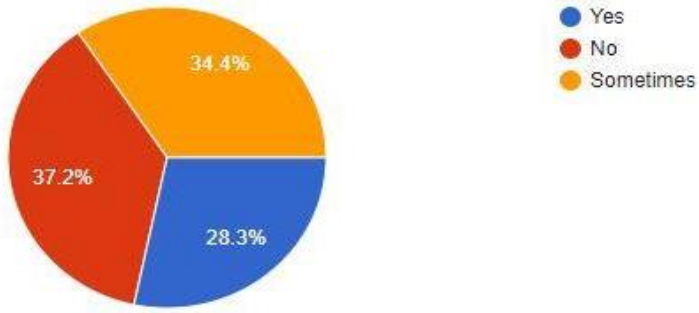
Interpretation: From the above pie diagram, it is inferred that majority of the respondents blindly grant all the permissions that allow the app to use the features of the mobile followed by 35.6% do not grant the permission, while 27.2% may or may not grant all of the permissions.

4. Once the app is installed in your device, do you have controls for the permissions?



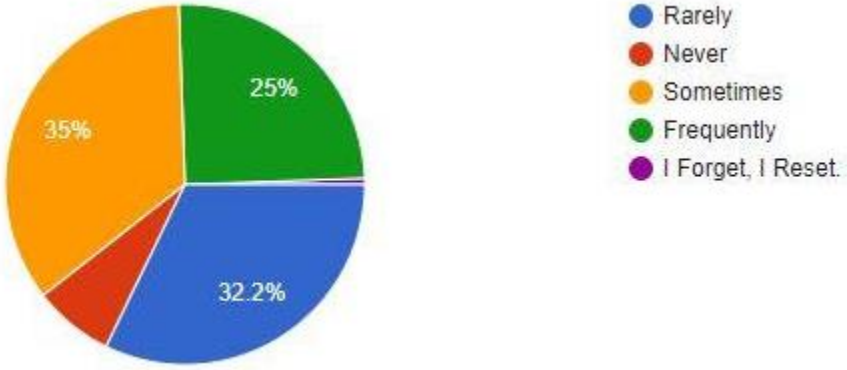
Interpretation: From the above chart, it is inferred that majority of the respondents control the permission an app can access after the installation of the app. Some respondents are not aware of the setting to control the permissions.

5. Do you read all the terms and conditions of app during installation in your phone?



Interpretation: Form the above chart, it can be inferred that there are almost equal number of people who read and who do not read all the terms and conditions of the apps during the installation in the phone. People should be advised to read the terms and conditions before installation so they do not face any problems in the future.

6. How often do you change your password?



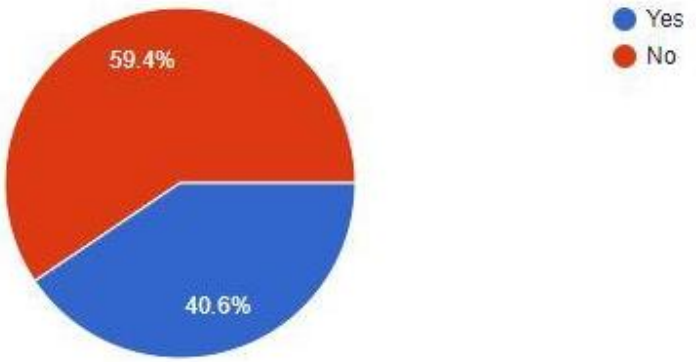
Interpretation: From the above chart, it is observed that 35% of the respondents change their passcode sometimes, followed by 32.2% which change it rarely. 25% of the respondents change password frequently. 6% of the respondents never change the password. Lastly, 1.5% who forget and reset the passwords.

7. How often do you update mobile apps?

Interpretation: The above figure shows that the majority of the respondents have the feature of the automatic update when connected to the Wi-Fi. Some respondents update the mobile apps

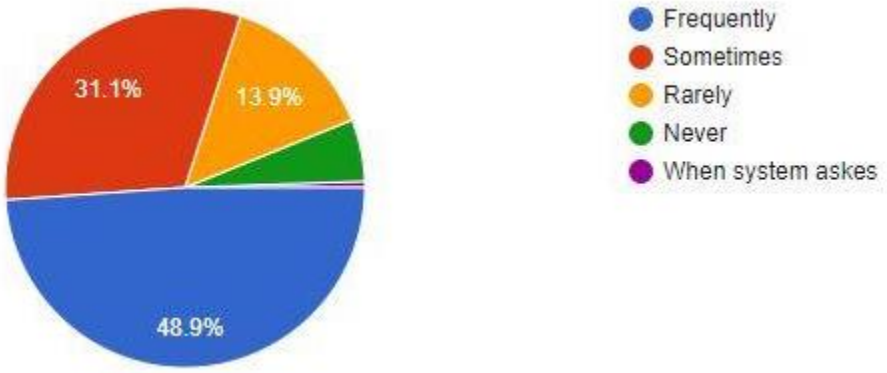
sometimes. While less % of respondents update app rarely or update app often. Very less % of respondents update apps when asked by the app or ignore the update or never update.

8. Do you install app security software available for preventing your apps from viruses?



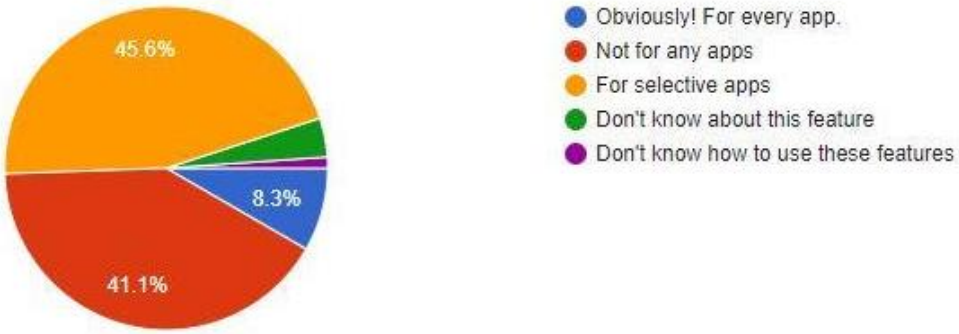
Interpretation: Above figure, shows that almost 60 % of the respondents do not install software, which are available for preventing apps from viruses while 40%, do install such software.

9. Do you update your mobile operating system regularly?



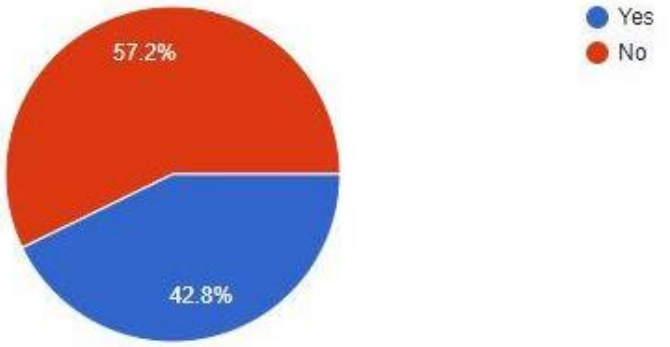
Interpretation: From the above chart, it is inferred that 49% of the respondents update the mobile operating system frequently followed by 31% who update it sometimes then 40% of the respondent who do it rarely and followed by the remaining respondents who never update the mobile operating system.

10. Do you use third party apps or any other security features in you mobile to protect your apps?



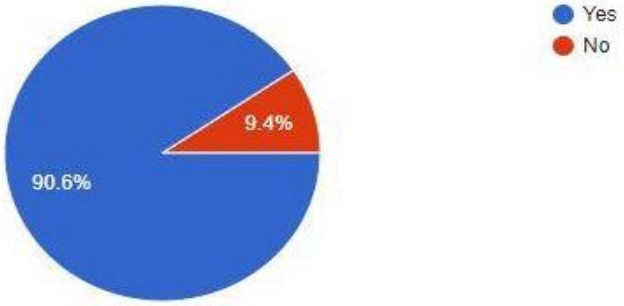
Interpretation: Third party app is an application created via developer who is not the manufacturer of the phone. Each third party app has its own security and approval process. So these apps contains certain risk people use more third party apps because it provides more freedom and faster speed and the approval process is also not that much strict. Most of the people use these third party apps for security purpose. Survey states 45.6% respondents use it for selective apps. 41.1% not use at all. 8.3% use for every app. While, very less percentage of respondents do not know either about these apps or about how to use these apps.

11. Do you know what safeguards measures are adopted to prevent cybercrime through mobile apps?



Interpretation: From the above chart, it can inferred that majority of the respondents don't know about the safeguard measures adopted to prevent cyber-crime through mobile apps.

12. Are you interested to know more about how to prevent cybercrimes through mobile apps?



Interpretation: Majority of the respondents are willing to know more about cybercrimes through mobile apps.

CONCLUSION:

- Majority of respondents download app from play store, which might not always authentic source to get the apps.
- When asked about awareness of cybercrime results revealed that people are aware about the cybercrimes happening through mobile phone. Hence, we accept H_1, that is, people are aware about the fact that cybercrimes can be cause through mobile apps.
- Question regarding granting the permission of apps through mobile phones revealed that majority of respondents grant the permissions to use our data on mobile blindly. Hence, we

accept H_2, that is, unawareness of permission settings in mobile apps leads to an increase in cybercrimes.

- Question regarding to the reading of terms and conditions of mobile app during installation in mobile phone reveals that majority of people do not read the terms and conditions. Therefore, we accept H_3, that is, unawareness about the terms and conditions of app during installation in mobile phone increases cybercrime.
- Question regarding security of apps revealed that very few people have security for different apps or selective apps. Hence, we accept H_4, that is, unawareness of security of apps leads to an increase in cybercrimes.
- Question regarding safeguards measures to prevent cybercrime through mobile apps revealed that majority of respondents are unaware about how to prevent it. Hence we accept H_5, that is, unawareness of preventive measures towards cybercrime through mobile apps.

RECOMMENDATIONS:

- It is recommended that awareness should be created among people so that they do not easily fall prey to the cybercrime.
- People should check the permission of the apps and should read terms and conditions before installing it blindly.
- Always go through the instructions given by the developers of the app to be installed. Also, go through the comment given by existing users in the comment section on the platforms like Play store or App store for the threats.
- Always check the authenticity of the links given in the social media messages as these links might lead to phishing websites.
- Most people have misconception that if the app is available on the official store of Google or Apple, then it is secure. However, that is not the case. Recently there have been incidences where applications on Google Play were found to contain malware, which misused user's data. If you feel that an application is requesting permission that it does not need, then do not install the app or decline those permissions. If Swiggy is asking permission for flashlight app or to read your received message or record audio then you should know that something is problematic with the app.
- Many cafes provide their customers with free internet access, which may seem convenient but might be used by attackers to steal your confidential data as they lack proper security measure.
- In order to deal with cyber threats, organizations need to put in place a multi-layered strategy that covers prevention, mitigation, and reaction and that takes a holistic approach, focusing on people, processes, and systems.

A study of adoption for Rooftop solar in MSME in Mumbai and Pune region: A case study approach

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Abstract
The MSME sector has shown impressive potential, MSME plays a vital role in shaping the economy by creating jobs opportunity. The globalization has opened avenues for outsourcing , ancillary units and create ancillary production houses. However, MSME also faces a number of operational and performance challenges to the growth story , cost of operation, talent (acquisition and retention and retention) and credit availability to name a few roadblocks for growth. There is inadequate capital infusion compounded by insufficient planning or inputs on credit requirement resulting is cash flow concerns impacting the profitability. In the VUCA (Volatility, Uncertainty, Complexity and Ambiguity) world , MSME is most challenged unit with fixed expenses on the rise, operating margin strain , employees (including training and development) are some of challenge for growth.

MSME will be a new class of Prosumers, Producers and Consumers to install and benefit from clean and green power. The primary objective of this research paper is to sensitize the MSME entrepreneurs to embrace sustainable power generation methods to reduce the energy bills and how it will contribute to techno economic welfare of the region and the country, considering that an energy generated by distributed generation is directly proportional to resources saved. In this descriptive and exploratory research, the researcher will be selecting five MSME companies and will try to understand the buyer behavior and policy enabler and how they plays an important role to promote and motivate the installation of Rooftop solar on the plant. The paper after introducing the concerns of the MSME entrepreneurs, will emphasis to know how the reducing operating costs resulting in increased profits and will understand how prospective entrepreneurs can conveniently embrace the solar rooftop solutions and enjoy the benefits of saving and ecowarriors status. The researcher will be suggesting and generating a techno-commercial model based on certain selection criteria to act as an enabler in decision making for MSME. The Techno-commercial model is designed to work with MSME's to address the concerns of power. The model attempts to work with MSME's to understand and reduce power aspect of the operating cost. The secondary research has also plan to cover following aspects like Solar Technology and solutions, Solar Rooftop Policy in state of Maharashtra, Finances , Awareness and Cost benefit ratios etc.

Keywords: Technology Acceptance Model, Rooftop Solar, Solar Installation Resistance, MSME profitability

1. Overview of Rooftop Photo Voltaic Installation (RTPV)

The most convenient way to generated power is optimum usage of roof to install solar panels. The power generated by this method is called distributed generation, Distributed power generation systems are small power generating units installed near the consumption point to minimize losses caused due to transmission or distribution of power, the distributed generation minimizes the power lines losses and a optimum way to harvest renewable energy. (Pandey & Arora, 2016) Technological developments and mass production of

photovoltaic (PV) has resulted in drastic downward trend in cost of the modules, this has stimulated the adaptation of PV solar installation across the globe, annual solar PV installation in 2018 is 109 GW (109,000 MW) . (Osborne, 2019). The studies done on estimation of solar power generation through installation of PV on roof top power city specific, Mumbai , there is a potential to install 2190 MW. The data is generated based on the use of land and spaces in public domain and building footprint area based on GIS imaging and overlaying the simulation software like PV Syst. (Rhythm & Rangan, 2015).

The study of PV potential on the roof available for installation of roof tops solar with direct impact on commercial and economical perspective is not address. In another study of various buildings and utility features affecting the use of building for PV on the roof top in Kingdom of Saudi Arabia and environmental assessment of rooftop PV with uses of tools such as PV syst, RET screen will be helpful for system design calculations (Asif, Hassanain, & Nahiduzzaman, 2019).

There is a gap in research as there no specific study which covers the techno economics assessment and commercial advantage of adoption of RTPV. This study is to address the gap and contribute on this subject. It aims to create a model utilization of roof and potential area available for PV installation for MSME, the model is based on 4 installation in MSME with different types of building roofs in Mumbai and Pune region. It also plans to undertake detailed commercial feasibility of PV application on building rooftops considering both Government policy and utility tariff post installations.

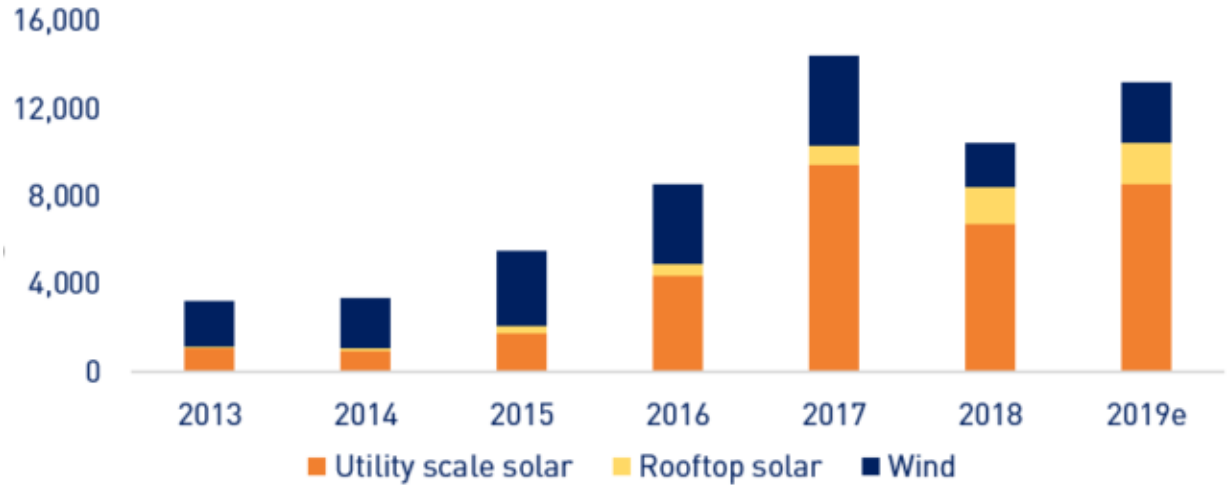
2. Roof top theories and focus

This is a qualitative research based on the MSME point of view, with an intend create the technology adaptation model for stake holder in rooftop solar PV inclusive of MSME, Financial institute, financial planners and solar EPC companies . The buying decision for mass penetration of technology or concept in the society are based on action are performed under guidance of social norms, rules and other points like goals, purpose. The study helps in understanding the buying patterns and emotions in purchase. (Behura, 1999).

The Distributed Generation power through Roof top Solar PV will strength the Distribution Grid creating surplus energy to be distributed to new industries and unelectrified villages reducing the grid outages and increasing the performance of the grid. The concept of distributed generation operates in two ways (i)reduce the load on the utility , (ii) reducing the transmission and distribution losses creating an efficient and optimized distribution network. This importance of electricity was enabler to United Nations Sustainable Development Goal 7 "ensure access to affordable, reliable, sustainable and modern energy for all" (United Nations, 2017) This goal reflects the focus of most developing countries on "electrification, [which] is virtually synonymous with modernization of the rural energy sector" (Kumar, Mohanty, & Palit, 2009). The techno-commercial view point in this model will descried the adaptation of technology as solution and importance of Solar Rooftop for MSME. This research is based on site survey as assessment of utility bills as received from MSME in Mumbai and Pune region. The qualitative approach based on 4 parameters, (1)Area of the roof available, (2) solar modules installation , (3) Electricity bills and (4) Payback analysis

3. Resistance to adaptation of technology / solutions

The benefits of installation of solar is well established India alone has installed and large no of deployment. The utility scale solar installation has grown health 29 % . However concerns due to state policy has affected the Rooftop PV installation.



Sources: Bridge to India (Nandamuri, 2020)

The facts summarized in the figures that Solar installation is an established technology and installation footprint is growing YOY. Based on another report the manufacturing sector in the highest adopter of rooftop solar with market share of 14 % market share followed by infrastructure 9 %, Education 8% and Textiles and Automotive 7% each. There is a gap in study of installation of rooftop solar with MSME's however in Maharashtra Pune, Aurangabad and Nashik are leading districts in rooftop solar installations. (Renu, Shipra, & Rustago, 2019)

Figure: Annual installation in leading districts in Maharashtra, MW

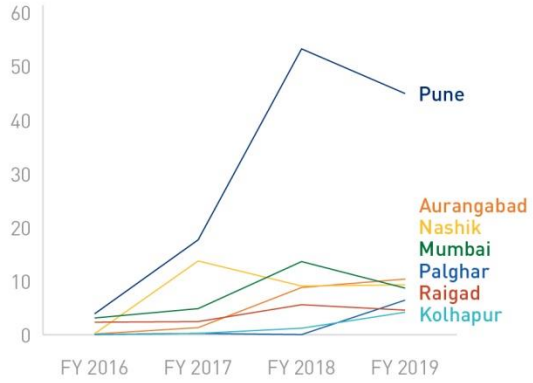
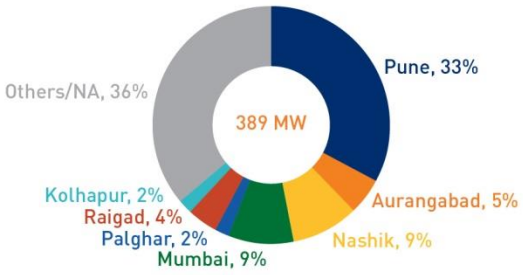


Figure: Total installation in leading districts in Maharashtra, MW



Source: BRIDGE TO INDIA rooftop solar system database

Rooftop solar is established technology and resistance to implementation has to be managed by following factors

4. Effective use of technology

The success of solar is based on controlled materials the primarily Solar Photovoltaic modules, Solar Inverters and structures, Selection of the material the right design and correct installation will maximize generation and improving performance ratio. The concept recommended structure for performance is feasibility study, system design, bill of material, installation, commissioning and testing.

Feasibility Study

The study will act as understanding catalyst for the objective of MSME and installation, it will cover the availability of shadow free area, type of grid connection, connected load, with reference to the feasibility of installation of rooftop project it will determine the practical procedure and financial aspect of installation of rooftop solar project.

System Analysis and design

It is a systematic approach to design and plan based on the findings of feasibility study the process will involve in understanding the requirements recognizing requirements. The use of simulation software, Google earth and global irradiance information the get estimation and generation collate the data to get optimized generation,

Policy

Power in India is a state subject, hence all the state can introduce policy based on the long terms horizon and planning. Government of Maharashtra has initiated net-metering policy in Sept 2015 to encourage the rooftop in the state. However there is a proposed amendment in Maharashtra Net-metering Regulation 2019. The Government will levy a grid support charge for all the installation over 10 KW. All the installation over 10 kW government of Maharashtra proposed to levy grid support charges for using the grid as storage and infrastructure supporting solar installation. This is called Grid Support Charges (GSC) , this charge will put additional burden on the payback depending on the quantum of the GSC.

MERC: Grid Support Charges for Net Metering Systems

CATEGORY	2020-21		2021-22		2022-23		2023-24		2024-25	
	₹/kWh	$/kWh	₹/kWh	$/kWh	₹/kWh	$/kWh	₹/kWh	$/kWh	₹/kWh	$/kWh
HT I HT Industry										
HT	4.08	0.06	4.07	0.06	4.05	0.06	4.03	0.06	3.96	0.06
EHV	3.6	0.05	3.59	0.05	3.57	0.05	3.57	0.05	3.52	0.05
HT II HT Industry										
HT	8.67	0.12	8.57	0.12	8.45	0.11	8.33	0.11	8.19	0.11
EHV	8.19	0.11	8.09	0.11	7.97	0.11	7.87	0.11	7.75	0.10
LT RESIDENTIAL										
LT I(B): LT-Residential										
1-100 units	-	-	-	-	-	-	-	-	-	-
101-300 units	4.46	0.06	4.56	0.06	4.63	0.07	4.69	0.07	4.73	0.07
301-500 untis	7.06	0.10	6.96	0.10	6.83	0.10	6.69	0.09	6.53	0.09
above 500 units	8.76	0.12	8.86	0.12	8.93	0.13	8.89	0.13	8.33	0.12
LT II: Non-Residential										
(I) 0-20 KVA	5.06	0.07	5.16	0.07	5.23	0.07	5.29	0.07	5.33	0.08
(II) >20 KVA and ≤50 KVA	6.66	0.09	6.85	0.10	7.03	0.10	7.19	0.10	7.33	0.10
(III): >50 KVA	8.76	0.12	8.86	0.12	8.93	0.13	8.89	0.13	8.83	0.13

Source: MERC *Mercom India Research*

(MERC, 2019)

The policy has been challenged by the stakeholders, and Solar Project developers. The government proposed to roll back the policy or dilute some norms to make the project feasible. Even thought the roof top solar has multiple benefits including option the reduce the energy foot print to choosing to generate the own power, the state policy has been discouraging net-metering making roof-top solar very difficult to install as observer by MERCOM (Parikh, 2020).

5. Research Methodology

The researcher has collected primary data, from a questionnaire and visit to the site and locations of 4 companies. The secondary data collected from Directorate of Industry, Maharashtra, Ministry of New and Renewable Energy, Delhi. The purpose of the collection of data is to understand the policies, to analysis bases of strength and weakness to find gaps and appropriate solutions to bridge the gaps.

Secondary research : Maharashtra is a progressive state with over 223,000 MSME registered with Directorate of Industries, The region lies between 19° 39' N and 75° 18' E. with predominantly tropical climate. This study is selected based on the selection of MSME or Small installation with based on MSME, office, power consumption patterns, Roof area Available and low grid outage. The location for the study are Mumbai Metropolitan region (MMR) and Pune District.

- Registered MSME's registered in Maharashtra 223000
- Investment by MSME in Maharashtra US $ 8 Billion investment in plant and machinery
- Spread over 6 Business Zone, and 242,000 Sq Km
- Employing over 27 Million work force

The study focuses on two regions MMR and Pune district that houses MSME. The selection of the two regions are based on the opportunity and leading district in Maharashtra. MMR region was selected based on the requirement. The results show a potential of 2190 MW for Mumbai city with median efficiency panels, at an annual average capacity factor of 14.8%. (Rhythm & Rangan, 2015). Pune district was selected based on the leading district in Maharashtra with over 50 MW installed in roof top. (Nandamuri, 2020). However there are no reports on MSME potential in MMR and Pune region.

Opportunity Matrix : MSME potential in Maharashtra

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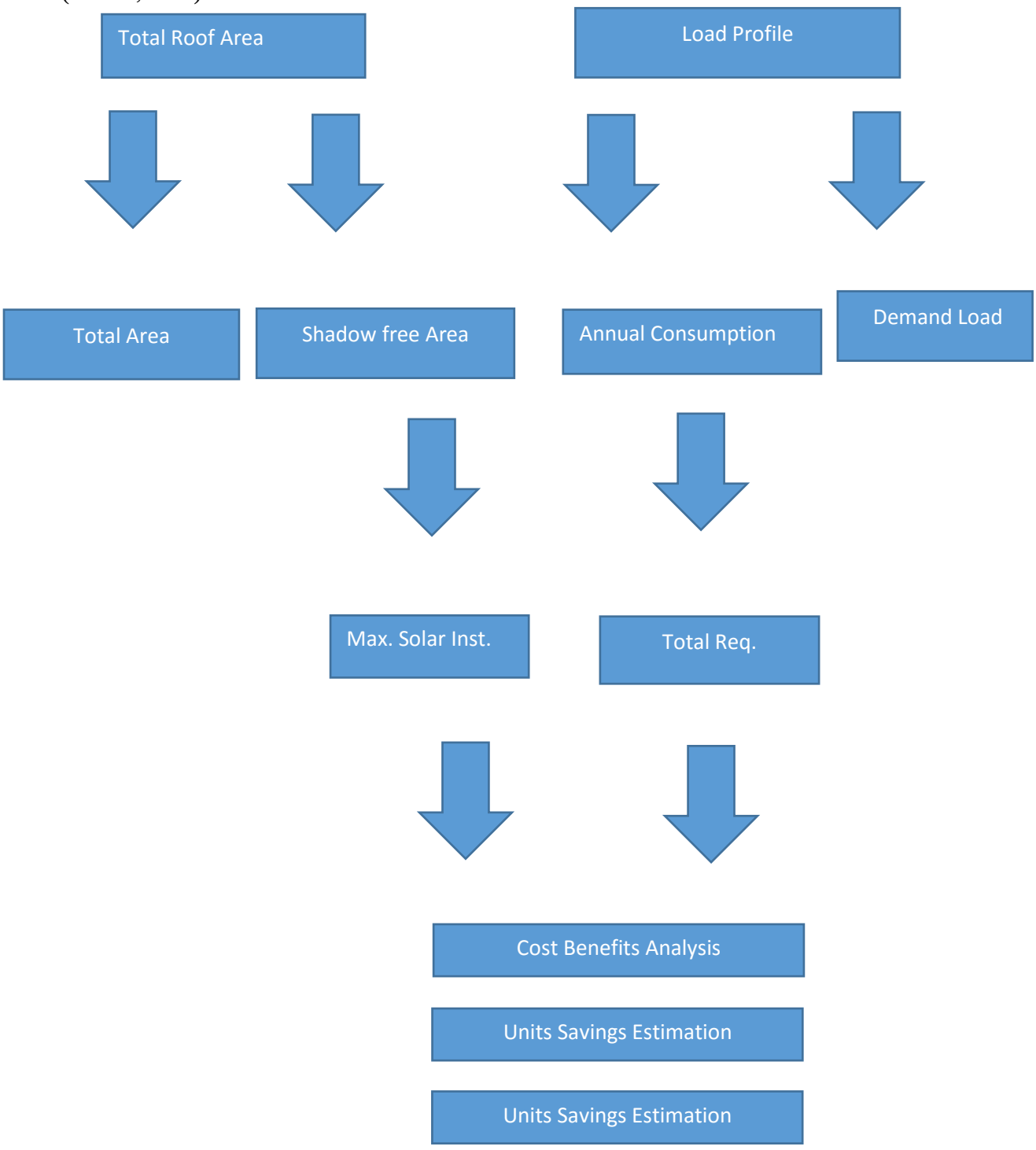
Region	Pune	Nasik	Nagpur	Aurangabad	Konkan	Amravati	Total
Area in Sq Km	57268	57426	51377	64811	30746	46090	2,42,907
Districts	Pune, Satara, Kolhapur, Sangli, Solapur	Nashik, Ahmednagar, Jalgaon, Dhule, Nandurbar	Wardha, Nagpur, Chandrapur, Bhandara, Gadchiroli, Gondia	Aurangabad, Jalna, Beed, Osmanabad + Nanded Dist	MMR Thane, Raigad, Ratnagiri, Sindhudurg	Akola, Amravati, Buldhana, Washim, Yavatmal	
Power	Thermal Power Station	Thermal Power Plant Eklahare Thermal Power Station Coal/Gas based Bhusawal	Koradi Thermal Power Station Khaparkheda Thermal Power Station Chandrapur Thermal Power Station	Thermal Power Station Coal/Gas Parli	Tarapur Atomic Power Station Uran Gas Turbine Power Plant	Thermal Power Station	
No of SME	85235	25581	24972	16149	59095	12415	223,447
Mega project	141	55	98	81	56	23	454
IT Parks	171	4	6	3	287	-	471
Employment	962638	301005	246752	175990	960278	106858	27,53,521
Investment in Lakh Rs.	1419873	591734	361148	439283	2299086	135005	52,46,129

6. (Directorate of Industries, Government of Maharashtra., 2016)**Model for rooftop solar**

The study aims to create to specific region level analysis of requirements and proposed a business model for adaptation of Roof Top PV installation on MSME, the specific interest to increase the awareness on the installation and successful deployment of solar projects. The model is confidence building measure to entrepreneurs, MSME business owners and financial institution for investment in RTPV.

The model address the following questions (i) How to optimize the solar generation based on the current renewable policy? (ii) Payback calculation based generation and tariff.

1. Existing utility bills and consumption trends for MSME
2. Roof Area Available and optimum solar installation
3. Potential of PV-electricity generation for effective use of the roof top
4. Simulation Power generation based on of the data based on PvSYST TM software, factor considered is 1400 – 1450 KWH/KW/Annum
5. Payback Calculation based on benchmark cost of Project as per MNRE circular dated 25th July 2019. (MNRE, 2019)



7. Case Study Approach for research

The assessment are done based on 4 case studies as representative sample to the industry based on roof and Primary research.

Tables and broad contents for research

1. Site survey and identifications
2. Utility and general Assessment
3. Financial Analysis
4. Power Consumption and Generation Graph

NO	NAME	SOLAR CAPACITY	LOCATION
1	Shivam Packaging P Limited	100 KWp	Khopoli
2	Dolly Printing and Packaging P Limited	99 KWp	Pune District
3	Venus Furniture P Limited	70 kWp	Navi Mumbai (MMR)
4	Prospect Engineering Works	100 kW	Vasai, Mumbai

Table 1A / Site Identification and Survey : Shivam Packaging : Case 1

1	Name of MSME Unit owner	SHIVAM PACKAGING INDUSTRIES P.LTD
2	Contact Details	9823485768
3	Type of Industry	Manufacturing Company
4	Products Address	Sv.35/4A/1,Tembhewadi At Honad Near Pushpaman Packaging
5	Ownership of roof	SHIVAM PACKAGING INDUSTRIES P.LTD
RTPV information		
1	Geographical coordinates	73°18'38.87"E 18°46'35.04"N
2	Roof top Type	Industrial Roof
3	Orientation of Solar installation	East-West orientation 5°
Basic Assessment		

1	Available area	1640 Sq. mtr.
2	SPV size as per area	165 kWp
3	Connected / Sanction Load	150 kW
4	Average unit consumption	18268 kWh
5	SPV size as per consumption	146 kWp
6	Coustomer requirement	100 kWp
7	**Final proposed capacity**	**100 kWp**
8	Required area for proposed capacity	1123 Sq. mtr.

Table 1 B Utility information and Generation assessment : Case 1

1	Name of MSME Unit owner	SHIVAM PACKAGING INDUSTRIES P.LTD
2	Contact Details	9823485768
3	Type of Industry	Manufacturing Company
4	Products Address	Sv.35/4A/1,Tembhewadi
5	Ownership of roof	SHIVAM PACKAGING INDUSTRIES P.LTD
RTPV information		
1	Geographical coordinates	73°18'38.87"E 18°46'35.04"N
2	System Size	100 kW
3	Roof top Type	Industrial Roof
4	Orientation of Solar installation	East-West orientation 5°
Technical Details		

1	DISCOM	MSED
2	Connection Type	LT
3	Voltages	415 V
4	Grid Availability (%)	80%
5	Connected Load (kW)	150
6	Machinery/Load details	Paper packaging
7	Transformer (kVA)	22/0.415kV

Commercial

Sr No.	Parameters	
1	Power Tariff	10.86
2	Estimated Solar Generation	1495kWh/kWp/year
3	Netmetering Available	YES
4	Accelerated Depreciation	40%

Month	**Units Consumed**	**Solar generation**	**Revised Consumed**
1	17461	11910	5551
2	18598	12490	6108
3	20395	15630	4765
4	18937	16040	2897
5	15054	16420	-1366
6	15492	12070	3422
7	19267	9900	9367
8	21721	10210	11511
9	18654	11350	7304
10	17230	12390	4840
11	17164	11220	5944
12	19251	10980	8271
Total	**219224**	**150610**	**68614**

Table 1 C / Financial Analysis : Case 1

System Data	Grid Tied System
Operating Life	25 Years

Economic Parameters	
IRR	40%
Total Savings for 20 Years	₹ 43,448,862.48
Payback period	3rd year
Payment Overview	
Investment for 100 kW	₹ 4,800,000.00
Depreciation @ 40%	₹ 1,920,000.00
Income tax Slab	25%
Income tax saving	₹ 480,000.00
Net Investment	₹ 4,320,000.00

Savings

First Year Saving	₹ 1,623,570.00
Second Year Savings	₹ 1,671,627.67
Third Year Savings	₹ 1,721,107.85

Utility Tariff	
Utility Company	MSEDCL
Energy Price	10.86
Inflation Rate for Energy Price YOY	4%
Yearly Electricity Generation in kWh/A	149,500.00

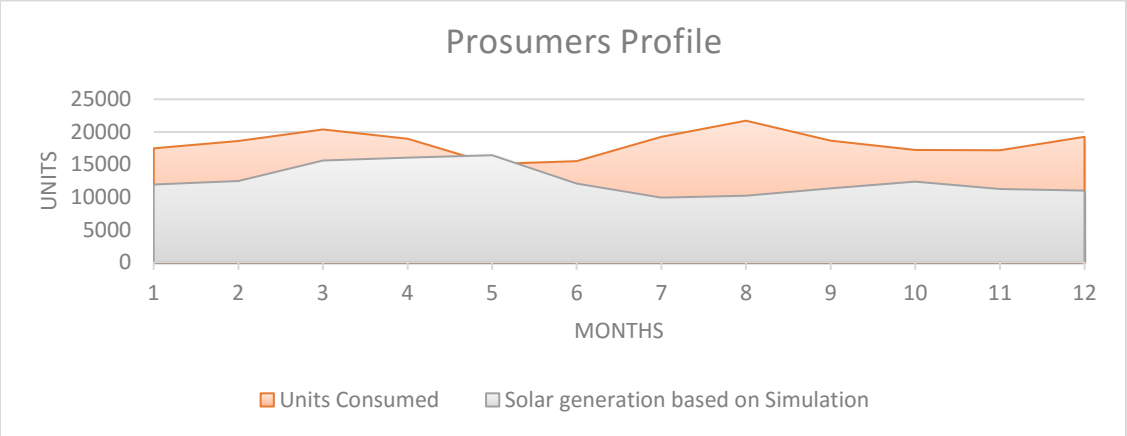
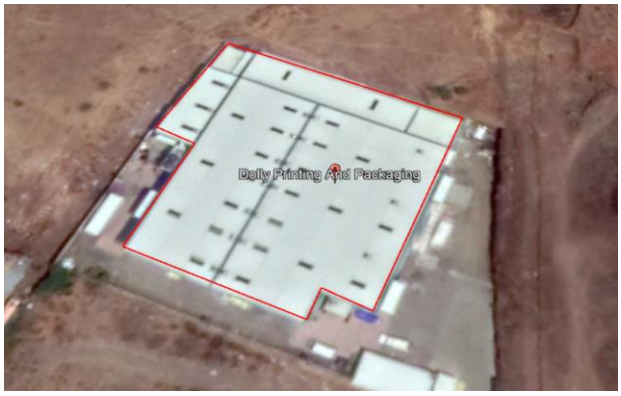
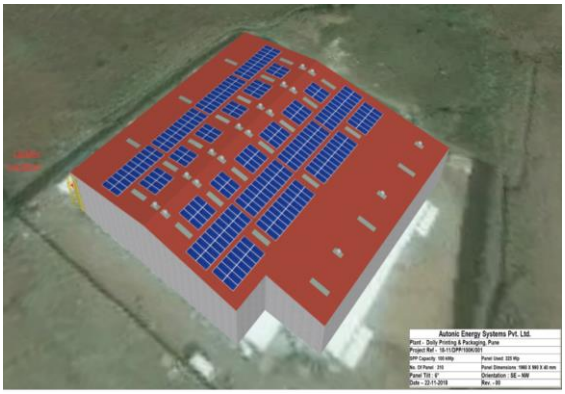


Table 2 A / Site Identification and Survey : Dolly Printing Case 2		
1	Name of MSME Unit owner	Dolly printing and packaging PVT LTD
2	Contact Details	
3	Type of Industry	Manufacturing Unit
4	Products Address	Gat no : 101 Ranje Taluka : bhor Pune
5	Ownership of roof	Dolly printing and packaging PVT LTD
RTPV information		
1	Geographical coordinates	18°30'56.51"N 73°48'13.39"E
2	Roof top Type	Tin sheet (industrial roof)
3	Orientation of Solar installation	East west
Basic Assessment		





1	Available area	2502
2	SPV size as per area	240
3	Connected / Sanction Load	186 kW
4	Average unit consumption	11245

5	SPV size as per consumption	90
6	Coustomer requirement	100
7	**Final proposed capacity**	**100kWp**
7	Required area for proposed capacity	1220

Table 2 B / Utility information and Generation Assessment : Case 2

Sr No.	Question	
1	Name of MSME Unit owner	Dolly Printing and Packaging Private Limited
2	Contact Details	
3	Type of Industry	Manufacturing Unit
4	Products Address	Gat no : 101 Ranje Taluka : bhor Pune
5	Ownership of roof	Dolly printing and packaging PVT LTD
	RTPV information	
1	Geographical coordinates	18°30'56.51"N 73°48'13.39"E
2	System Size	99.5 kWp
3	Roof top Type	Tin sheet (industrial roof)
4	Orientation of Solar installation	east west
	Technical Details	
1	DISCOM	MSED
2	Connection Type	Grid connected
3	Voltages	415v
4	Grid Availability (%)	90%
5	Connected Load (kW)	186 kW
6	Machinery/Load details	Printing and packaging machinery
7	Transformer (kVA)	11/0.415kV
	Commercial	
Sr	Parameters	

1	Power Tariff	13.1
2	Estimated Solar Generation	1485kWh/kWp/year
3	Netmetering Available	YES
4	Accelerated Depreciation	40%

Month	Units Consumed	Solar generation based on Simulation	Revised Consumed
1	14788	11830	2958
2	10694	12340	-1646
3	12156	14980	-2824
4	11804	15260	-3456
5	11698	16300	-4602
6	11506	12110	-604
7	11412	10110	1302
8	10620	9800	820
9	9492	10600	-1108
10	8474	12410	-3936
11	11216	11440	-224
12	11090	10510	580
Total	**109468**	**147690**	**-12740**

Table 2 C / Financial Analysis : Case 2

System Data	Grid Tied System
Operating Life	25 Years

Economic Parameters	
IRR	48%
Total Savings for 20 Years	₹ 52,060,117.29
Payback period	3rd year
Payment Overview	

Investment for 100 kW	₹	4,800,000.00
Depreciation @ 40%	₹	1,920,000.00
Income tax Slab		25%
Income tax saving	₹	480,000.00
Net Investment	₹	4,320,000.00

Savings

First Year Saving	₹	1,945,350.00
Second Year Savings	₹	2,002,932.36
Third Year Savings	₹	2,062,219.16

Utility Tariff	
Utility Company	MSEDCL
Energy Price	13.1
Inflation Rate for Energy Price YOY	4%
Yearly Electricity Generation inkWh/A	148,500.00

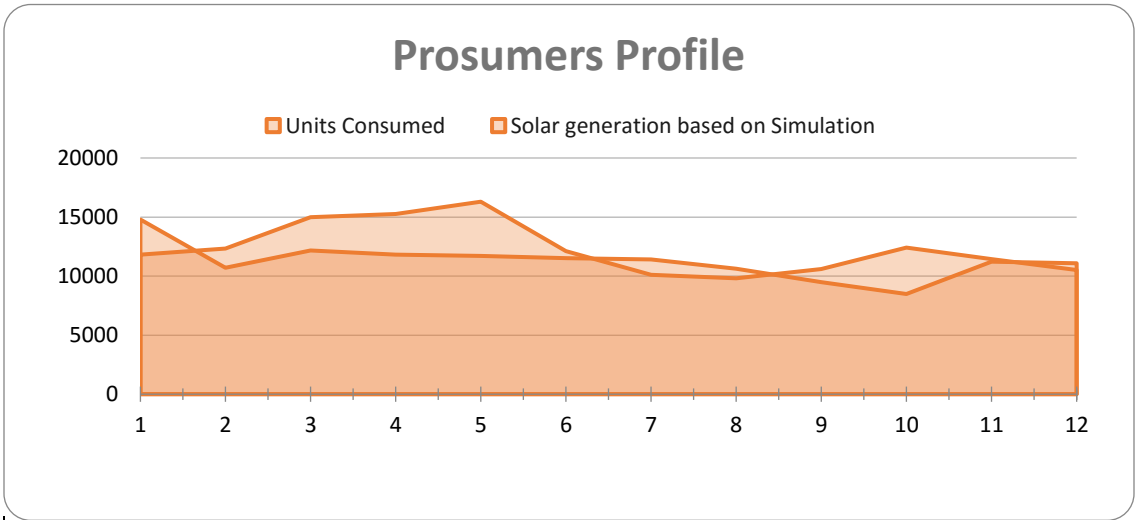
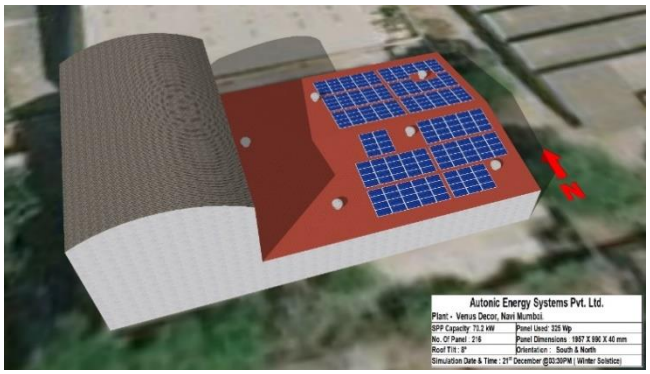


Table 3 A / Site Identification and Survey : Venus Furniture Pvt Ltd: Case 3

Sr No.	Table General Information	
1	Name of MSME Unit owner	VENUS FURNITURE PVT LTD
2	Contact Details	9869732284
3	Type of Industry	Commercial office

4	Products Address	Plot No.8-A/1/2B, TTC-MIDC IND Area
5	Ownership of roof	VENUS FURNITURE PVT LTD
RTPV information		
1	Geographical coordinates	72°59'54.09"E 19°10'35.95"N
2	Roof top Type	Industrial Roof
3	Orientation of Solar installation	South-North orientation 5°
Basic Assesment		



1	Available area	1032 Sq. mtr.
2	SPV size as per area	105 kWp
3	Connected / Sanction Load	88.5 kW
4	Average unit consumption	6428 kWh
5	SPV size as per consumption	92 kWp
6	Coustomer requirement	70 kWp
7	**Final proposed capacity**	**70 kWp**
7	Required area for proposed capacity	653 Sq. mtr.

Table 3 B/ Utility information and Generation Assessment : Case 3

1	Name of MSME Unit owner	VENUS FURNITURE PVT LTD
2	Contact Details	9869732284
3	Type of Industry	Commercial office
4	Products Address	Plot No.8-A/1/2B, TTC-MIDC IND Area
5	Ownership of roof	VENUS FURNITURE PVT LTD
	RTPV information	
1	Geographical coordinates	72°59'54.09"E 19°10'35.95"N
2	System Size	70kW
3	Roof top Type	Industrial Roof
4	Orientation of Solar installation	South-North orientation 5°
	Technical Details	
1	DISCOM	MSEDCL
2	Connection Type	LT
3	Voltages	415 V
4	Grid Availability (%)	100%
5	Connected Load (kW)	88.5
6	Machinery/Load details	Interior designer office
7	Transformer (kVA)	11/0.415kV
	Commercial	
Sr No.	Parameters	
1	Power Tariff	18.33
2	Estimated Solar Generation	1411kWh/kWp/year
3	Netmetering Available	YES
4	Accelerated Depreciation	40%

Month	Units Consumed	Solar generation Simulation	Revised Consumed
1	6291	7910	-1619
2	5334	8440	-3106

3	5943	8980	-3037
4	5757	11080	-5323
5	6684	11330	-4646
6	6450	8270	-1820
7	5892	6060	-168
8	6525	6840	-315
9	5583	7950	-2367
10	6330	8730	-2400
11	4788	7680	-2892
12	5886	7270	-1384
Total	**71463**	**100540**	**-29077**

Table 3 C Financial Analysis: Case 3	
System Data	Grid Tied System
Operating Life	25 Years
Economic Parameters	
IRR	56%
Total Savings for 20 Years	₹ 48,450,126.09
Payback period	2nd year

Payment Overview	
Investment for 70 kW	₹ 3,780,000.00
Depreciation @ 40%	₹ 1,512,000.00
Income tax Slab	25%
Income tax saving	₹ 378,000.00
Net Investment	₹ 3,402,000.00

Savings

First Year Saving	₹ 1,810,454.10
Second Year Savings	₹ 1,864,043.54
Third Year Savings	₹ 1,919,219.23

Utility Tariff	
Utility Company	DISCOM
Energy Price	18.33
Inflation Rate for Energy Price YOY	4%
Yearly Electricity Generation inkWh/A	98,770.00

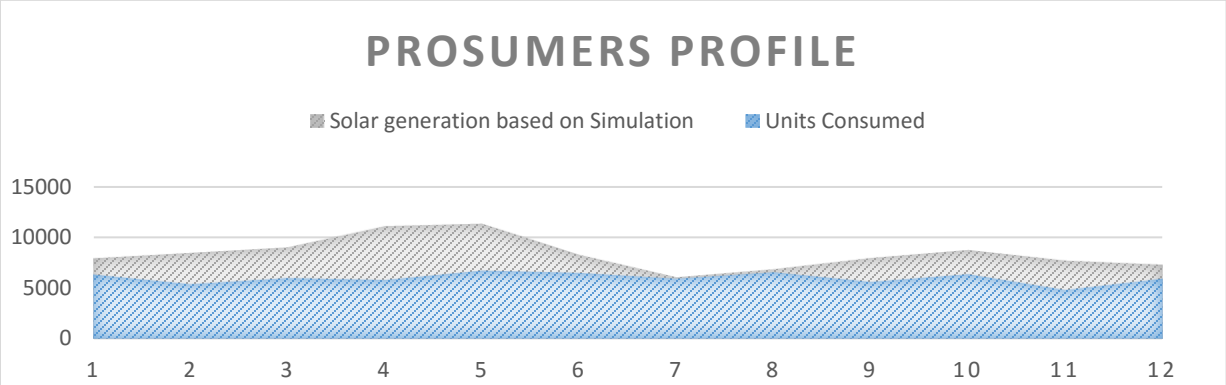
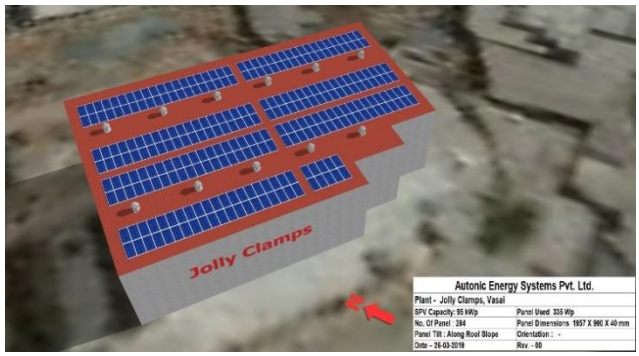


Table 4 A/ Site Identification and Survey: Prospect Engineering Works: Case 4		
Sr No.	**General Information**	
1	Name of MSME Unit owner	Prospect Engineering Works
2	Contact Details	7506184779
3	Type of Industry	Manufacturing Unit
4	Products Address	Plot No. 3 , Opp. Abhilasha Industries. EST
5	Ownership of roof	Prospect Engineering Works
RTPV information		
1	Geographical coordinates	72°52'24.81"E 19°25'0.19"N
2	Roof top Type	Tin sheet (industrial roof)
3	Orientation of Solar installation	south 5°
Basic Assessment		



1	Available area	1000 Sq. mtr.
2	SPV size as per area	95 kWp
3	Connected / Sanction Load	149 kW
4	Average unit consumption	43657 kWh
5	SPV size as per consumption	350 kWp
6	Coustomer requirement	As per available area
7	**Final proposed capacity**	**95 kWp**
8	Required area for proposed capacity	1000 Sq. mtr.

Table 4 B / Utility information and Generation Assessment : Case 4

No.	**General Information**	
1	Name of MSME Unit owner	Prospect Engineering
2	Contact Details	7506184XXX

3	Type of Industry	Manufacturing Unit
4	Products Address	Plot No. 3 , Opp Abhilasha Industries. EST
5	Ownership of roof	Prospect engineering works
	RTPV information	
1	Geographical coordinates	72°52'24.81"E 19°25'0.19"N
2	System Size	95 kW
3	Roof top Type	Tin sheet (industrial roof)
4	Orientation of Solar installation	south 5°
	Technical Details	
1	DISCOM	MSED
2	Connection Type	Grid connected
3	Voltages	415v
4	Grid Availability (%)	90%
5	Connected Load (kW)	149.2kW
6	Machinery/Load details	Metal clamp manufacturing
7	Transformer (kVA)	11/0.415kV
	Commercial	
No,	Parameters	
1	Power Tariff	Rs. 8.48 /Unit
2	Estimated Solar Generation	1453kWh/kWp/year
3	Netmetering Available	YES
4	Accelerated Depreciation	40%

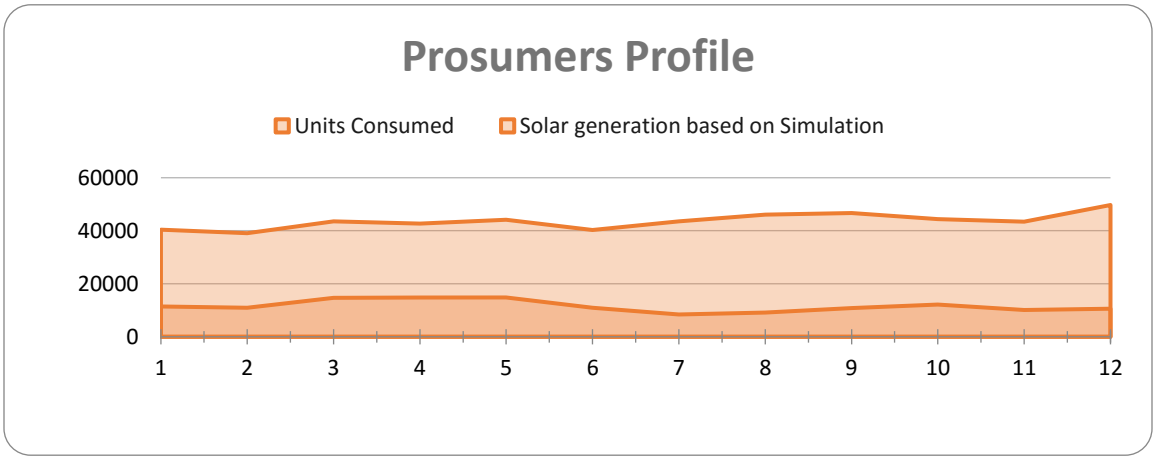
Month	**Units Consumed**	**Solar generation based on Simulation**	**Revised Consumed**
1	40371	11410	28961
2	39090	10980	28110
3	43572	14630	28942
4	42666	14810	27856
5	44127	14830	29297
6	40308	10900	29408
7	43578	8450	35128

8	46017	9180	36837
9	46659	10780	35879
10	44346	12120	32226
11	43440	10100	33340
12	49710	10550	39160
Total	**444423**	**138740**	**385144**

Table 4 C Financial Analysis : Case 4

System Data	Grid Tied System
Operating Life	25 Years
Economic Parameters	
IRR	31%
Total Savings for 20 Years	₹ 26,430,932.70
Payback period	4th year
Payment Overview	
Investment for 95 kW	₹ 4,560,000.00
Depreciation @ 40%	₹ 1,824,000.00
Income tax Slab	25%
Income tax saving	₹ 456,000.00
Net Investment	₹ 4,104,000.00
Savings	
First Year Saving	₹ 1,170,536.80
Second Year Savings	₹ 1,205,184.69
Third Year Savings	₹ 1,240,858.16
Utility Tariff	
Utility Company	DISCOM

Energy Price	8.48
Inflation Rate for Energy Price YOY	4%
Yearly Electricity Generation inkWh/A	138,035.00



8. Significance

The intension of the study is to create to specific understanding on techno-commercial feasibility in MSME and stakeholders including financial institution. The study will also region level analysis of requirements and proposed a business model for adaptation of Roof Top PV installation on MSME, the specific interest to increase the awareness on the installation and successful deployment of solar projects. The model is confidence building measure to entrepreneurs, MSME business owners and financial institution for investment in RTPV.

9. Limitations

There is downward price trend in the solar modules of Solar modules prices, this prediction of the prices are not in control. The installation base will increase with proactive policies from the state government. Distribution companies may delay mass scale Rooftop installation by using the policy to delay the growth.

10. Conclusion

There is direct relation between sunlight and solar PV generation , it will safe to say sunlight is like fuel and RTPV is an vehicle to capture the fuel. We have factored following parameters

- PV-electricity production,
- Units consumed from grid or billed by the utility company for 12 months period
- PV-panels effectively used in the building,
- solar radiation in the plane of the panels

Based on the primary selection of the data, the RTPV will payback in 3-4 years, based on the tariffs. Post the payback the installation will help reduced the levelized cost of electricity (LOCE). The expected life to the project is 25 years with increase of taxes or surcharge to support grid as proposed by Govt of Maharashtra the internal rate of return will be in the north of 25%.

Net metering will be the prime driver for RTPV to grow as the option for surplus power to be feed to the grid during the generation greater than consumption period and surplus to be adjusted during off-peak hours. Many conclusions were made regarding the system performance, impact of Solar PV generation, requirement of place, payback period and savings in generation.

The model is be generic for RTPV as the formula and ratio's will remain unchanged making the model elastic factoring the future variation in the prices for the project and grid.

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HR issues in Mergers and Acquisition with respect to banking sector in India

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Abstract: This research paper looks at Mergers and Acquisitions of Indian public sector banks from human resource point of view and the impact on employees that have happened in Indian banking sector. This research paper focuses on the management of human resources in the process of mergers and acquisitions. The paper also analyses and recommends steps that banks should consider during the merger of banks. The paper suggests different parameters that should be taken into consideration during mergers. The findings suggest that to some extent M&A's has been successful in Indian banking sector but productivity from employees have declined.
Keywords: - Mergers, Acquisition, Job Satisfaction, Organizational Commitment

Introduction

Many research conducted have stated that human resource function is the most complicated organizational issue in mergers. Human Resource management issues like reward strategy, service conditions, employee relations, compensation and benefit plans, pension provisions, law suits and trade union actions are critical to the viability for the deal and merger plan. Training and development initiatives can play an important role during the period of announcement, closure, and the post amalgamation stage. Organizations have to create such open spaces, where employees have the opportunity to discuss their personal concerns and work out as to how they might need to adjust. Change management sessions also help employees in understanding how individuals and organizations typically react to change. People become committed to a merger when they believe it is built on a sound strategy and offers personal benefits in terms of financial incentives and other opportunities. It should meet their emotional needs as well. It is always advisable to attend to the decisions of human resource very quickly, that is, within 100 days of merger announcement in order to avoid uncertainty, which would lead to employee morale erosion and the exit of key talent. All the HR issues such as selection, retention and promotion opportunities need to be effectively communicated to the staff, while emphasizing on the degree of transparency and fairness in order to establish credibility. In the cases of voluntary mergers like Times Bank' and 'Bank of Madura', the acquired banks have guaranteed employment to all the employees and minimized the scope for conflicts. A merger is a deal to unite two existing companies into one new company. There are several types of mergers and also several reasons why companies complete mergers. Most mergers unite two existing companies into one newly named company. Mergers and acquisitions are commonly done to expand a company's reach, expand into new segments, or gain market share. An acquisition is a corporate action in which a company buys most, if not all, of another firm's ownership stakes to assume control of it. An acquisition occurs when a buying company obtains more than 50% ownership in a target company. As part of the exchange, the acquiring company often purchases the target company's stock and other assets, which allows the acquiring company to make decisions regarding the newly acquired assets without the approval of the target company's shareholders. A merger is generally defined as the joining of two or more different organizations under one common owner and management structure while an acquisition is the

process of one corporate entity acquiring control of another corporate entity by purchase, stock swap or some other method. Another critical issue in pre and post-merger period is culture. Culture is central to the institutional environment in which people have to work. Cultural friction is a difficult condition to analyse because it is revealing itself in diverse problems such as poor productivity, wrangles among the top team, high turnover rates, delays in integration, and an overall failure to realize the synergies of the deal (Devine, 2003). Cultural issues are crucial in any merger or acquisition that depends on collaboration for its success, and which they increasingly do in any economy. Both parties have to commit for cultural audit as a component of due diligence process. This can help both businesses understand each other's cultures and gain a sense of the cultural traits that they hope to preserve before or after the merger. Cultural Integration is an essential prerequisite for a successful merger, where two banks aim to take the 'Best of Both' and create a new culture (Devine, 2003).*Hence the research problem identified is employee commitment declines during the mergers of the banks and what measures need to be taken during the process of merger and acquisition.*

HR's Role in Mergers and Acquisition

The role of merger and acquisition comes packed with mixed feelings which includes factors like excitement, fear, uncertainty, enthusiasm and resistance. These emotional reactions can occur at every level of the organization. How an organization deals with its employees before, during and after the transaction can have a determinative impact on the success of the transaction. Both mergers and acquisitions present significant challenges to HR professionals. The process requires management of both organizations to consider all implications of a proposed merger or acquisition before agreeing to one which necessarily involves consideration of the people issues created by a proposed merger or acquisition. HR professionals are often involved in the process by advising management on human resource matters, including using surveys and other metrics to gather relevant data, identifying potential conflicts or HR challenges between the two companies, integrating HR practices and company cultures after an M&A, and managing talent decisions such as layoffs, to name a few. HR professionals face a number of challenges during M&As, like attempting to maintain an internal status quo, a possible merger or acquisition, as instructed by upper management. Attempting to provide guidance to upper management from a "people" perspective as to whether organizational goals will be better fulfilled in the form of a merger versus an acquisition, or by making internal changes. Assuming that a merger or acquisition has been approved, discerning all aspects of the two separate organizations and the one combined organization that will be affected. Communicating with employees at every step in the M&A process with both an appropriate level of disclosure and an appropriate level of confidentiality.

Review of Literature

Ishwarya (2019) says that the decline in the performance of merging firms cannot be attributed to merger alone. But in future, there are strong prospects of improvements in profitability. But overall, results indicate that mergers led to higher level of cost efficiencies for the merging banks.. The author suggested that the trend of merger in Indian banking sector has so far been restricted to restructuring of weak and financially distressed banks. The prime factors for future mergers in Indian banking industry included the challenges of free convertibility and requirement of large investment banks. Therefore, the Government and policy makers should be more cautious in promoting merger as a way to reap economies of scale and scope.Rani.et.al(2015) founded employee morale is the essential constraint of employee behaviour which if hampered can make

an individual work more effectively or may restrict him to perform and also told that identity of the employee in merger situation of acquirer or acquired also makes a difference on individual level of employee. Executive morale facilitates the change process in the time of merger and acquisition. The results revealed factors like workplace environment, supervision, cooperation from peers, work discrimination, employee acceptance, work allocation, job security and remuneration extracted as important determinants of job satisfaction and also supervision, cooperation from peers, work allocation and employee acceptance influences the level of job satisfaction. Oswald.et.al (2015) agreed that employees who are considered satisfied and happy in the workplace influence productivity in their jobs and engagement features the characteristic of loyalty to an organization. Kaur(2015) analysis revealed that workplace environment, supervision, cooperation from peers, work discrimination, employee acceptance, work allocation, job security and remuneration extracted as important determinants of job satisfaction and also showed that supervision, cooperation from peers, work allocation and employee acceptance influences the level of job satisfaction. Aziri (2011) says that job satisfaction represents one of the most complex areas facing today's managers when it comes to managing their employees. The author says that there is impact of the job satisfaction on the motivation of workers, while the level of motivation has an impact on productivity, and hence also on performance of business organizations. Devi.et.al (2013) revealed that employees who demonstrate higher levels of job satisfaction are associated with higher levels of commitment to the organization and higher levels of workplace productivity. Mohammadi & Shahrabi (2013) says that higher degree of job satisfaction like working conditions, working components, and work-life quality leads to a higher degree of employee performance. Chimote & Srivastava (2013) stated when a worker experienced positive work-life balance, the worker improved productivity and maintained loyalty to the organization. Kumari, G. and Pandey, K.M. (2011) studied public v/s private sector bank. The author implies that job performance of individuals with high versus low job ambivalence may fluctuate such that job performance is comparatively high when positive beliefs and affective experiences are salient and thus predominate at a certain point in time but that their performance may be comparatively low at other times when negative beliefs and affective experiences are salient and predominate.

Issues/Challenges in Mergers and Acquisition on Employees

1) Communication Gap:-

Employees don't accept change easily they see change as displace and worried. HR must communicate effectively and openly with all employees throughout the transition. Specifically, HR must communicate with employees about the necessity for the change, explain how the change will benefit them, and manage the stresses that accompany change. Involvement of HR professionals at every step in the M&A process is overwhelming. Studies consistently show that most mergers and acquisitions fail, mainly because of people and culture issues. In the period leading up to and immediately following a significant transaction, a tendency exists for employees to begin considering their own personal situation like what is there for me as an individual in future with the company. The longer the period of uncertainty lasts, the more attractive alternative employment becomes. To make things more difficult, the best and brightest managers are the ones immediately targeted by recruiters attempting to lure them to other organizations. The loss of key employees can seriously erode the potential value of a transaction for the acquiring firm. Perhaps equally damaging, and just as costly, are those people who stay on the payroll but who emotionally back out and do not perform at their previous levels of productivity. If the process is not managed

well, a company may end up with the employees who simply had the fewest alternatives. Communications. In the process a well-planned communication strategy is critical. Effective communication involves providing information on points such as shared vision for the new company, the nature and progress of the integration and the anticipated benefits, and the outcomes and rough timelines for future decisions. Communicating clear, consistent and up-to-date information not only will give employees a sense of control by keeping them informed, but it also can increase the coping abilities of employees and minimize the impact of the integration on performance. The communication process should include one-on-one meetings, group sessions, newsletters, intranet updates. Focus on the themes of change and progress by highlighting projects that are going well and action items that are being delivered on time. Repeat the common themes of the M&A to increase employee understanding of the rationale behind the transaction. Provide opportunities for employee involvement and feedback. Ensure that employees understand there will be problems, but give a commitment that the problems will be identified and addressed as early as possible. Critical to successful integration is the manner in which the restructuring is implemented. The highest priority is that the acquiring company needs to be straightforward about what is happening and what is planned. Even when the news is bad, the one thing employees of newly acquired companies appreciate most is the truth like the company don't know about certain areas or not yet decided. Being honest also includes sharing information about when and by what process a decision is expected to be reached. The truth also means acknowledging some of the stress and other emotions that are undeniably present. Organizations should never tell employees that everything will be as usual. The reality is, change is occurring. Likewise, employers should resist the urge to tell employees that they have great future to look forward to, when they are still confused and grieving over the past. Employers should not attempt to sugar-coat matters with false platitudes such as calling the deal merger of equals when one company is clearly the majority stakeholder and therefore has the ability to cast the deciding vote in a split decision. Once decisions are made about functions and people, the organization must treat those employees who will be negatively affected by the transaction with dignity, respect and support. Not only is this approach the humane thing to do, but it also is a powerful way of showing those who remain what kind of company they are now working for and of helping them begin to develop some positive feelings toward the new organization.

2) Technology and Leadership

The team leader must focus solely on the process rather than be involved in running the business, be sensitive to cultural differences, lead the change process, and retain and motivate key employees. In mergers the two organizations are combined into one. New workgroups are established. HR professionals may be involved in formulating a new mission statement, vision statement and possibly a values statement. Organizational policies and procedures will be revised and coordinated with significant input from HR professionals. Managing HR technology and deciding which systems to keep or replace, as well as which functions to outsource, can be a highly complex undertaking. Making such decisions requires that employers thoroughly assess the HR systems and people capabilities of both organizations. Technology integration must occur thoroughly and quickly enough that normal operations never appear disturbed to users.

3) Mismatch of Culture

One must understand the company culture and then take step ahead. Some companies may be driven by processes while the other may be driven by the end product or innovation, emphasis may

be different. Decision making might be different for many organizations some companies may adopt top down approach while other may be decentralized decision making. Human resource department must foreshadow cultural challenges and take steps to integrate the both the cultures. HR professionals typically play pivotal roles in an acquisition's core due diligence activity. During due diligence, information about talent and culture—along with typical assessments of employee benefits plans and liabilities, compensation programs, employment contracts and policies, legal exposure, and more—can provide insights into the value of a property and its workforce and can decrease the likelihood of unhappy and expensive surprises once the deal is complete. A thorough review of the acquired organization's legal position generally takes place during the due diligence phase of the transactions. This is a time when all people-related policies, plans, practices and programs should be scrutinized to ensure compliance with applicable employment laws and regulations. Cultural compatibility issues often arise when bringing together two or more cultures in the process. Because culture encompasses the beliefs and assumptions shared by members of an organization and influences all areas of group life, the integration always has a degree of misalignment, regardless of the perceived similarity between the two firms. Since cultural clashes can affect important outcomes, focusing on cultural alignment has been top challenge. The cultural and communication issues can create even more complexity for HR practitioners.

4) Stay or Gone

Human resource department must determine the new organizational structure, and should retain and motivate key talent required for the process. To retain the key talent that will help make the new organization successful, management should communicate its intentions to the "star performers" as early in the process as is legally possible. This means requesting access to conduct confidential interviews with key employees in advance of the actual closing date. Most importantly, management should be very careful not to under commit to these key people, or they will consider other employment options. Star performers know who they are and understand their personal and professional marketability. Early placement of management is a critical factor in beginning to stabilize the new organization. Any delays in placing key managers complicate the transition by increasing uncertainty, diverting attention and fostering internal competition. A major challenge for the acquiring company is in deciding who to retain, who to redeploy and who to terminate, as well as effectively managing those processes. Relocating key personnel or even entire departments may be necessary. Ideally, the HR and management teams will have been able to assess the skills, capabilities, potential and motivations of key employees involved in the merger or acquisition. Typical methods include interviewing and testing techniques and the use of outside consultants. Once these tasks are completed, the HR team should take immediate steps to "re-recruit" and place these employees into key positions of the new entity. Most M&A deals count on both the organizational and financial efficiencies that will result from a reduction in the number of employees needed to run the new organization. This outcome means that HR will spend a large amount of time assessing employee knowledge, skills and abilities (KSAs) to decide who will stay and who will go. The strategy may include terminations, early retirements and a longer-term plan to simply not fill certain positions as they are vacated. The ways in which these decisions are made will—in the long run—be as important as the actual decisions themselves. Moreover, the manner in which talent management decisions are made will communicate a great deal about what the organization values.

5) Deciding on HR Policies

The process of mergers and acquisitions leads to layoffs. Mergers and acquisitions are tools businesses use to achieve organizational objectives—tools that have profound impacts on the employees of the organizations at every level as two organizations attempt to integrate into one. Even though mergers and acquisition achieve their planned strategic and financial goals but the failure is attributed to various HR-related factors, such as incompatible cultures, management styles, poor motivation, and loss of key talent, lack of communication, diminished trust and uncertainty of long-term goals. An HR professional must be involved in interviewing the third-party professional and negotiating an independent contractor agreement. To shape the culture of the newly merged organization, the employer must develop and communicate to employees a cogent people-related strategy. Such a strategy should include the development of key policies, rules and guidelines to govern employee behaviour and related workplace expectations like attendance, time off, harassment, drug testing, privacy etc.

6) Compensation and Benefits

In the HR arena, one area that has significant potential for creating issues is that of retirement benefits. The questions concerning defined benefit plans, defined contribution plans, vesting, valuation of liabilities and overfunding or underfunding of plans are complex issues that can create real challenges for members of the HR team. In addition to a review of retirement-related issues, HR should also conduct a full analysis of the target company's health care benefits and costs, as well as its worker's compensation liabilities. The outdated view of HR as a purely administrative function rather than as a strategic one often results in HR professionals being excluded from many aspects of the M&A process in which they could add significant value to the process. Having the necessary skill sets to effectively manage the integration i.e knowledge in employee relations, communications, change management and legal requirements should gain the confidence of senior management in HR. Competency in these areas also should enable HR professionals to handle the complicated process of managing human resources during mergers and acquisitions.Depending on the circumstances of the deal and the compensation policies of the combining companies HR will likely be called on to splice disparate payment plans into a program that fits the new organization. Alternatively, HR may have to discard the original plans and then create a program from scratch that meets the goals and direction of the newly merged entities. Either way, old and new employees will be concerned about what is happening with their pay and will want full and early disclosure about the changes being considered. In addition, members of the senior management team will be anxious to see what types of special arrangements e.g., stock options, special retirement provisions, severance agreements will be offered to them given the high-profile nature of the new positions. The development of an executive compensation strategy will require an additional set of complex decision-making, as well as board approvals. Just as with compensation programs, HR will likely be required to link disparate employee benefits into a program that fits the newly formed organization, or simply discard the existing plans and start over. Either way, the creation of a comprehensive employee benefits program is a complex undertaking, and one that takes time. Throughout that process, however, employees are sure to be concerned about possible changes to their employee benefits coverage and will want to be informed about "the new package" as soon as that information is available. While one or two cases of discrimination or sexual harassment can normally be resolved fairly easily, the HR team needs to be most concerned with examples of systemic problems created by a lack of appropriate policies or a failure to enforce those policies. Legal issues related to wage/hour issues, leave issues employee compensation needs to be addressed prolifically.

Research Methodology

The study is based on secondary data including various newspaper articles, research papers and journals. Ebsco and Proquest databases and google scholar were used for collection of the data.

Conclusion

M&As provide enormous potential for growth that simply can't be achieved as quickly through organic, incremental development. However, success rates are not very high, rendering them an expensive and very risky way to grow a business. When companies pay close attention to the people aspects of a merger or an acquisition, they greatly increase the chances that the deal will fulfill its promise. That's why, in the final analysis, HR can make or break an M&A. Employee productivity is affected by HR issues. During the process of mergers and acquisition the bank employees faced changes in their jobs in terms of transfers, promotions and insecurity. Further show that there were changes in the employee behavior in the form of HR issues as morale, motivation, competency, organizational commitment and job satisfaction. Some of the research evidences show that the employee satisfaction causes the increase in customer satisfaction, productivity or profitability of organization and it also influences the business outcomes as well.

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Training Needs Identification By Management Students through Self - Perceived Rating Of Soft Skills

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Abstract

The present education system in management colleges is focused solely on imparting theoretical concepts and do not accord importance to soft skills which are primarily sought by industry at entry level .

In this context , the self-perceived rating of soft skills is important for management students as they need to know and realise the current status of their ability w,r,t English proficiency , interpersonal skills, problem solving and decision making , creativity , emotional intelligence, conflict management stress management ,time management , team skills and leadership skills in relation to expectations of the industry .

It is only when they the current state is known can the gaps be identified and necessary action be initiated to bridge the gap to reach the desired state.

For this to happen , the students would need to introspect and identify the soft skills areas of deficiency wherein they would need to acquire focused training from an employability perspective.

This paper captures the collective perception of management students w,r,t industry relevant soft skills and their current state of proficiency .

Key Words

Perception , Focused Skills training , Soft Skills, Employability

Introduction

Talent is the basis for competition and need to be nurtured in management institutes . Supply chain refers to a mindset to be developed by management institutes which would cater to the needs of the industry by providing adequate training and development opportunities for the students in the college. .

It is widely believed that what is taught in management colleges is not relevant for industry and that what is relevant for industry is not taught in management colleges.

There have been a number of surveys conducted to this effect to gauge the needs of the industry and ways to address them from an employers ,employees and faculty perspective . It would be

of interest to know about the perception of the management students w.r.t their soft skill proficiency and subsequent identification of training needs .. .

A primary research was conducted to gauge the perception of management student thru self - perceived rating of soft skills.

Literature Review

Sno	Author /Year	Key Findings
		Written Communication
1	Bhatia and Hynes, 1996	Highly rated course topics by graduate business students are making presentations, writing memos and letters, listening and interpersonal communication, impromptu speaking, and business report formats.
2	Martyn, New Zealand Herald, 2005	The "ability to communicate accurately, clearly and at a professional level" is cited as one of the top three skills repeatedly asked for by employers
3	Jackson, 2010	From a lecturer's perspective, advances in the age of technology have caused a worrying decline in the graduate's written word; exacerbated by the everyday use of abbreviated English in texts and emails
		Oral Communication
4	Maes, Weldy and Icenogle, 1997	Findings of this study show that oral communication is the most important competency for college graduates entering workforce and that the oral skill most important for entry level graduate are following: instruction, listening, conversing and giving feedback. 5
5	CIHE, 2008	Employers considered good communication skills to be important yet many were unsatisfied with graduates' abilities in expressing themselves Investigating
		Investigating and Analysing skills (Critical thinking)

6	"Q&A", 1996, as cited in Braun, 2004, p. 232	"Business schools should really be teaching critical thinking more than anything else"
7	Awayiga, Onumah and Tsameny, 2010	Analytical/critical thinking was rated as the most important professional skill by both the employers and the graduates.
Sno	**Author /Year**	**Key Findings**
8	Gokuladas, 2010	Verbal reasoning, logical reasoning and soft skills was a stronger predictor of employability than grade obtained in technical education
		Planning and Organizing (Time Management)
9	Mallick and Chaudhury, 2000	Academicians and Practitioners claim that a priority for improvement in marketing education is to teach the graduates the ability to 'set priorit
10	CIHE, 2008	Planning and organizing was considered the 6th most important skill when recruiting graduates
		Negotiating and Persuading
11	Curry et al., 2003	Of 24 transferable skills, negotiation was identified by Irish employers as the skill they were least satisfied with in recent graduates
12	IOD, 2007	Influencing and negotiation skills were some of the skills experiencing the most significant gap between required and satisfaction ratings of surveyed UK employers
		Cooperating (Interpersonal Skills)

13	FSSC, 2007	Interpersonal skills was identified as a key area for improvement in business graduates in the UK
14	Chaturvedi, Yadav and Bajpai, 2011	The authors conclude that, when it comes to being a good manager or leader, you must master the hard skills of your specific job as well as the soft skills of interpersonal relations
		Leadership
15	Brownell and Chung, 2001	The authors argued that competency based education provides the "most effective means for preparing graduate business students to become leaders in a truly global market place
16	Benjamin and Reilly, 2011	The researchers elaborated that leadership development is often cited as an important organizational priority
		Numeracy
17	IOD, 2007	Numeracy was ranked as the 6th most important employability skill in recent graduates.
Sno	**Author /Year**	**Key Findings**
18	Teckchandany, and Ahuja, 2013	
		India comprises of financial institutions, banks, insurance companies and various nonbanking finance companies which offer immense opportunities to management graduates looking for specialized jobs in finance area. Some of the skill sets required for such jobs include analytical ability and quantitative skills
		Emotional Intelligence
19	Joyner and Mann, 2011	They conclude that emotional intelligence (EI) is gaining ground in academic settings

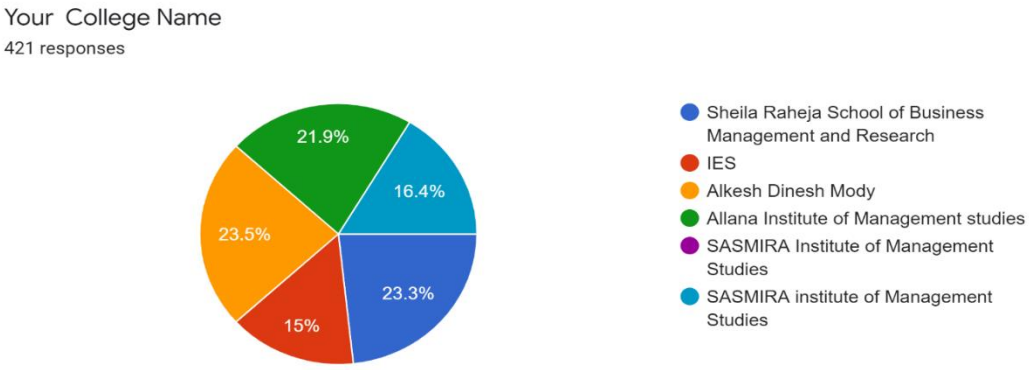
		Experiential Learning (Internship)
20	Chynoweth, 2012	Internship programs improves the employability of new graduates
21	Joshi, 2012	There is a need to introduce a new Experiential Learning Pedagogy
		Attitude
22	Crayford, 2012	There is a need for personal development, employability skills and attributes of an entrepreneurial mind-set among graduates for the post 2011 workplace

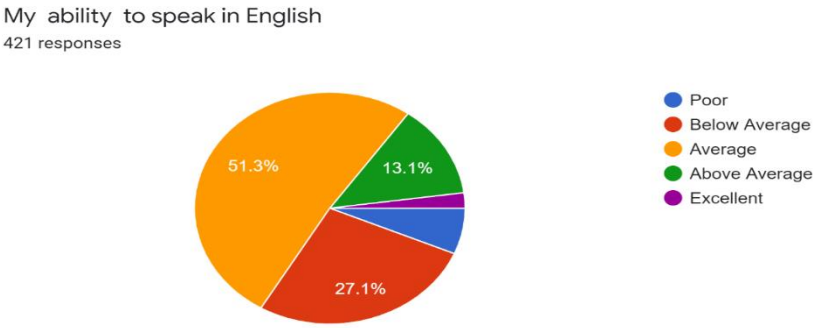
Research Method

A primary research was carried out thru a survey .

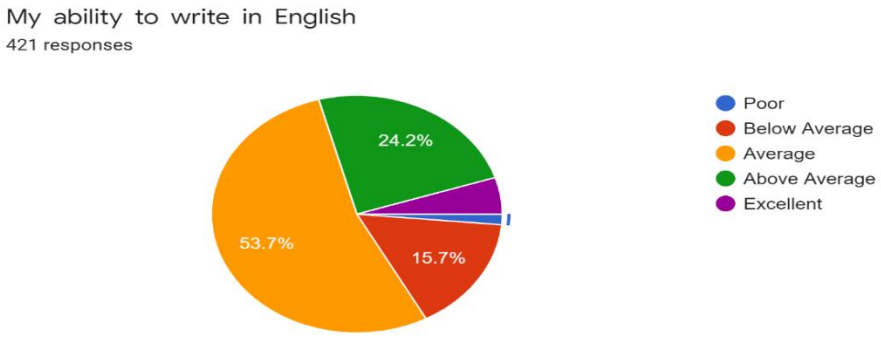
The Questionnaire was newly designed, developed , reviewed and administered using Google Forms to 400 + management students across five management institutes located in Mumbai offering the MMS course of Mumbai university ..

The survey responses were then collected and analysed .

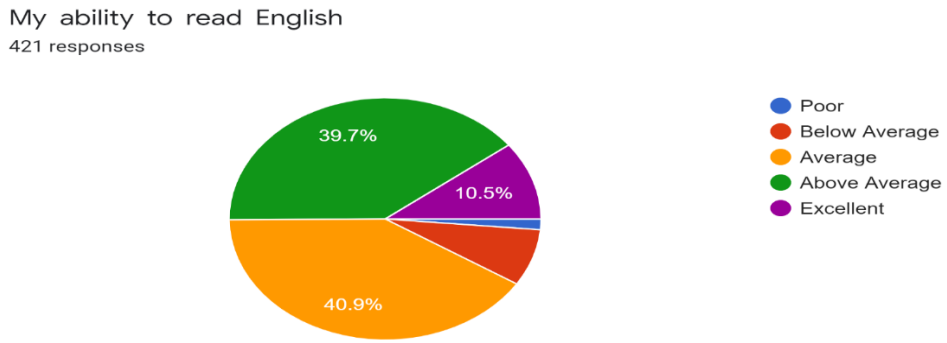




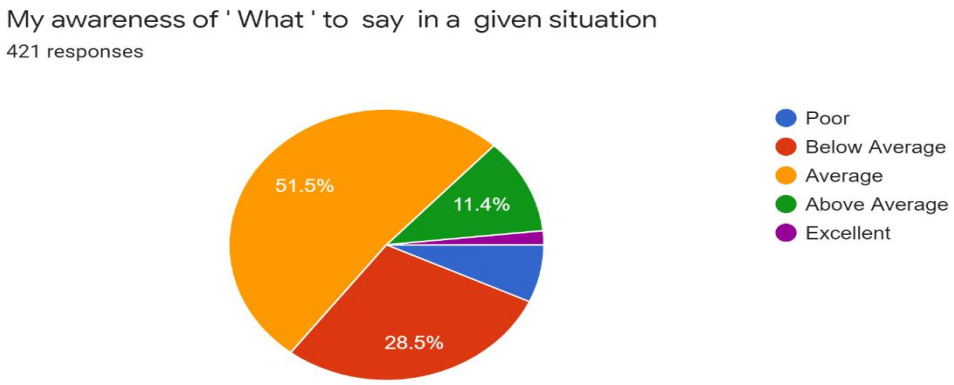
One out of every three (33 %) students feel that they are below average in Speaking English



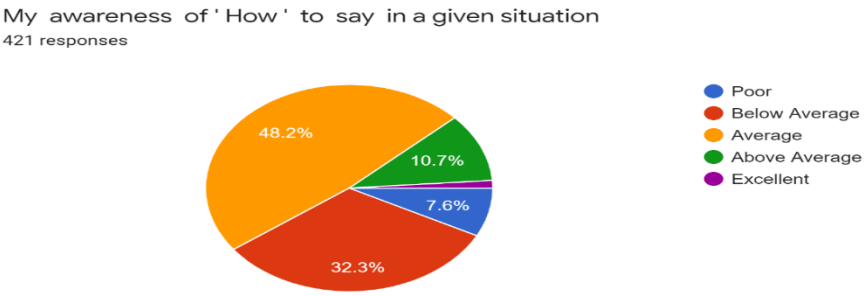
One out of every five (20 %) feel that they are below average in written English



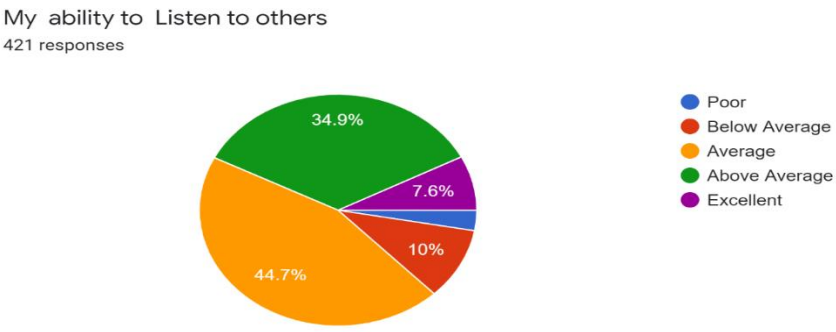
One out of every ten students (10 %) feel that they are below average in reading English



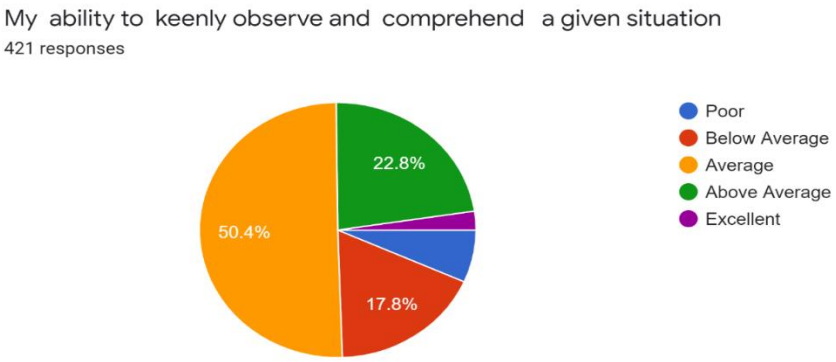
One out of every three students (33 %) feel that are below average in their awareness of what to say in a given situation



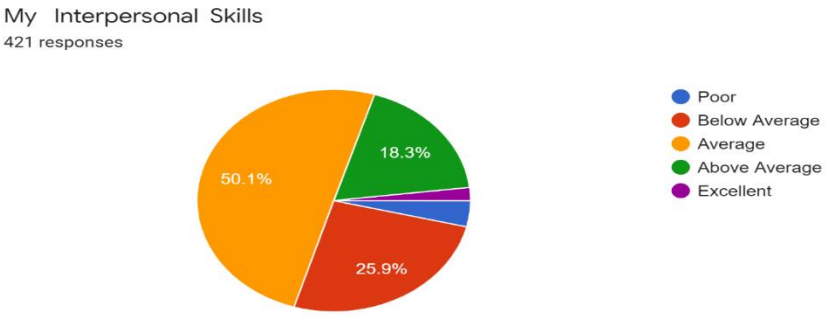
Two out of every five students feel that they are below average in their awareness of How to say in a given situation



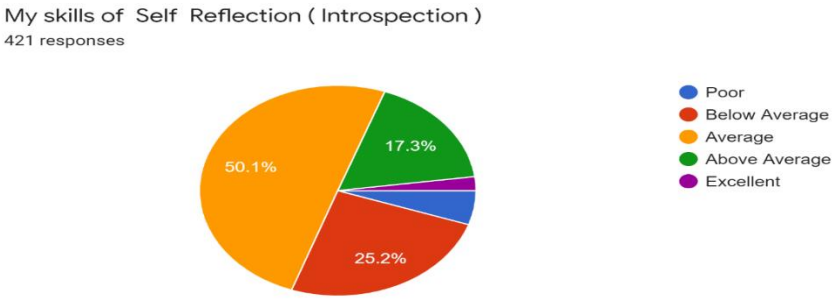
One out of every eight students (12 %) feel that they are below average in their ability to listen to other



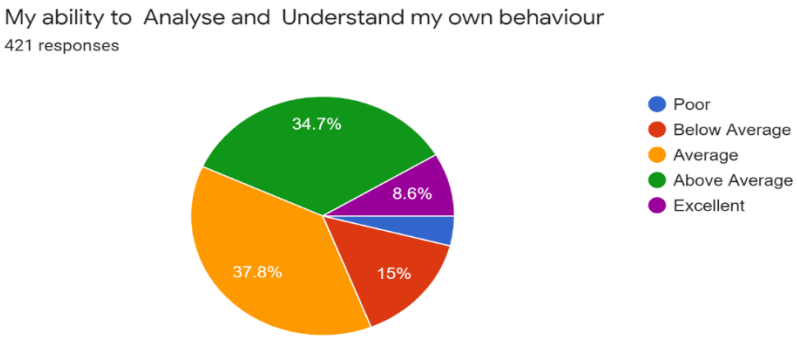
One out every four feel that they are below average n their ability to keenly observe and comprehend a situation



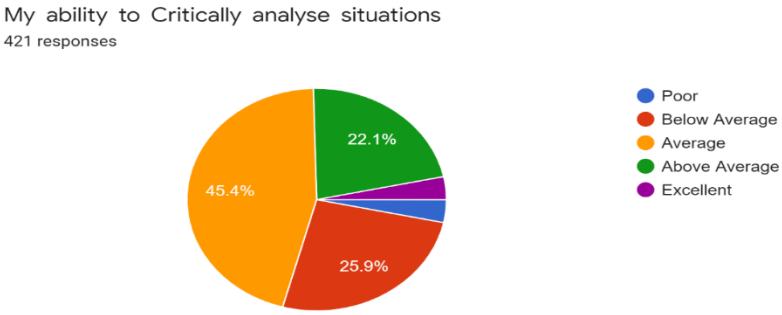
Three out of every ten (30 %)students feel that they are below average in interpersonal skills



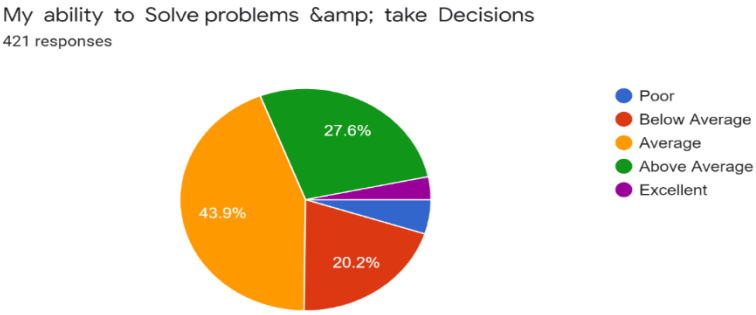
Three out of every ten students (30 %) feel that they are below average in their skills of self reflection



Three out of every five students (20 %) feel that they are below average in their ability to analyse and understand their own behaviour

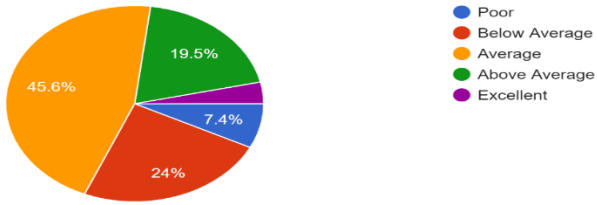


Three out of every ten students (30 %) feel that the are below average in their ability to critically analyse situations



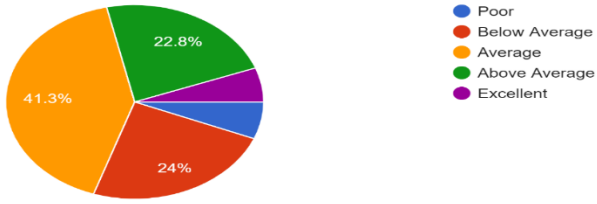
One out of every four students feel that they are below average in their ability to solve problems and take important decisions

My skills in Creativity
421 responses



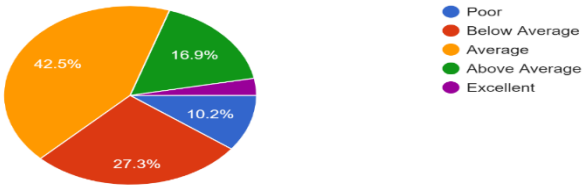
Three out of every ten students (30 %) feel that they are below average in creativity skills

My awareness of my Emotional Quotient
421 responses



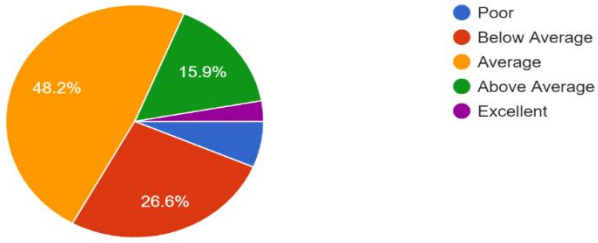
Three out of every ten (30 %) students feel that they are below average in their awareness of emotional quotient

My awareness of how to improve my Emotional Quotient
421 responses

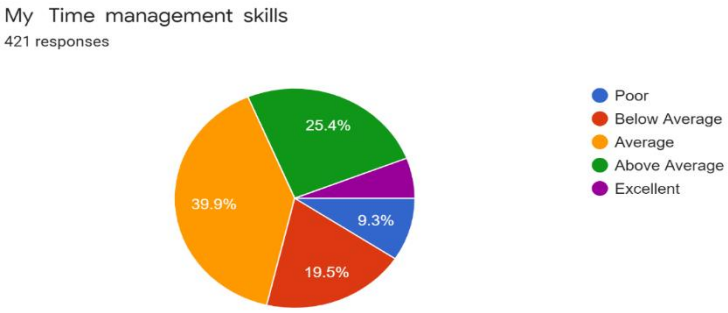


Four out of very Ten students (40 %) feel that they are below average in their awareness to improve emotional quotient

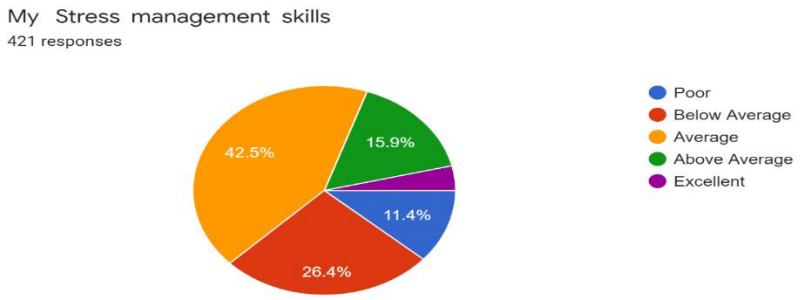
My Conflict management skills
421 responses

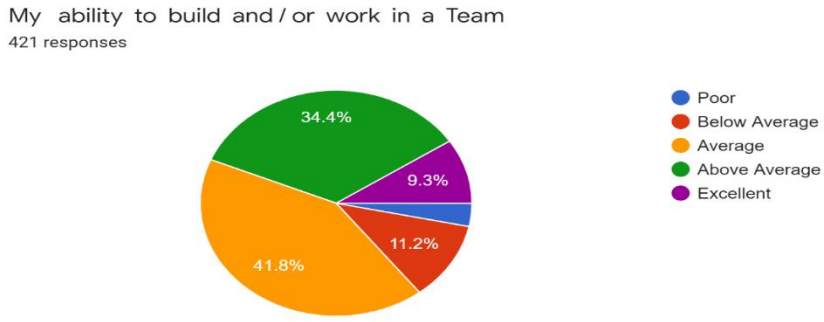


Three out of every ten students (30 %) feel they are below average in their conflict management skills

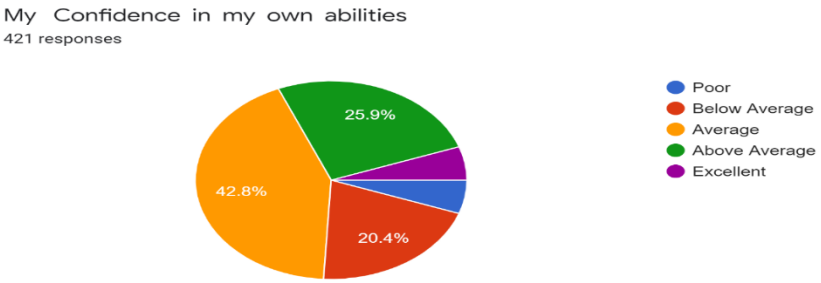


Three out of every ten (30 %) students feel that they are below average in their time management skills

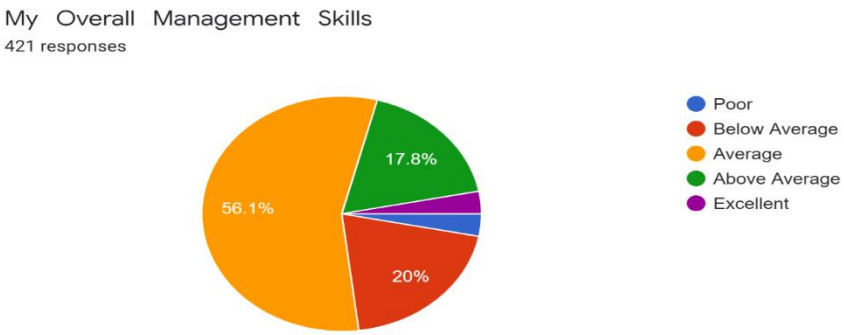




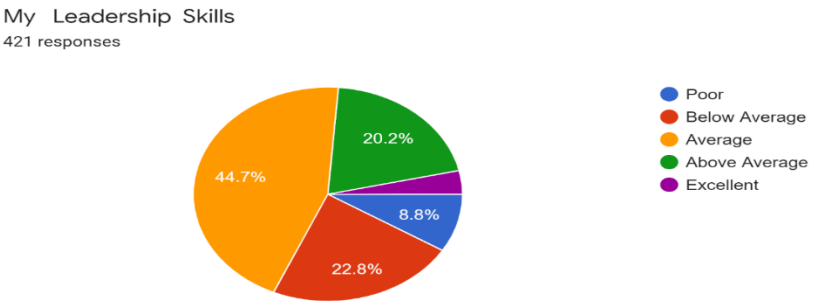
One out of every eight students (12 %) feel that they are below average int her ability to build and work in a team



One out of every four students (25%) feel that they are below average in their confidence in their own abilities



One out of every four students (25 %) feel that they are below average in their overall management skills



Three out of every ten students (30 %) feel that they are below average in their leadership skills

Data Analysis

ANOVA
Case 1

Ho : There is no difference between Time Management skills of the various groups of students with varied work experience

Ha : There is a difference between Time Management skills of the various groups of students with varied work experience

	Nil	0 to 12 months	13 to 24 months	25 to 36 months	above 36 months	
Below Average	68	23	10	9	1	111
Average	102	39	12	8	7	168
Above Average	68	31	17	8	7	131
						410

X1	79		
X2	31	X g	410
X3	13		27
X4	8		
X5	5		

SS tot	1654	19	300	336	693	7000
	5575	136	235	374	413	19787
	1654	13	107	374	413	10747
						146434

SS within	128	64	9	0	4	206
	514	64	1	0	4	583
	128	0	16	0	25	170
						958

SS between	145475		
		MSS	
df	4	BET	36368.86
SS within	958	MSS within	95.8
df	10		

F cal MSS bet 379.6332
MSS within

F tab @ 4 ,10 df α =0.05 is 5.96
F cal is greater than F tab cal
Null Hypothesis is rejected
We conclude that there is a significant difference between Time Management skills of the various groups of students with work experience

ANOVA
Case 2

Ho: There is no difference in Interpersonal skills of various groups of students with varied work experience
Ha: There is a difference in Interpersonal skills of various groups of students with varied work experience

	Nil	1 to 12 months	13 to 24 months	25 to 36 months	above 36 months	
Below Average	79	30	8	5	4	126
Average	115	48	24	14	8	209
Above Average	40	23	7	5	2	77
	234	101	39	24	14	412

X2 34
X3 13 Xg 27
X4 8
X5 5

SS Tot	2656	6	379	505	551	4096
	7662	422	12	181	379	8656
	157	20	419	505	649	1749
						14502

SS within	1	13	25	9	16	64
	1369	205	121	36	4900	6631
	1444	114	36	9	5776	7379
						14075

MS bet	SS between	427	106.75
	Df	4	
MS within	SS within	14074.67	1407.467
	Df	10	
Fcal	MS between / MS within	0.075845	

F tab@ 4,10 df $\alpha = 0.05$ is 5.96 .

Fcal is less than Ftab and hence Null Hypothesis is accepted
We conclude that there is no difference in Interpersonal skills of various groups of students with work experience

Chi -Square Test
Case 1

Ho : Interpersonal skills ability is independent of gender of students
Ha : Interpersonal skills ability is dependent on gender of students

	Below Average	Average	Above Average	
Male	70	133	52	255
Female	55	77	33	165
	125	210	85	420

O	E	O-E	O-E^2	Chi Sq - = (O-E)^2 /E
70	75.89	-5.89	34.69	0.46
133	127.5	5.5	30.25	0.24
52	51.6	0.4	0.16	0.00
55	49.1	5.9	34.81	0.71
77	82.5	-5.5	30.25	0.37
33	33.39	-0.39	0.15	0.00
				1.78

Chi Sq Tab df =2 @ $\alpha = 0.05$ 5.99
Chi Sq cal is less than the Chi sq tab value
Null Hypothesis is accepted

We conclude that Interpersonal skill is independent of gender

Correlation Analysis
Case 1

Ability to write in English	X
Ability to speak in English	Y

Correlation Coeff r = Sum (XY)^2 / Sq rt (sum X)^ 2 (Sum Y) ^2

1715	1715	1715	0.9597	95.97
1541 * 2074	Sq rt (3196034)	1787		

We conclude that there is a high positive correlation (95 .9 %) between each students perception of his / her ability (measured thru three categories , namely above average , average and below average) to speak and write in English ..

Correlation Analysis
Case 2

Awareness of what to say in a given situation	X
Ability to keenly observe and comprehend a situation	Y

Correlation Coeff r =	1582	1582	1582	0.936	93.6
	1508 * 1895	Sq rt (2857660)	1690		

We conclude that there is a high positive correlation (93.6 %) between each students perception of his / her ability to keenly observe and comprehend a situation with that of what to say in given situation ..

Chi Square Test

Case 3

Ho : Conflict management skills is independent of Emotional awareness

Ha : Conflict Management skill is dependent on Emotional awareness

Conflict Management Skills

		Below Average	Average	Above Average	
Emotional Awareness	Below Average	75	37	12	124
	Average	42	108	24	174
	Above Average	20	58	42	120
		137	203	78	418

O	E	O-E	(O-E)^2	Chi Sq =(O-E)^2 /E
75	41	34	1181	29
37	60	-23	539	9
12	23	-11	124	5
42	57	-15	226	4
108	85	23	552	7
24	32	-8	72	2
20	6	14	203	35
58	58	0	0	0
42	22	20	384	17
				109

Chi square 3-1) (3-1) Df 4

Chi

Tabulated Ch Sq for 4 df @ $\alpha = .05$ 9.49

Cal value is more than table value

Null hypothesis is rejected

We conclude that Conflict management skill is dependent on Emotional awareness

Square

Case 4

Ho : What to say is independent of ability to comprehend a situation
Ha : What to say is dependent on ability to comprehend a situation

What to Say

Ability to Comprehend	Below Average	Average	Above Average
Below Average	71	62	16
Average	31	129	56
Above Average	0	24	32
	102	215	104

O	E	O-E	(O-E)^2
71	36	35	1218
62	110	-48	2334
16	14	2	5
31	52	-21	455
129	110	19	349
56	53	3	7
0	14	-14	184
24	29	-5	21
32	14	18	330

Degree of freedom (3-1) (3-1) = 4
Chi Sq Tab df 4 $\alpha = 0.05$ 9.49

Chi Sq cal is greater than the tab value
Hypothesis is rejected
We conclude that what to say is dependent on ability to comprehend a situation

Conclusions

Communication skills in English have been identified as indispensable workplace tools for success in business (Hynes & Bhatia, 1996). English is considered the primary prerequisite qualification for employment. The knowledge of English is considered one of the employability skills. The survey indicated that the ability to speak in English is dependent on medium of instruction thus clearly indicating that English medium students have an advantage over vernacular medium students when it comes to speaking in English ,

It was observed that 35 % students are BCom ,20 % BE /Btech , 12 % BSC and 15 % BMS . 40 % of parents of students are of SSC or lower qualification . 62 % of students surveyed were Males and 38 % were Females . 75 % students are from English medium and 25 % are from Vernacular medium .

We found that there is a significant difference between Time Management skills of the various groups of students with work experience ..It indicates that with experience the students learn the value of time management in an organisation and adapt accordingly

It was inferred that that there is no difference in Interpersonal skills of various groups of students with work experience .This would mean that focussed training need to be imparted to students as experience in an organisation (even up to three years) do not necessarily ensure improvement in interpersonal skills ..

We conclude that interpersonal skills is independent of gender of students and that there is no significant difference in interpersonal skills among males and female students It was also possible to establish the dependency of conflict management skills on emotional awareness of students.

In case of the soft skills listed in the questionnaire which include english proficiency , listening , interpersonal skills ,introspection, critical analysis, creativity ,decision making, emotional intelligence, conflict management ,time management ,stress management ,team management , overall management and leadership skills it was found that on an average about 50 % of students rated themselves just " average " and about 30 % of students rated themselves " below average " necessitating the need for industry relevant focused skills training to be imparted at management colleges .

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Basic Income: The solution to uplift people who are unemployed in India due to Industry 4.0

Pranjal Jha
BIT Mesra

Abstract:

Basic Income {BI} is simply providing a large portion of people in a country with a guaranteed amount of money every month with some or no strings attached. There have been various research on how people would spend that money and we have various insights on what impact does it cause to the people and is it effective or not.

In the year 2017, then CEA Arvind Subramanian proposed a Quasi-Universal Basic Rural Income, providing socially and economically people with guaranteed pay of Rs. 18000/year instead of the other various schemes run by the government in support of the Farmers and Daily Wage Workers. [a] In the same way I am proposing BI for all the unemployed youths losing jobs due to automation and industry 4.0.

In this paper, I would cite the reason why BI is important for uplifting the poor with various insights from different countries and how to implement BI for the people losing a job due to UBI in India, how much it would cost to the government and who will pay for it.

Keywords: Basic Income, Universal Basic Income, Negative Income Tax, GST, Gross Income, Revenue per employee, Digital Services Tax, OECD.

Introduction:

With the increase of Technology from 1985-2015 there has been a shift of jobs from Agricultural to Other sectors. Even though Technology took jobs it created jobs as well, but with the rise of the Industry 4.0, even the people who drive the industry are sceptical about the impact on jobs this revolution will have.

It is estimated that a total of 56 million jobs will be lost due to Automation by 2030 in India alone and a whopping 800 million jobs of the total 2800 million workforce around the globe. Agriculture, forestry, fishing, transportation and warehousing are among sectors where job losses from automation will be the most acute for India's workers.[1]

With such adverse effects going to occur due to Automation there is a Global outcry against it, even to the extent that people have started having their doubts on Capitalism.

To tackle the problem of unemployment there are many methods, one of them which is grabbing attention is **Universal Basic Income or Negative Income Tax**.

Why UBI or NIT?

Universal Basic Income will allow people to get permanent stipend so that they can have financial security in life and can try new different innovative things instead of about worrying about their finances.

A Negative Income Tax is a system of refundable tax credits that guarantees eligible tax filers a certain minimum income. Tax filers with no income from other sources receive the full NIT benefit in cash, thereby providing them with a basic income guarantee (BIG).

And with increasing inequality in pay and with the gap between the rich and poor widening, the standards of the poor can be significantly increased by BI even enabling them to use the tools of capitalism and thus having a better lifestyle.[2]

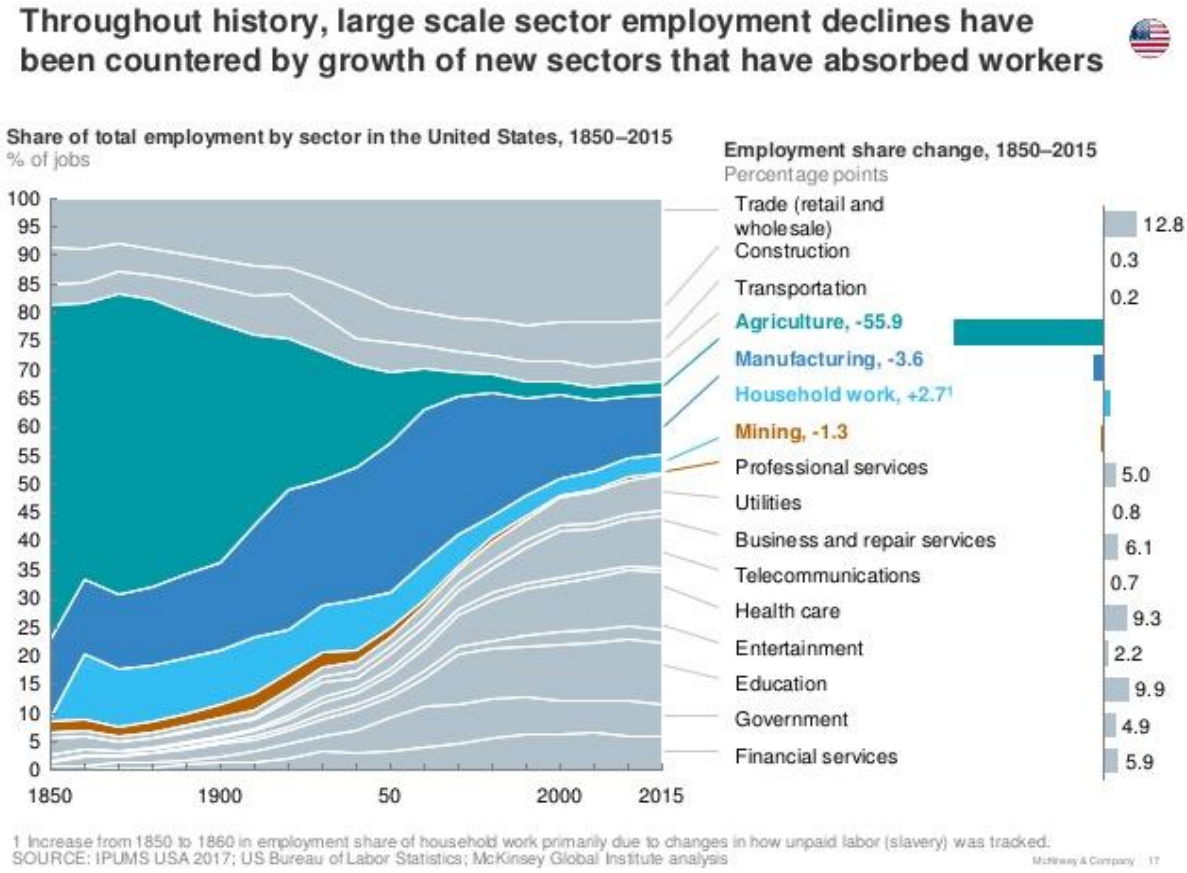

Figure 1[1]

Literature Review:

From June 2011- March 2012, a pilot program of basic income was done in the state of Madhya Pradesh, where people with income lower than $100/month were given $4.4/month per adult and $2.2/month per child.

On observation, it was found that there was a dramatic improvement in assets, especially in the tribal village, the poorest of the villages. For example, the percentage of households which had at least one bed went up from 35.5% to 83%. Mobile phone ownership increased from 9% to 61% and the ownership of scooters or motorbikes rose from 3% to 30%. By the end of the project, the proportion of children with normal weight for age had increased from 39% to 59%, the effect was greater on girls (25% increase) than on boys (14% increase) and the proportion of households reporting sufficient income to satisfy food needs rose from 52% to 78%.[3]

A common critique of cash transfers all over the world is that they will make people lazy and dependent on government support, unable and unwilling to improve their lot. The pilot thoroughly refutes this notion. Instead, the extra income created opportunities for people to start improving their lives. While the evaluation found a slight decrease in overall wage labour, this was mainly because women shifted from low paid wage labour away from the home to work on their fields. The cash transfers increased the bargaining power of employees versus employers, enabling those living in poverty to avoid exploitative employment relationships.[3]

Going through all the above results don't conclude that BI is all good and must be implemented over the total population, we have just shown one side of the picture.

Now, we will see the analysis of the data provided by the BI pilot program in Finland where 2000 people aged 25-58 who received unemployment benefits were given 560 euros/month.

According to the analysis of the register data, basic income recipients were no better or worse at finding employment than those in the control group during the first year of the experiment, and in this respect, there are no statistically significant differences between the groups. The recipients of basic income had half a day more of employment in the open labour market than the control group. Having earnings from the open or subsidised labour market was more frequent among the basic income recipients than in the control group by one percentage point. Then again, the earnings and income from self-employment were on average 21 euros lower in the test group than in the control group, the wellbeing of the basic income recipients was better than that of the control group. Those in the test group experienced significantly fewer problems related to health, stress and ability to concentrate than those in the control group. According to the results, those in the test group were also considerably more confident in their future and their ability to influence societal issues than the control group.

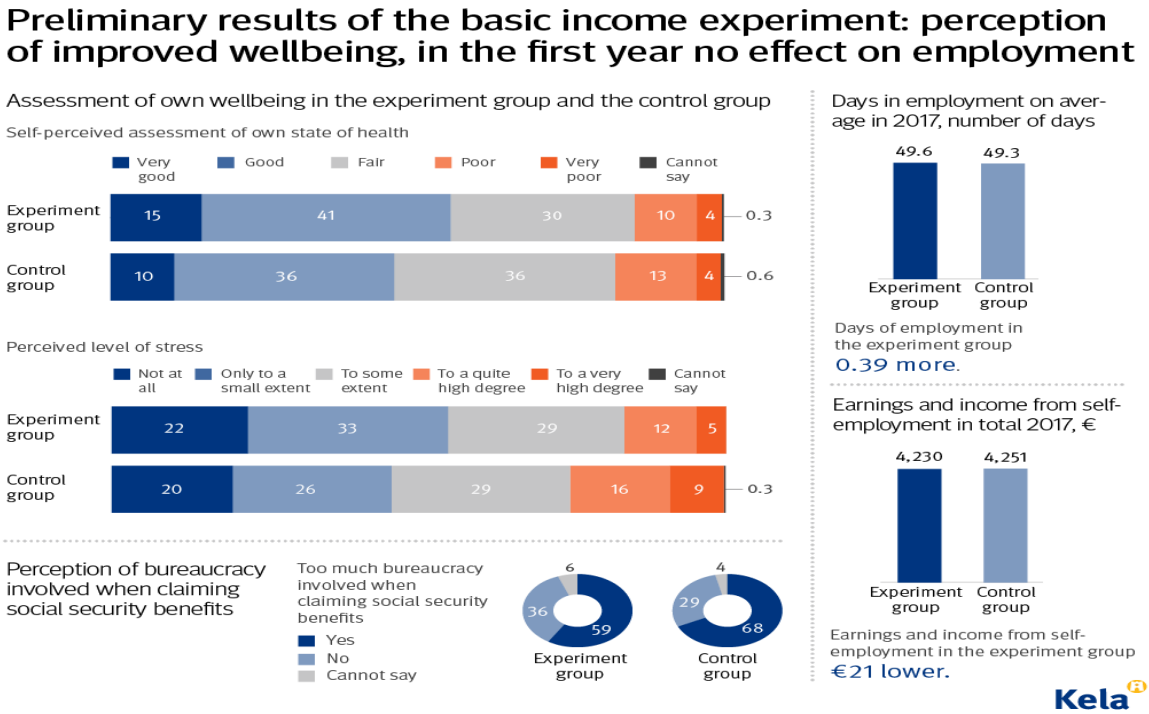

Figure 2

Data Analysis:

Hence, by looking at the 2 studies on BI we can't come to a decisive conclusion as the results are preliminary, but it certainly shows that *Basic Income should be given to such an extent that it is enough to make a difference to living standards, but not enough to improve them considerably.*

Excessive basic income or Basic income to the somewhat well-off people doesn't help in improving the society much as seen in the report from Finland.

With the top 10% of Indians having more than 74% of the total wealth and the bottom half having just a mere 2.8%, the income inequality is an increasing problem in India. With this kind of broken economy, the Economy can flourish if the poor and the neglected are given a bit of support to uplift themselves from this kind of condition.[5]

Though the Indian Government has tons of schemes and policies to help the socially and economically backward, but those schemes and policies are not generating fruitful results as there is lots of hindrance in growth due to too much bureaucracy, but as seen in the survey results of Finland, people do think that BI has comparatively less bureaucracy than other welfare schemes.

Thus, from the results of the above survey, we can conclude that BI is the way forward to uplift the poor in India.

Research Method:

NIT for unemployed people:

UBI and an NIT designed to achieve the same redistributive effect would impose the same marginal rates of taxation on other sources of income, but that the overall tax burden required to fund an NIT would be much smaller than for an equivalent UBI.[2]

NIT can be modelled using the following terms:

U = The total number of population units subject to the NIT

G = The maximum NIT benefit

Y = The taxable income received by a population unit within U

t = The NIT or take-back rate

P = The NIT payment, if any, received by a population unit within U

Using these terms, the following relationships can be defined:

G/t = The breakeven level of Y (the level at which P reaches zero) ……. 1

$P = G - tY$ for $Y < (G/t)$ …….2

$P = 0$ for $Y > (G/t)$ …….3

The cost (C) of an NIT (also its redistributive effect) can be expressed as the sum of the NIT payments (P) received by all population units comprising U, as follows.

$C = \sum P_i$ for i = 1 to U…… (4)

Where

C = The aggregate cost of the NIT program

P_i = The NIT payment (P) received by the population unit within U.

Alternatively, the program's cost can be expressed as the sum of the tax payments made by individuals with incomes greater than the breakeven level, as follows:

$C = tY_x – GX$ …...5

Where

X = The number of population units in U for which Y > G/t

Y_x = The aggregate taxable income received by the population units comprising X

In other words, if X equals the number of population units with incomes above the breakeven level, and YX equals the aggregate taxable income received by those population units, the aggregate cost of an NIT (C) can be estimated by multiplying YX by the NIT rate (t) and subtracting from that figure the aggregate value of the NIT credit (GX) that those population units would be permitted to deduct from that tax liability.

Thus, the cost of an NIT can be estimated in either of two ways: by estimating the total payments the system is likely to make to population units with taxable incomes below the breakeven level (equation 4), or by estimating the total tax payments the system is likely to receive from population units with taxable incomes above the breakeven level (equation 5).

For an NIT to have the same redistributive effect as a UBI, all that is required is that the maximum NIT benefit (G) equals the UBI benefit and that the tax rate and tax base used to fund the NIT and the UBI be the same. For a UBI funded with a flat tax, this tax rate will equal the aggregate cost of the UBI (the sum of all UBI benefit payments) divided by aggregate taxable income (Y).[2]

Eligibility:

The Eligibility Criteria for this policy can be inspired by PMRY (Prime Minister's Rozgar Yojana), the flagship welfare scheme for providing sustainable self-development opportunities to Unemployed Youth.

The criteria are as follows,

Sno.	Parameter	Groups to be included
1	Age	15+
2	Educational Qualification	Graduate and above. Preference will be given to those who have been trained for any trade-in Government recognised approved institutions for a duration of at least six months.

3	Family Income	Neither the income of the beneficiary along with the spouse nor the income of parents of the beneficiaries shall exceed Rs. 250,000/- p.a. and shall exceed zero.
4	Activities Covered	All economically viable activities excluding agriculture and allied activities.
5	Reservation	Preference should be given to weaker sections including women. The scheme envisages 22.5% reservation for SC/ST and 27% for Other Backward Class (OBCs). In case SC/ST/OBC candidates are not available, State/UTs Govt. will be competent to consider other categories of candidates under PMRY.
6	Residence	Permanent resident of the area for at least 3 years.

According to the Periodic Labour Force Survey (PLFS):

The unemployment rate among the rural male youth (persons of age 15-29 years) was 17.4 per cent while the unemployment rate among the rural female youth was 13.6 per cent during 2017-18. The unemployment rate among the urban male youth was 18.7 per cent in 2017-18 while the unemployment rate for urban female youth was 27.2 per cent during 2017-18.

Among persons of age 15-29 years share of the educated was nearly 52.6 per cent among rural males, 43.4 per cent among rural females, 65.8 per cent among urban males and 65.4 per cent of urban females.

Using the census 2011 data of the age group of 5-19 years to take out the population of people between 15-29 in 2021, we get

21.12 million unemployed educated rural youths and 20.18 million unemployed educated urban youths are eligible for Negative Interest Rate as well.[6]

Cost of the project:

According to Income Tax Return Statistics Assessment year 2018-19,

The number of Individuals filing for Returns within a gross total income Range of 0 < income < 1,50,000 is 23,78,193.

The number of HUF filing for Returns within a gross total income Range of 0 < income < 2,50,000 is 4,64,263.[7]

- NIT for Individuals

U = 23,78,193

Y = 150,000/year [maximum pay between 0-150,000]

G = 18,000/year

t = 12%

P = 18,000 – 0.12*82,000[average pay between 0-150,000]

P = Rs. 8160/year

C = 8160*2378193 = Rs. 1940,60,54,880/year

- NIT for HUF

U = 4,63,263

Y = 250,000/year [maximum pay between 0-250,000]

G = 30,000/year

t = 12%

P = 30,000 – 0.12*164,500[average pay between 0-250,000]

P = Rs. 10,260/year

C = 10,260*4,63,263 = Rs. 475,30,78,380/year

Total NIT cost is Rs.2415,91,33,260/year, according to the IT returns filed.[7]

The cost mentioned above will not be exact cost, it may not be eve near the exact cost as many of the data is not available, and we can't be sure that the informal sector may even have a PAN card. As you can notice that the unemployment level in the youth of India is in the range of 40 million and the data we used here is just touching 3 million. So, you can be pretty sure that the program will cost around 15X the cost estimated in the data. The data above doesn't even exclude people with low educational qualifications.

Hence the cost can be near Rs.36238,66,99,890/year or Rs. (3.5-4)0000,00,00,000/year i.e. 0.175-0.2% GDP.

The cost above is stated just to give a rough idea that how much the program can cost the Indian Government.

With this estimation, I would like to propose take-back rate(t) slabs for the proposed NIT, since our country is very diverse, and the cost of the project is also high I propose slabs.

Gross Income (GI)	**t(Rural)**	**t(Urban)**
Rs. 0<GI<80,000	12%	12%
Rs. 80,000<GI<120,000	9%	10%
Rs. 120,000<GI<150,000	5%	8%

NIT for Individual (for HUF multiply GI by 1.67)

Who will pay?

The companies who are not hiring anymore and using the Industry 4.0 technology will pay the majority of the project, through TAXES and CESS.

There are 3 kinds of Taxes and Cess that I propose:

1. Unemployment Basic Income Tax [UBIT], this is a cess that would be paid by all companies with revenue higher than Rs.500,00,00,000 and having an earnings per employee ratio of more than Rs. 1 million.

Earning/Employee	**Percentage Cess on Gross Net Income**
Rs. 1 million-2 million	1%
Rs. 2 million-3 million	1.5%
Rs. 3 million-5 million	1.75%
Rs. 5 million-10 million	2%
Rs. 10 million +	3.3%

2. IGST Slab Increase,

Previous Rate	**New Rate**
5%	5%
12%	15%
18%	20%
28%	30%

3. Digital Tax, this is a new way to tax the companies of the digital economy, the Model of French digital services tax can be followed, we even have various models from a different organisation like the OECD and with an international effort to tax the MNCs is also underway. The Indian government also has its version of digital tax known as equalisation levy which is at 6% earning Rs. 939 crores in 2017-18 which must increase as internet companies use tax havens to avoid paying taxes, the government should come up with an idea to tax the big tech firms doing business in India.[8]

Revenue from UBIT

On average an Indian firm with revenue more than Rs. 500 crore has an Rs.2.7 million per employee [9] and Net Gross Income of Rs. 2,327 crore/year with 353 Companies.[7]

Hence the estimated collection of UBIC would be:

2,327*0.015*353 = Rs.12,321.5 crore/year

This is just an estimate as many companies may be in the different slabs and we are just taking the average.

Revenue from IGST increase

Now since Govt. doesn't release any specific GST data showing how much was the collection with the bifurcation of revenue for slabs.

So, here we have increased the GST slabs by 5% for their percentage.

That is, 5% becomes 5.25%

12% becomes 12.6%
18% becomes 19.08%
28% becomes 29.68%

Since the IGST revenue generation per month is around Rs. 50,000 crores.[10] So, the increase in revenue if we increase all the rates by 5% is R.2500 crores/ month or **Rs.30,000 crores/year.**

Hence, since the rates at which we estimate to increase the numbers is less than the above example we conclude that the revenue generation by an increase in IGST rates will be higher than the above example.

So, the total revenue from both the taxes is approximately Rs.42,000 crores which cross our estimated requirement of Rs. 40,000 crores.

Conclusion:

As we have seen above the Project is not impossible and not way too expensive if implemented properly, though I agree that the Data is inadequate, the project can be implemented.

So, the government must start pilot programs of its own to get the complete data and picture all the pros and cons of this project and even project an almost exact estimate of the cost of the project. The research available right now is not sufficient to come to a decisive conclusion as the Basic Income plan in India is in its early stages.

Basic Income in India is far but not too far and not inevitable, and to overcome the possibility of extreme job losses due to Automation, this is an excellent method and with NIT we can even check the Income of most of the citizens bringing all jobs into formal sector as well as NIT also costs less than UBI.

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A study conducted to measure the effectiveness of combining artificial intelligence and augmented reality with special reference to furniture industry

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ABSTRACT

In this research paper, researcher aimed to study and measure the effectiveness of combining AI and AR with special reference to Furniture Industry. This study aims to determine the factors for measurement of the effectiveness of combining AI and AR using behavioral science insights in Usability, User Interface, Level of Adoption and Awareness on furniture industry. Respondents were 153 millennials, male and female of different age group. The researcher employed a descriptive quantitative design and developed a valid self-constructed questionnaire as an instrument. The sampling technique used was random. Data gathered through survey, statistical tools SPSS V21 was used to test the hypothesis of the study. Researcher found out that factors identified are sufficient to study and measure the effectiveness of combining AI and AR.

Keywords: Artificial Intelligence (AI), Augmented Reality (AR), Awareness, Level of Adoption, Usability, User Interface

INTRODUCTION

AI and AR are two of the most promising technologies emerging in today's world. Combining AI and AR all together will help take sales forecasting to the next level, help the companies have deeper and better understanding of the customer's behavior pattern & preferences and design product and market them accordingly. AI can help collect consumer data hidden in keyword searches, social profiles, and other online data, for smarter and more effective digital ads. With the use of AI, the companies can generate, identify, work on the leads and follow up the same and eventually converting them into sales resulting into efficient bottom line. Along with AR can enable businesses to deliver marketing strategies in real time. This means customers can experience the products or services as they are meant to be. AR will enhance the retail experience. Marketing campaign as well as product visualization can be improved with AR. AI and AR are distinct technologies, but they can be used together to create unique experiences. AI is at the heart of AR platforms, making the two well-positioned to sync on a variety of applications. The result is mixed reality in a single physical environment — seeing that sofa in your living room before you click "Buy." Through examples like this, AI can interpret and enable AR platforms to act on real-time, real-world environments. This, though, is just the beginning for both AR and AI. The next step is for businesses, creatives, and experience makers to understand trends and best practices surrounding AR — and, from there, use the power of AI to produce innovative content and consumer experiences.

When done right, AI and AR work seamlessly together to create immersive experience.

LITERATURE REVIEW

According to the McKinsey quarterly (2013), AR is a technology that is predicted to be changing the retailing landscape within the next decade. It is a technology that enables the digital world to meet he physical world and further improve customer interaction within a totally new domain.

Ahmad Sukkar (2013) stated Artificial Intelligence as a science that aims at understanding of complicated metal process of human brain and then interpreting those mental processes to equivalent computer processes that increases the ability of computer to solve complicated problems.

Fatima S. J (2019), elucidated Augmented Reality as a trending technology that augment or superimposes an image generated by a computer system virtually into the real-world environment for the user's viewpoint using a smartphone or other hand held devices.

James Canella (2018) defines Artificial Intelligence as computerized system that intake data to perform task of intelligent beings in a way that maximizes its chance of success. Artificial Intelligence can merge the gap between the customer's idea and the practicality through the use of intuitive visualization tools.

Schwartz & Trubow (2011), has mentioned that AR can be viewed as an extension to the online shopping experience and is sometimes referred to as a link between reality and virtual reality.

OBJECTIVES

1. To understand the concept of AI & AR
2. To review the literature in the area of AI & AR
3. To analyze the factors responsible for the effectiveness of AI and AR
4. To identify the causal relationship between the factors responsible for effectiveness when combining AI & AR and demographic factors

HYPOTHESIS OF THE STUDY

H_0 – Demographic factors does not have a significant impact on the factors identified to measure the effectiveness of AI and AR

H_1 - Demographic factors does have a significant impact on the factors identified to measure the effectiveness of AI and AR

If $H_0 <= 0.05$, we reject the Null Hypothesis and accept the alternative hypothesis

If $H_1 > 0.05$, we accept the Null Hypothesis

RESEARCH METHODOLOGY

In this study, Qualitative and Quantitative research approaches (which include exploratory as well as descriptive) have been used in order to dig out the factors viz. Awareness, Level of Adoption Usability and User Interface adopted to measure the combining effectiveness of AI and AR with special reference of Furniture Industry.

- Primary data has been collected by conducting online survey along with structured interview.
- Secondary data has been collected through research journals, various websites and books.

DATA ANALYSIS AND INTERPRETATION

Table no – 4.1
Reliability Statistics

Cronbach's Alpha	N of Items
.737	15

Cronbach's Alpha is calculated as a measure of internal consistency. The closer the value, the greater is internal consistency of items in the instrument being assessed.

It is observed from the **Table no – 4.1** that reliability statistics for the entire project having the value **0.737** i.e. above **0.7**. Therefore, all items are suitable for conducting Factor Analysis.

TESTING OF HYPOTHESIS

Objective 3- To analyze the factors responsible for the effectiveness of AI and AR.

H_0 factors are identified will not measure the effectiveness of combining AI and AR.

H_1 factors are identified will measure the effectiveness of combining AI and AR.

Table no - 4.2
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.803
Bartlett's Test of Sphericity	Approx. Chi-Square	543.457
	Df	91
	Sig.	.000

The test comprises of **Kaiser-Meyer-Olkin (KMO Test) and Bartlett's Test** adequacy which was followed to test the case to variable ratio for analysis being conducted, applied and to check the suitability of component analysis.

As shown in **Table no – 4.2, result of KMO and Bartlett's Test** produce the value of **0.803** and **0.000** respectively. Then, the suggested value **0.6** and **0.05** for Factor Analysis to be suitable. Our significance value is less than **0.05**, which denotes that the sample is adequate.

Hence, it shows that the factors identified through the responses from different responses from different age groups and gender was suitable and valid to study the problem.

Therefore, H0 were rejected.

Table No – 4.3
Rotated Component Matrix[a]

	Component			
	1	2	3	4
Q1	-.012	.157	-.106	.751
Q2	-.115	.653	-.112	.052
Q3	.141	.020	.211	.636
Q5	.380	.633	.230	.198
Q6	.584	.216	-.036	.353
Q7	-.085	.447	.639	.092
Q8	-.058	.119	-.870	-.009

Q9	.257	.726	.192	.105
Q10	.691	.107	.029	-.174
Q11	.662	.484	-.035	-.045
Q12	.370	.577	.001	.021
Q13	.750	-.118	.014	.236
Q14	.438	.347	.207	.078
Q15	.495	.451	-.058	.270

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table no – 4.3 was used to understand the result of analysis. Components were rotated to make them simple to interpret. However, each variable has certain loading value from the different components but the value less than **0.40** were excluded from the table and only top loaded components were considered from the study.

Component 1 – Usability

(Q6, Q10, Q11, Q13, Q14, Q15)

Component 2 – User Interface

(Q2, Q5, Q9, Q12)

Component 3 – Level of Adoption

(Q7, Q8)

Component 4 – Awareness

(Q1, Q3)

Objective 4 – To identify the causal relationship between the factors responsible for effectiveness when combining AI &AR and demographic factors.

H_0 - Demographic factor doesn't have a significant impact on the factors identified to measure the effectiveness of A & AR.

H_1 - Demographic factor does have a significant impact on the factors identified to measure the effectiveness of AI & AR

Table no – 4.4 Kruskal-Wallis Test

Test Statistics[a,b]

	Effectiveness	Usability	User Interface	Level of Adoption	Awareness
Chi-Square	1.302	1.384	.317	1.578	9.335
Df	1	1	1	1	1
Asymp. Sig.	.254	.239	.573	.209	.002

a. Kruskal Wallis Test
b. Grouping Variable: Gender

Table no – 4.4 represents Kruskal-Wallis test based on Gender
The following data were based on Gender:

1. Since, **P>0.05** i.e. Gender and Effectiveness doesn't have a significant impact on measuring effectiveness of combining AI & AR

2. Since, **P>0.05** i.e. Gender and Usability doesn't have a significant impact on measuring effectiveness of combining AI & AR

3. Since, **P>0.05** i.e. Gender and User Interface doesn't have a significant impact on measuring effectiveness of combining AI & AR

4. Since, **P>0.05** i.e. Gender and Level of Adoption doesn't have a significant impact on measuring effectiveness of combining AI & AR

5.Since, **P<0.05** i.e. Gender and Awareness does have a significant impact on measuring effectiveness of combining AI & AR

Table no – 4.5

Test Statistics[a,b]

	Effectiveness	Usability	User_Interface	Level_of_Adoption	Awareness
Chi-Square	5.720	5.811	4.428	1.358	.753
Df	2	2	2	2	2
Asymp. Sig.	.057	.055	.109	.507	.686

a. Kruskal Wallis Test

b. Grouping Variable: Age Code

Table no – 4.5 represents Kruskal-Wallis test based on Age group

The following data were based on Age group:

1. Since, **P<=0.05** i.e. Age group and Effectiveness does have a significant impact on measuring effectiveness of combining AI & AR

2. Since, **P<=0.05** i.e. Age group and Usability does have a significant impact on measuring effectiveness of combining AI & AR

3. Since, **P>0.05** i.e. Age group and User Interface doesn't have a significant impact on measuring effectiveness of combining AI & AR

4. Since, **P>0.05** i.e. Age group and Level of Adoption doesn't have a significant impact on measuring effectiveness of combining AI & AR

5. Since, **P>0.05** i.e. Age group and Awareness doesn't have a significant impact on measuring effectiveness of combining AI & AR

FINDINGS

A sample size of 160 population was taken, out of which 153 respondents were studied.

- The three major factors which played an important in measuring effectiveness of combining AI and AR were Awareness, Level of Adoption Usability and User Interface.
- It has been found that now a day's people frequently use online platform for purchases.
- The study revealed that 50% of the respondents believe that utilization of AI and AR maximizes cost while 34% believes that it doesn't and the remaining respondents were confused.
- Majority of the respondents agree with the fact that use of combined technologies of AI and AR leads to ease of shopping, reduced purchasing time and has improvised the visualization of products as well as made customization easy.
- Mixed views were received regarding whether the combination of AI and AR improves transparency between customers and retailers.

SUGGESTIONS

- The app designed for the online shopping of furniture's should be easy to use, give improvised visualization and easy customizations of the products.
- Provide high level of privacy and convenience to the customers
- The technology should be efficiently used to reduce purchasing time.
- AI and AR technology should be made cost effective
- The use of combined technology of AI and AR should improve transparency between customers and retailers.

CONCLUSION

- The results revealed that there is a positive impact of identified factors i.e. Awareness, Level of Adoption Usability and User Interface on the effectiveness of combining two technologies together.
- It was also established that the identified drivers have a relationship with demographic factors as they help companies to measure the effectiveness and adopt marketing strategies accordingly.
- The combination of AI and AR technology will overall give a new edge to the furniture industry and will help customers in better decision making.
- As per the results, male's awareness is more and it impacts the usability of males. Similarly, in females though the awareness level is less it influences the usability of female is more as compared to male respondents.
- Effectiveness of combining AI and AR gets influenced as per age group, so companies can use these two technologies together by targeting age group of 26-30years as all factors i.e. Awareness, Level of Adoption Usability and User Interface have the highest mean rank.

LIMITATION OF THE PROJECT

1. Despite an exhaustive search of the literature, the researcher found very limited source related to the topic.
2. Sample size is restricted due to time and money constraints.
3. This study is limited to MUMBAI region of MAHARASHTRA only.

FUTURE SCOPE

The study can be carried forward by considering the Geographic factors, whether it has or doesn't have a significant impact on the factors identified to measure the effectiveness of AI and AR.

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Understanding the attitude of millennials towards in-app advertising in India

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EXECUTIVE SUMMARY

With the mobile market set to raise in India post the Jio disruption and the rise of the millennials who constitute the majority of the population, who use smartphones during the major hours of the day, it is no wonder that brands are looking to target this wide consumer base in one of the fastest rising market in the world. The research talks about the factors that influence the likes and dislikes of the user along with usage frequency, usage patterns and provide an overall perspective of millennial's opinion when it comes to in-app advertising.

KEYWORDS

In-app advertisement ,Advertising, Millennials, Mobile

INTRODUCTION

1.1 The rise of mobile industry

At the helm of 2018, India has become a success story of mobile adoption with the penetration of mobile devices not only confined to the tier 1 cities of India. Such is the pace of the rise of the industry that it is expected that in 2022, mobile penetration will reach 90%. This fact makes this study highly relevant to the times.

A major force behind this rise is the advent of Jio, in 2016. Now, even rural people could access the internet due to the highly relevant factor of affordability. Such is the situation of the market that there might be a mobile in every household but not a desktop. Jio is what made mobile marketing a technique for the masses.

Mobile penetration apart, what has grasped the modern marketer's imagination is that India had become the world's fastest rising economy for mobile apps with the steep rise of 41% in the first quarter of 2018.

To really talk about how localized the apps have become, let us take the case of Neighbourly, an app that is customized to the needs of the Indian consumers. The app is a source of information that is hyperlocal to the consumer where the consumers ask their neighbours in real time, with the ability to offer these solutions in local languages. Thus reaching a whole new demographic who may or may not speak English.

India also holds the distinction of being the fifth country in the world with the highest volume of downloads of games, following the US, China, Brazil and Russia. What makes the Indian market so special for the mobile and the advertising industry is that most of the population is youth and the industry of mobile gaming fails to show a sign of fatigue.

With this wave, comes a more nuanced and precise form of marketing with the help of high inflow of data to understand the audience and the games they play. In-game advertising is also a alluring avenue as people are generally more relaxed when they play mobile games, thus making them more receptive to advertising.

India lies at an interesting crossroads of demography. One is that India, has one of the highest population in the world, with most of its population young. Majority of the population is millennials which is a good omen for the Indian market. Coupled with all this, is that the disposable income of the average Indian is on the rise. Though the growth of the millennial generation hasn't always been a smooth story. With major events shaping their minds and an almost unlimited access to technology, vis-à-vis to information, marketers must realize that they are dealing with a new kind of consumer, one who is active and willing to take part in the economy.

Following are some of the consumer behavioral patterns that define the millennials

- There is a lot more significance given to personality and feeling. 60% of all millennials are inclined to buy because they feel it expresses their personality and makes them feel good
- Millennials live with the belief, "If you love it, share it." Social media has become a stronger proponent in their daily scheme of things. They are 13% more likely to be influenced in purchase through social media than the previous generations. They are opinionated and community driven. They prefer engagement and every touch point matters to them.
- Millennials do not pledge loyalty without reason. They are soulful in their purchase and wander as look to connect in essence with a product or brand or an experience.
- Millennials prefer the experience over the narrative of the experience; traditional advertising. Such is the desire for experience that they are often willing to pay a premium for it.
- Millennials prefer to trust word of mouths as against advertisements. There is a strong sentiment of peer influence among the millennials that cannot be ignored. One of the things that could be adopted by the marketers to influence millennials is through influencer marketing.
- Millennials are highly detailed and personalized in their demands. They seek relevance, not only in the functional aspect of the product but also the essence of the brand and how they resonate with the core values of the brand.
- Millennials are high independent thinkers.
- Millennials are highly skewed towards devices that can be connected T.V. rather than the old and traditional form of T.V.
- They are highly distracted which turns into bare program engagement and even lower memorability scores.

OBJECTIVES

The objective of this research is to understand the perception of millennials towards in-app advertising. Many organizations nowadays shifting towards mobile applications to get in touch with their customers & alongside to make sufficient revenue they started in-app advertisement. This in-app advertisement with the help of AI examines the likelihood of the customers and show them the ads based on their preferences and recent searches. The main motive behind conducting this research is to identify whether the millennials who are majority of smartphone users in the country are liking the in-app advertisement, just ok with in-app ads or hating it.

LITERATURE REVIEW

3.1 Introduction

Having talked about the millennials behavioral patterns, we now scope out the length and breadth of mobile marketing and its myriad applications carried out in the market till now, which are

- SMS (text) marketing
- QR codes
- Bluetooth advertising
- In-app advertising
- Branded application
- Sensor and location based advertising

All the above mentioned methods have a knack to be personal, engaging and local compared to the other forms of media. According to prior research the consumer responds more positively to personalized forms of marketing as in contrast to the traditional form which is interruptive in nature. This is especially true when permissions are concerned as personalized messages are highly integrated.

3.1.2 SMS and MMS Marketing

In the earlier years, SMS and MMS marketing was a highly effective tool in helping the consumer recalling a brand. It acted as a great add-on to the pre-existing print and T.V. campaigns. While the length limitation of this platform created problems, the highly customizable nature of the platform was a huge plus for the marketers. In the recent years, there has been a transformation from SMS, MMS marketing to RCS marketing (Whatsapp); bringing one example of Bloomberg into highlight:

- BloombergQuint a news body for financial, market and business news implemented a strategy by focusiong on converting the mobile audience to subscribers, using Whatsapp
- They first identified the target audience and their lifestyle. They found out that the audience was short on time and needed brief and crisp content for their daily dose of relevant news. This was not the case with most news app in the market. So post conducting the tests on the potential of Whatsapp as a platform, they came to the conclusion that Whatsapp was not only a good platform for personalized messages but due to the availability of Whatsapp groups the dynamics of what could be achieved differed greatly. The presence of Whatsapp groups also meant that it also held the potential to be a good platform for content distribution.
- Thus they launched the news service on the platform for the Indian market
- The result was more than 2, 50, 000 users acquired in less than six months.

3.1.3 QR Codes

The magic of QR codes lay in their ability to interact with static media, thus acting as doorways or windows to a lot more engaging content by the brands from just print and forums found online. They are effective in measuring the impact of campaigns. Apart from the aforementioned, there is also the factor of time, location and other details like emails and contacts. According to consumer study, QR codes speed up the buying process. While QR codes are a unique way to market, it is effective in the context of high involvement market and not enough for low involvement market.

3.1.4 Bluetooth Advertising

This kind of mobile marketing relied on the location of the consumer to provide, message, promotional offers and relevant information in the context of the brand, the consumer is inclined to. The method to approach this platform as a marketing tool was to only focus on the relevant content and selective messaging which relied on the influence of peers for the consumer and their very own desire to fulfill their curiosity.

3.1.5 In-app advertising

An ad within the bounded experience of the app is in-app advertising and it started with mostly banner and display ads relevant to the context which arises with the help of Artificial Intelligence, content and the kind of the platform the app provided. According to prior research a location specific, relevant ad was less interruptive than an ad which wasn't relevant to the location or the content of the app. CPI which is cost per impression and CPA which is the cost per acquisition is the way to measure the effectiveness of the in-app advertising. The different kinds of in-app advertising are:

- Out-of-app ads: These are the kinds of ads that are present on the mobile device post the end activity of the app.
- Click to expand ads: These ads, expand in size with an elaborate description of the brand
- Interstitial ads: They are the ads that are run before or after a particular activity is completed in the app
- Banner ads: these static banner ads before, after or during the app activity

Why this is so effective is due to the placement of ads among the axis of time and space within the app. When transitioning from one sequence to another in the app, the user is open to the idea of a break, that's where the ads are most effective.

3.1.6 Branded applications

Often brands are not satisfied with just an ad within the app but also more interested in engaging the consumer and providing as real an experience to the consumer through an app that they would have created, designed and programmed on their own. This is known as branded applications. It means to exploit the potential of a consumer touch point and prefer total control regarding the experience of the brand for the consumer. This is a technique used in developing an emotional connect with the consumer and act as effective brand building exercise.

3.1.7 Adoption of sensor and location based marketing

With the advancement of technology in the market and setting of higher benchmarks, consumers are expecting more seamless ways to experience their brands. Through the power of integration and high responsiveness of the sensor based marketing and locational services, that standard can be not only be met but exceeded. The internet of things has expanded the horizons of remote control from T.V. and other e-devices to fans, lights, temperature control and more. All of this from the central command centre of your mobile phone.

For example, Mc Donalds was able to optimize its delivery alternatives in association with Google search, in South Africa post the establishment of its delivery service.

In 2015, McDonalds decided to switch to the online format of customer service from tele-services and focused on consumer order delivery within a 5 Km radius for a select group of 80 restaurants. This encouraged the consumer to go online and engage with the brand on the online platform.

Through the technology of location based services, McDonalds made sure quality and comfortable services were provided.

What did this for McDonalds is it lowered costs on call centers, thus McDonalds was able to shift those costs to the stores that weren't profitable and the online engagement went upto 64%

3.2 A note: To build a holistic mobile experience in India

There is absolutely no denying that the mobile advertising market in India is booming but there are some fundamentals to mobile experience that must be kept in mind when dealing with the platform. According to a research, "70% of all web audience is derived from mobile, while 80% is got from games and Social network. But the internet speed and consistency is a liability with the average speed index for India being 55%. This is lower than 80% which is the world standard of Internet speed index.

- Therefore keeping in mind the following guidelines should be adhered to:
- Experience of the app must be seamless
- Heavy graphics to be avoided as it adds to the load time and causes interruption
- Autocorrect is a huge plus in creating seamless integration in the shortest time.

RESEARCH METHDOLOGY

4.1 Introduction

What we're trying to achieve here is to recognize what ticks the customer, what turns him/her off and what factors are important to millennials when it comes to advertising and in-app advertising in specific. A sample of 30 was conducted to understand the millennials and their behaviours towards in-app advertising. We first began with asking the basic fundamental questions about the individual like name, age and gender. Then we moved on to asking whether the respondent had a smartphone to ensure the relevance of the research to the respondent. This was followed by questions addressing the frequency of usage and whether the respondent preferred to use an app or a browser. Then to further understand our target, we mapped out the usage pattern of the respondent to understand which genre of application catches the millennial's attention. The higher is the audience base of a certain genre, the higher is the value of that application in terms of advertising. We then identified factors that were liked and disliked about ads on each of the existing platforms that were a part of the daily life of the target and based on that we asked their treatment or their response of the ads they encountered over these platforms, specific to the platform. Once we established their likes, dislikes and behavioural responses we ventured further into their attitudes towards location based advertising due to its high relevance in the context of in-app advertising and further we ventured into the area of branded content as it is ultimately, a different to look at apps and ads on the mobile device

4.2 Questions

1. Name
2. Age
    a. 21-24
    b. 25-31
    c. 31-37
3. Do you have a smartphone?
    a. Yes
    b. No
4. How frequently do you use it?
    a. 1-2hrs everyday
    b. 3-5hrs everyday
    c. 6-8hrs everyday
5. Do you prefer apps of web browser?
    a. Apps
    b. Web Browser

6. From a scale of 1-10, how open are you to advertising? (1 - Lowest, 10 - Highest)

7. From a scale of 1-10 how open are you to mobile advertising? (1 - Lowest, 10 - Highest)

8. Rank your personal smartphone usage pattern (Rank 1 - Most used, Rank 10 - Least used)
    a. Gathering information (Google/Bing)
    b. Social Media
    c. Gaming
    d. Text/call
    e. News
    f. Streaming services
    g. Payment Services
    h. E-Commerce

9. What do you like about these platforms? (Options: Informative, engaging, entertaining, relevance to the app in use, credibility)
    a. Social Media
    b. Games
    c. News
    d. Google/Bing
    e. Streaming Services
    f. Payment Services
    g. E-Commerce

10. How do you treat the ads in the platform? (Options: Purchase, download, Click, Skip)
    a. Social Media
    b. Games
    c. News
    d. Google/Bing
    h.
    e. Streaming Services
    f. Payment Services
    g. E-Commerce

11. What do you dislike about the ads on these platforms? (Options: Intrusive, irrelevance, Size, position, pop up, video, offensive, repetitive)
    a. Social Media
    b. Games
    c. News
    d. Google/Bing
    e. Streaming Services
    f. Payment Services
    g. E-Commerce

12. From a scale of 1-10, how open are you in giving your location when apps demand it? (1 - Lowest, 10- Highest)

13. From a scale of 1-10, how open are you in receiving location based advertising? (1 - Lowest, 10 - Highest)

14. From a scale of 1-10, how open are you the idea of apps as branded content? (1 - Lowest, 10 - Highest)

15. Have you encountered a game/media/app launched by brand exclusively?
    a. Yes
    b. No

DATA ANALYSIS

5.1 Results

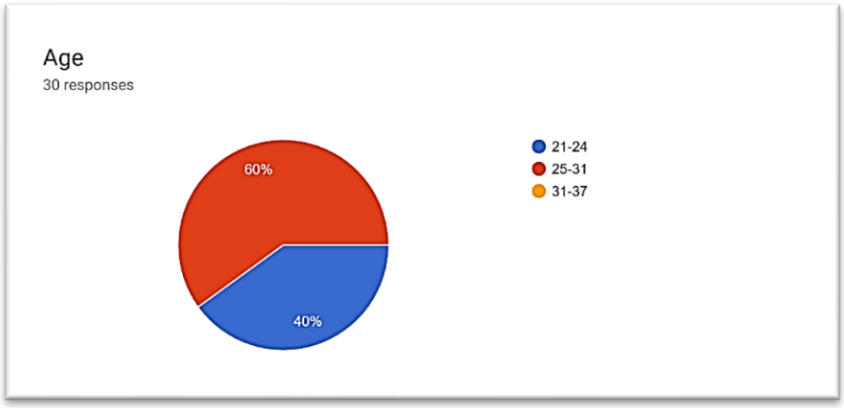

Fig1

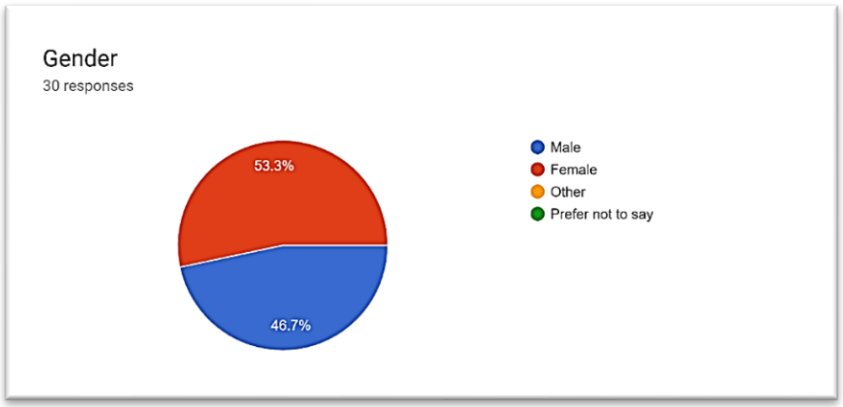

Fig 2

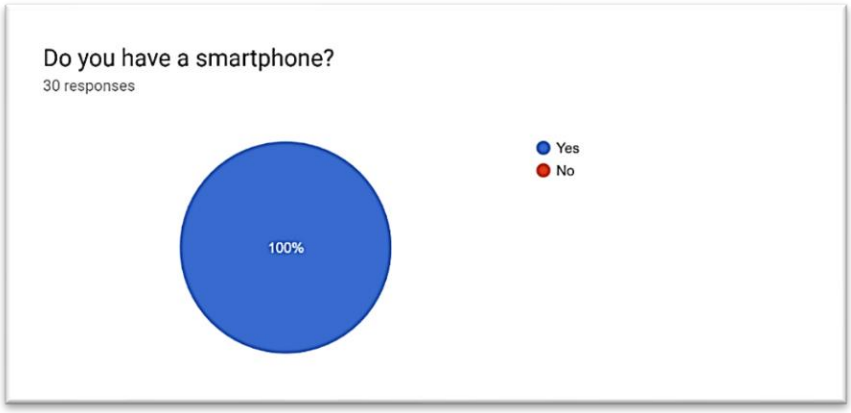

Fig 3

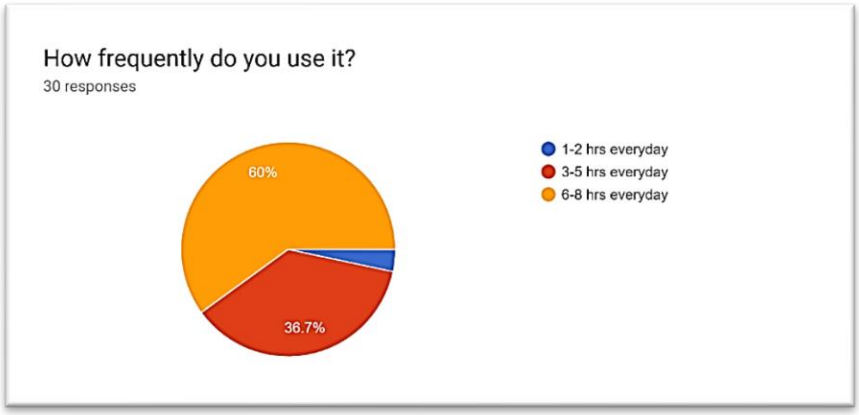

Fig 4

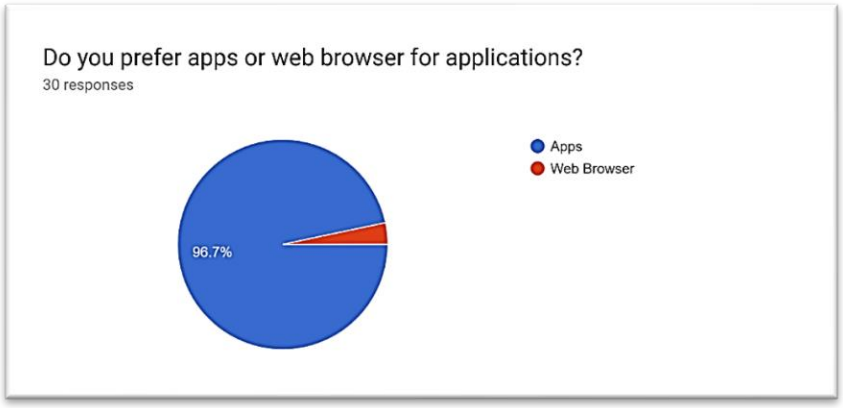

Fig 5

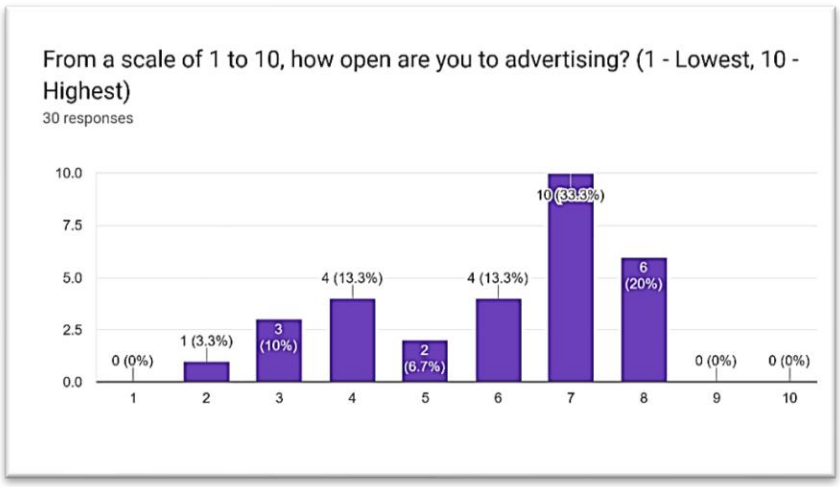

Fig 6

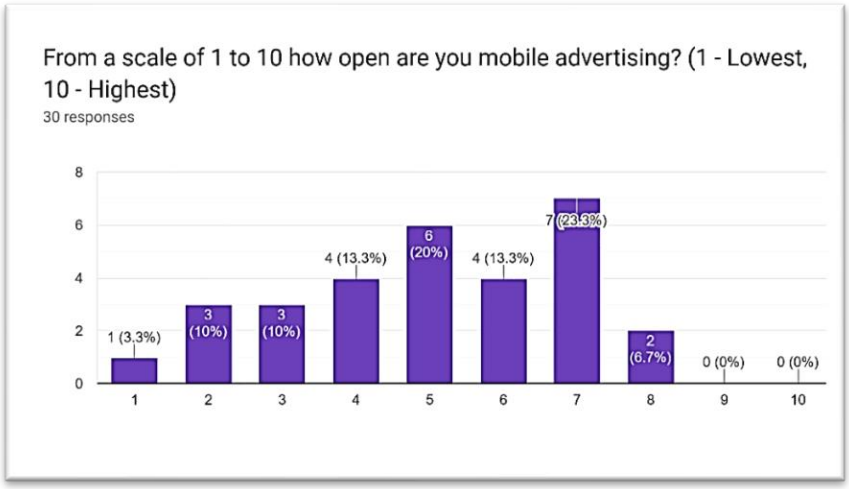
From a scale of 1 to 10 how open are you mobile advertising? (1 - Lowest, 10 - Highest)
30 responses
8
6
4
2
0
1 (3.3%)
3 (10%)
3 (10%)
4 (13.3%)
6 (20%)
4 (13.3%)
7 (23.3%)
2 (6.7%)
0 (0%)
0 (0%)
1
2
3
4
5
6
7
8
9
10

Fig 7

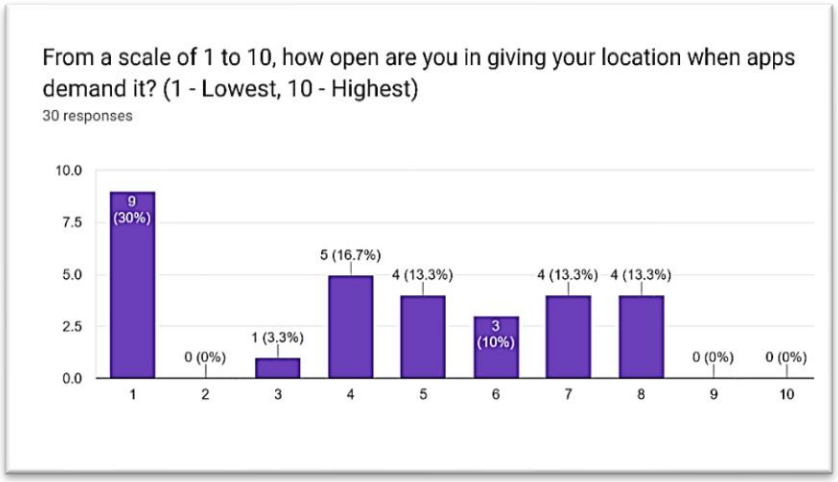
From a scale of 1 to 10, how open are you in giving your location when apps demand it? (1 - Lowest, 10 - Highest)
30 responses
10.0
7.5
5.0
2.5
0.0
9 (30%)
0 (0%)
1 (3.3%)
5 (16.7%)
4 (13.3%)
3 (10%)
4 (13.3%)
4 (13.3%)
0 (0%)
0 (0%)
1
2
3
4
5
6
7
8
9
10

Fig 8

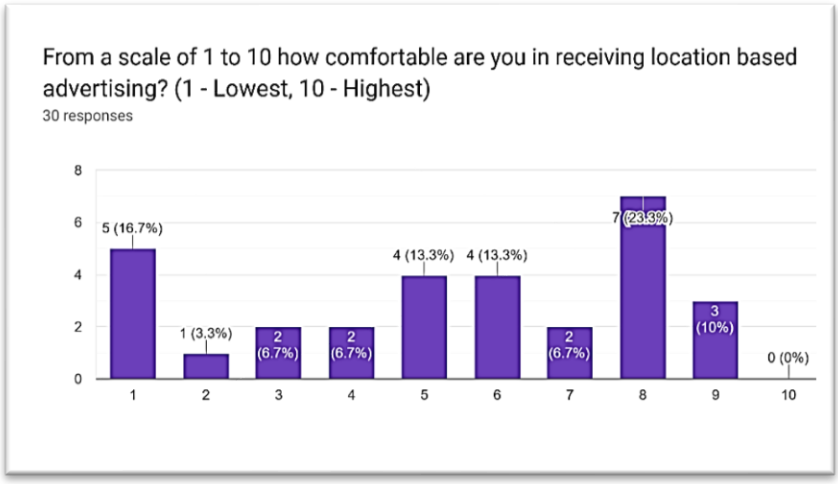
From a scale of 1 to 10 how comfortable are you in receiving location based advertising? (1 - Lowest, 10 - Highest)
30 responses
8
6
4
2
0
5 (16.7%)
1 (3.3%)
2 (6.7%)
2 (6.7%)
4 (13.3%)
4 (13.3%)
2 (6.7%)
7 (23.3%)
3 (10%)
0 (0%)
1
2
3
4
5
6
7
8
9
10

Fig 9

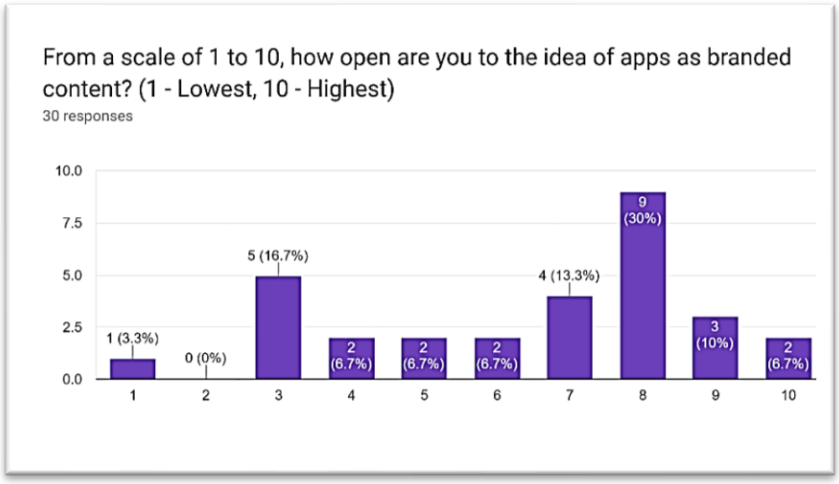

Fig 10

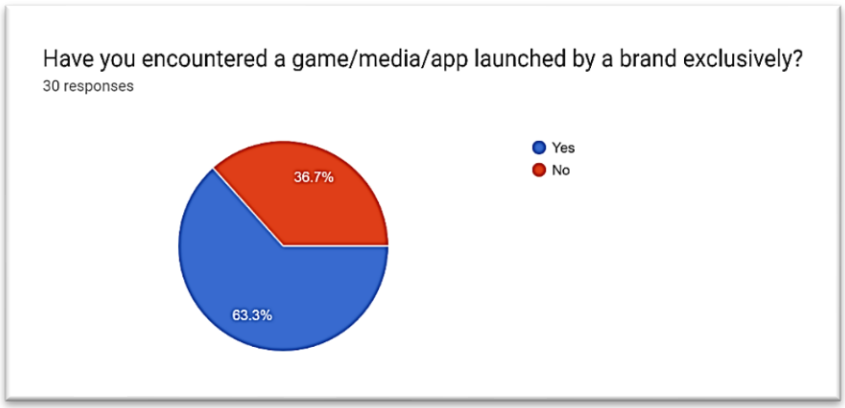

Fig 11

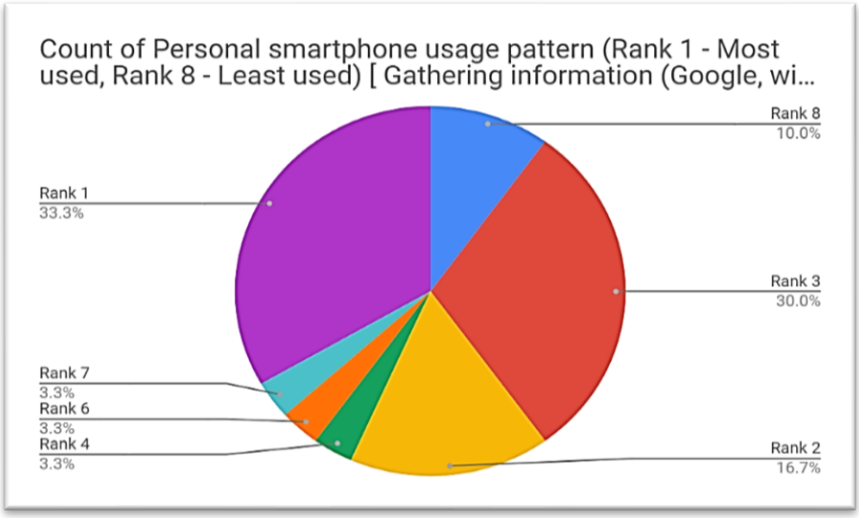

Fig12

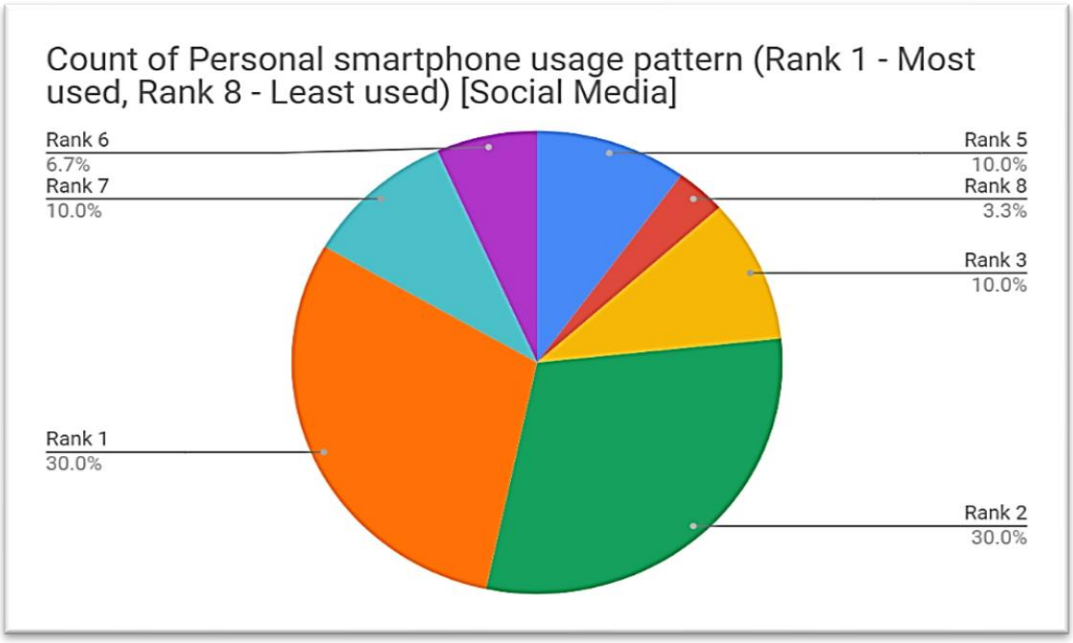
Count of Personal smartphone usage pattern (Rank 1 - Most used, Rank 8 - Least used) [Social Media]
Rank 6
6.7%
Rank 7
10.0%
Rank 1
30.0%
Rank 5
10.0%
Rank 8
3.3%
Rank 3
10.0%
Rank 2
30.0%

Fig 13

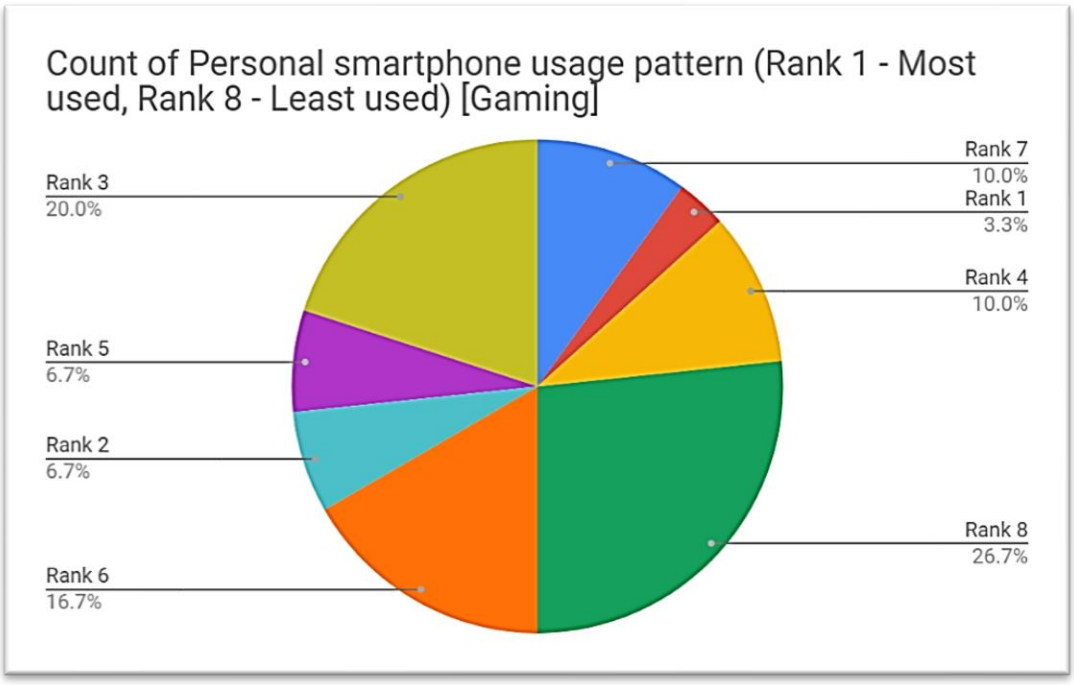
Count of Personal smartphone usage pattern (Rank 1 - Most used, Rank 8 - Least used) [Gaming]
Rank 3
20.0%
Rank 5
6.7%
Rank 2
6.7%
Rank 6
16.7%
Rank 7
10.0%
Rank 1
3.3%
Rank 4
10.0%
Rank 8
26.7%

Fig 14

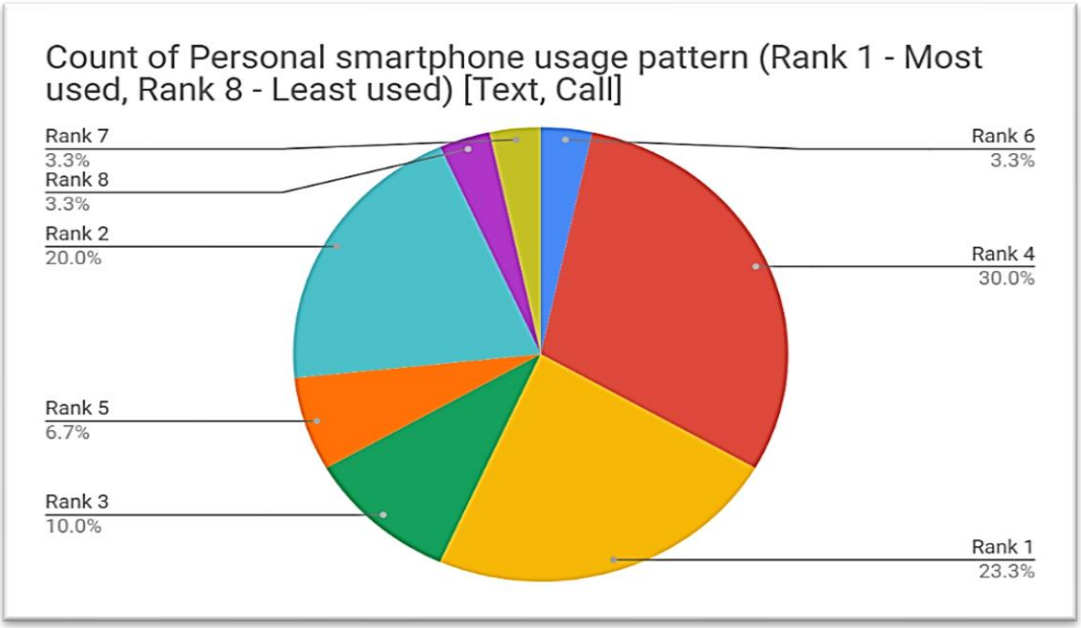
Count of Personal smartphone usage pattern (Rank 1 - Most used, Rank 8 - Least used) [Text, Call]
Rank 7
3.3%
Rank 8
3.3%
Rank 2
20.0%
Rank 5
6.7%
Rank 3
10.0%
Rank 6
3.3%
Rank 4
30.0%
Rank 1
23.3%

Fig 15

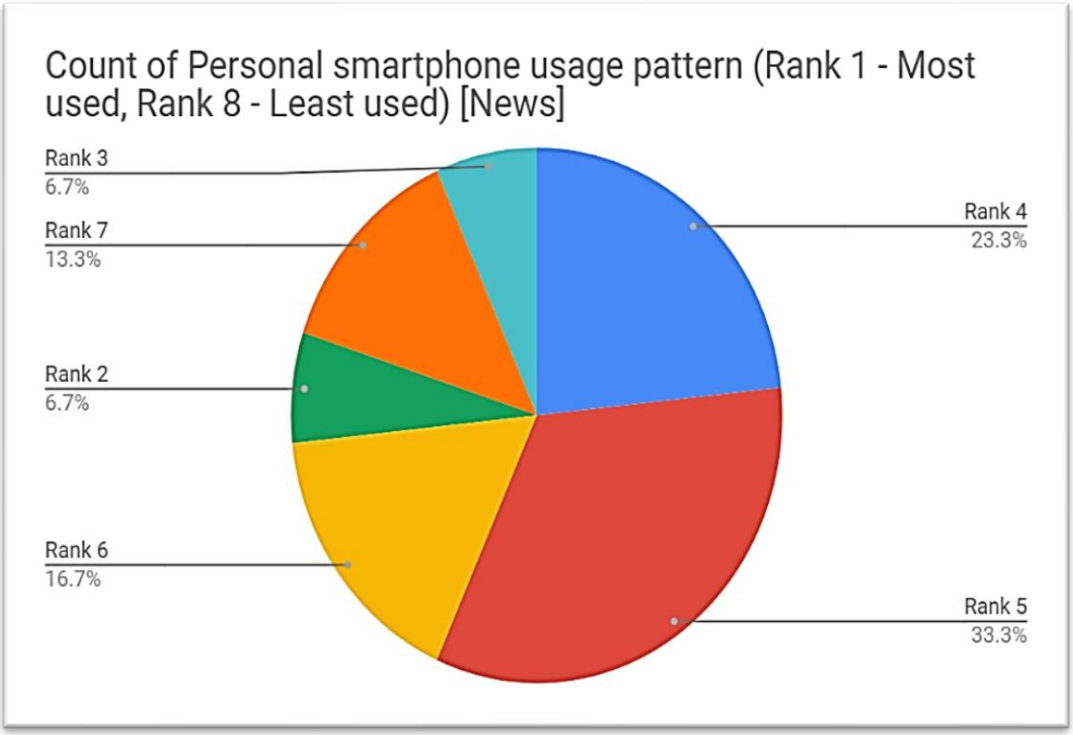
Count of Personal smartphone usage pattern (Rank 1 - Most used, Rank 8 - Least used) [News]
Rank 3
6.7%
Rank 7
13.3%
Rank 2
6.7%
Rank 6
16.7%
Rank 4
23.3%
Rank 5
33.3%

Fig 16

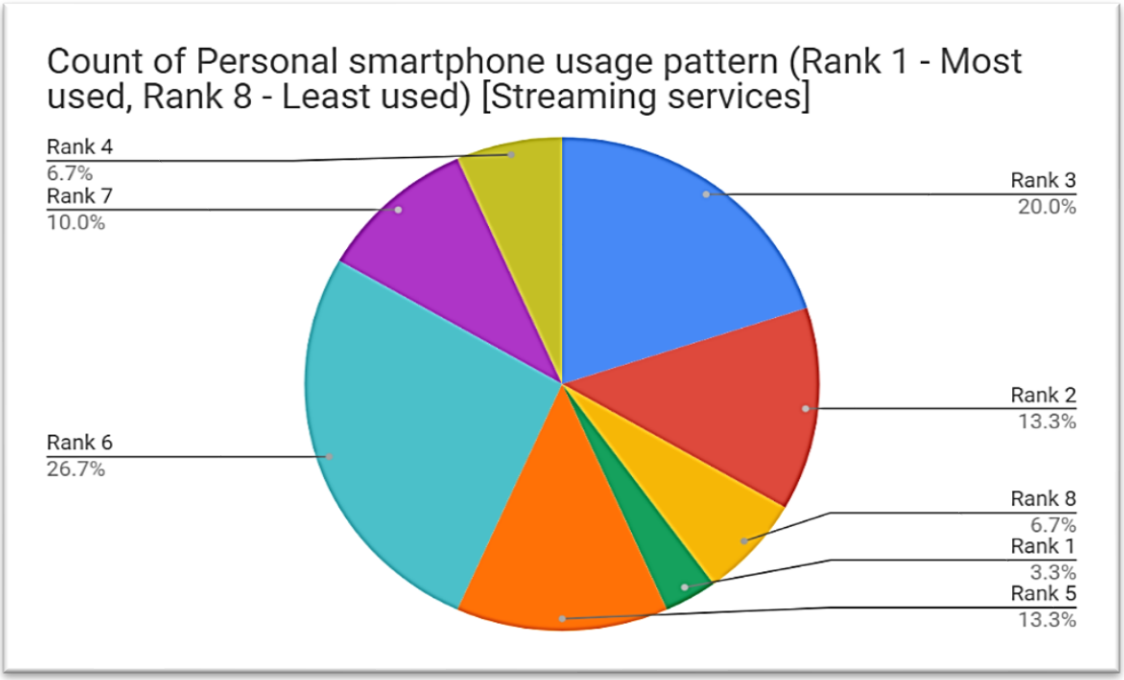
Count of Personal smartphone usage pattern (Rank 1 - Most used, Rank 8 - Least used) [Streaming services]
Rank 4
6.7%
Rank 7
10.0%
Rank 3
20.0%
Rank 2
13.3%
Rank 6
26.7%
Rank 8
6.7%
Rank 1
3.3%
Rank 5
13.3%

Fig 17

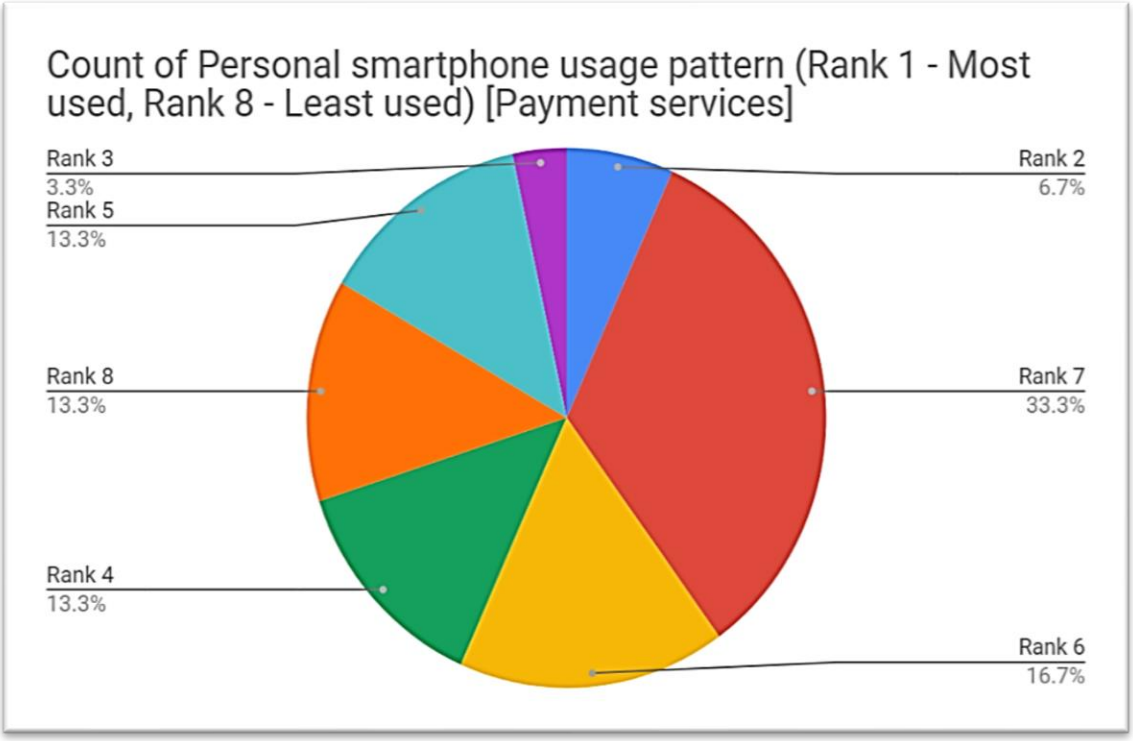
Count of Personal smartphone usage pattern (Rank 1 - Most used, Rank 8 - Least used) [Payment services]
Rank 3
3.3%
Rank 5
13.3%
Rank 2
6.7%
Rank 8
13.3%
Rank 7
33.3%
Rank 4
13.3%
Rank 6
16.7%

Fig 18

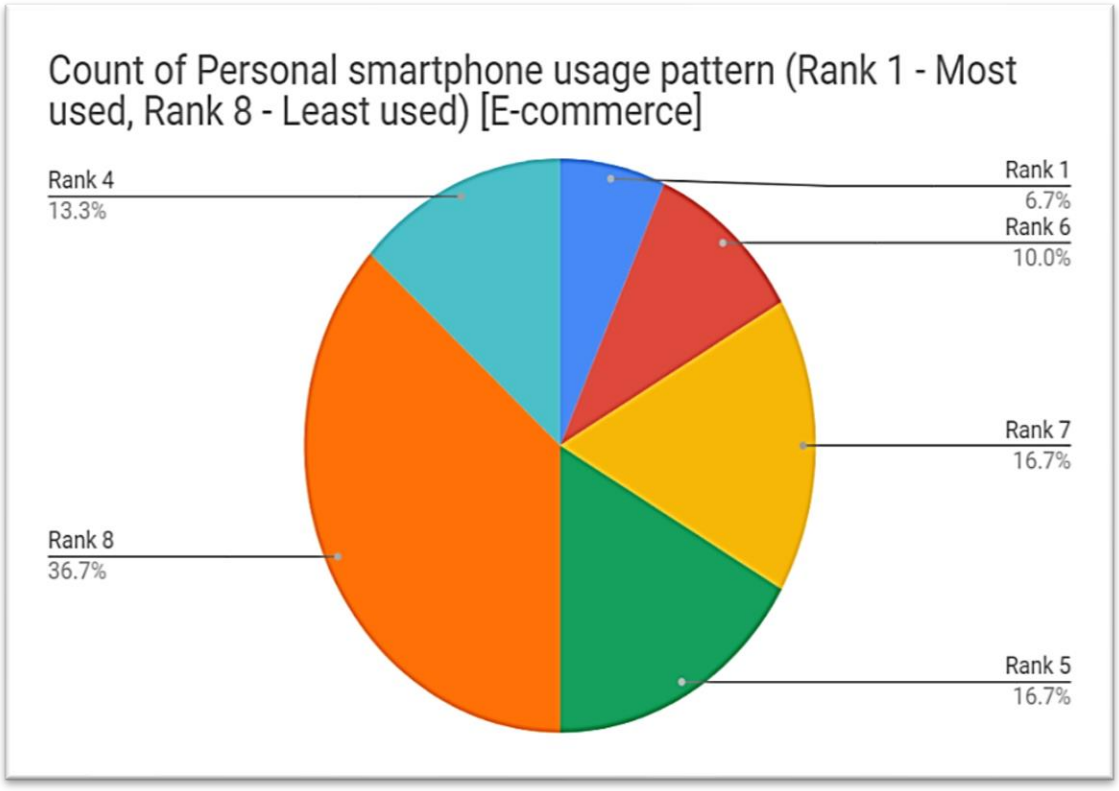
Count of Personal smartphone usage pattern (Rank 1 - Most used, Rank 8 - Least used) [E-commerce]
Rank 4
13.3%
Rank 1
6.7%
Rank 6
10.0%
Rank 7
16.7%
Rank 8
36.7%
Rank 5
16.7%

Fig 19

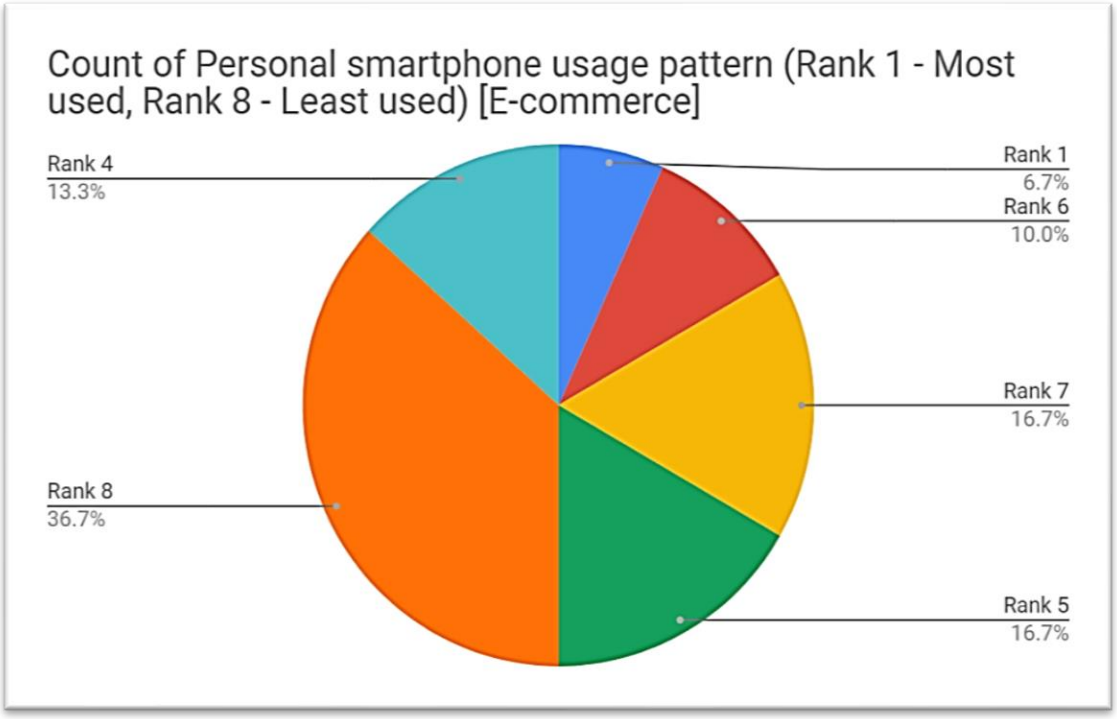
Count of Personal smartphone usage pattern (Rank 1 - Most used, Rank 8 - Least used) [E-commerce]
Rank 4
13.3%
Rank 1
6.7%
Rank 6
10.0%
Rank 7
16.7%
Rank 8
36.7%
Rank 5
16.7%

Fig 20

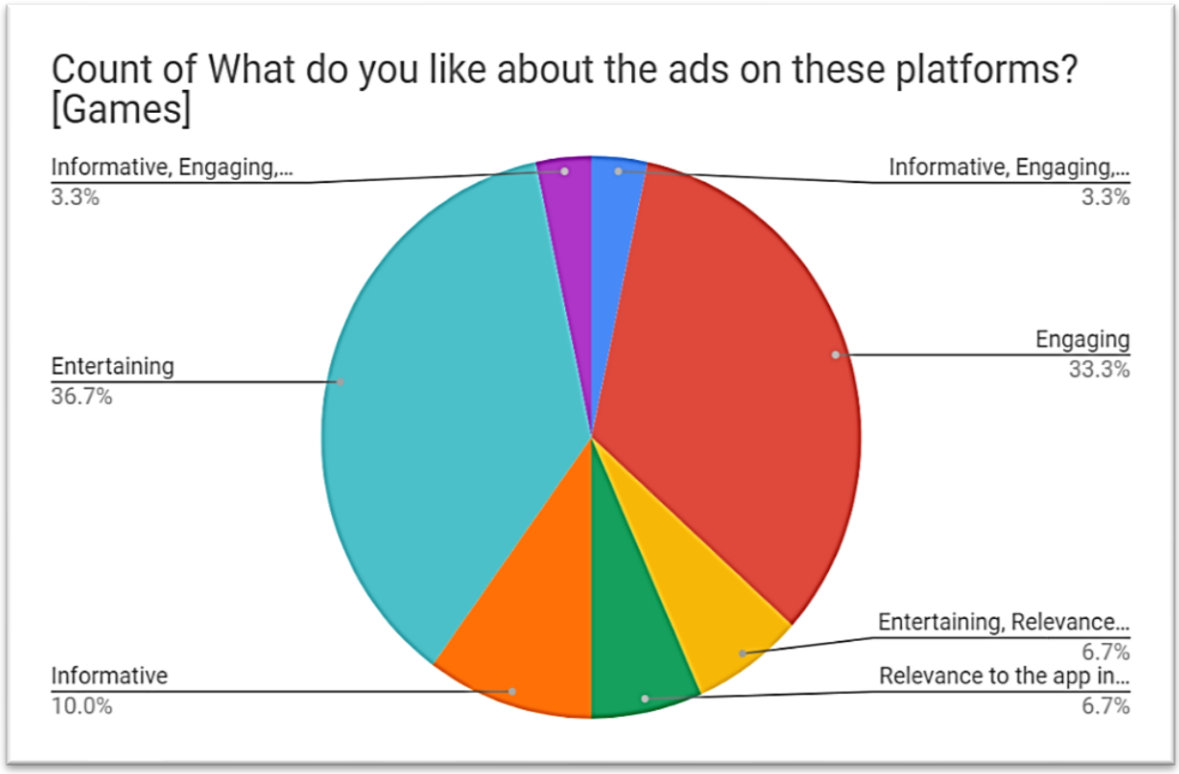
Count of What do you like about the ads on these platforms? [Games]
Informative, Engaging,... 3.3%
Informative, Engaging,... 3.3%
Engaging 33.3%
Entertaining 36.7%
Entertaining, Relevance... 6.7%
Relevance to the app in... 6.7%
Informative 10.0%

Fig 21

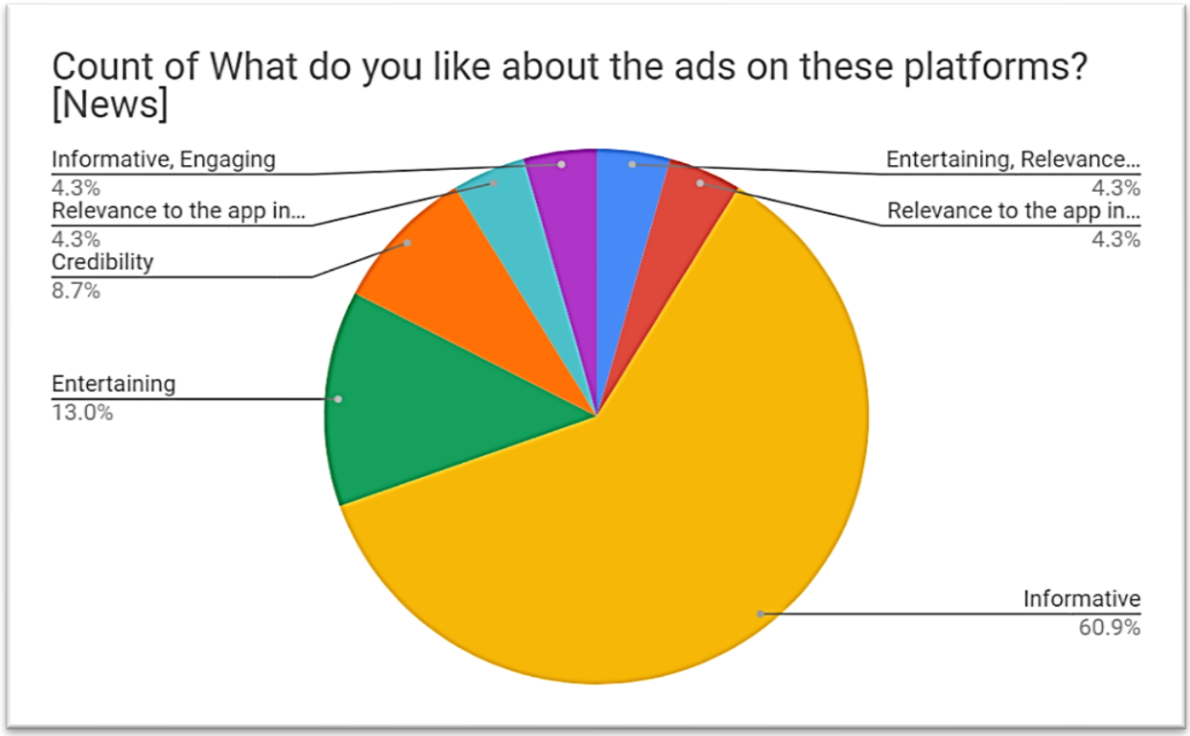
Count of What do you like about the ads on these platforms? [News]
Informative, Engaging 4.3%
Entertaining, Relevance... 4.3%
Relevance to the app in... 4.3%
Relevance to the app in... 4.3%
Credibility 8.7%
Entertaining 13.0%
Informative 60.9%

Fig 22

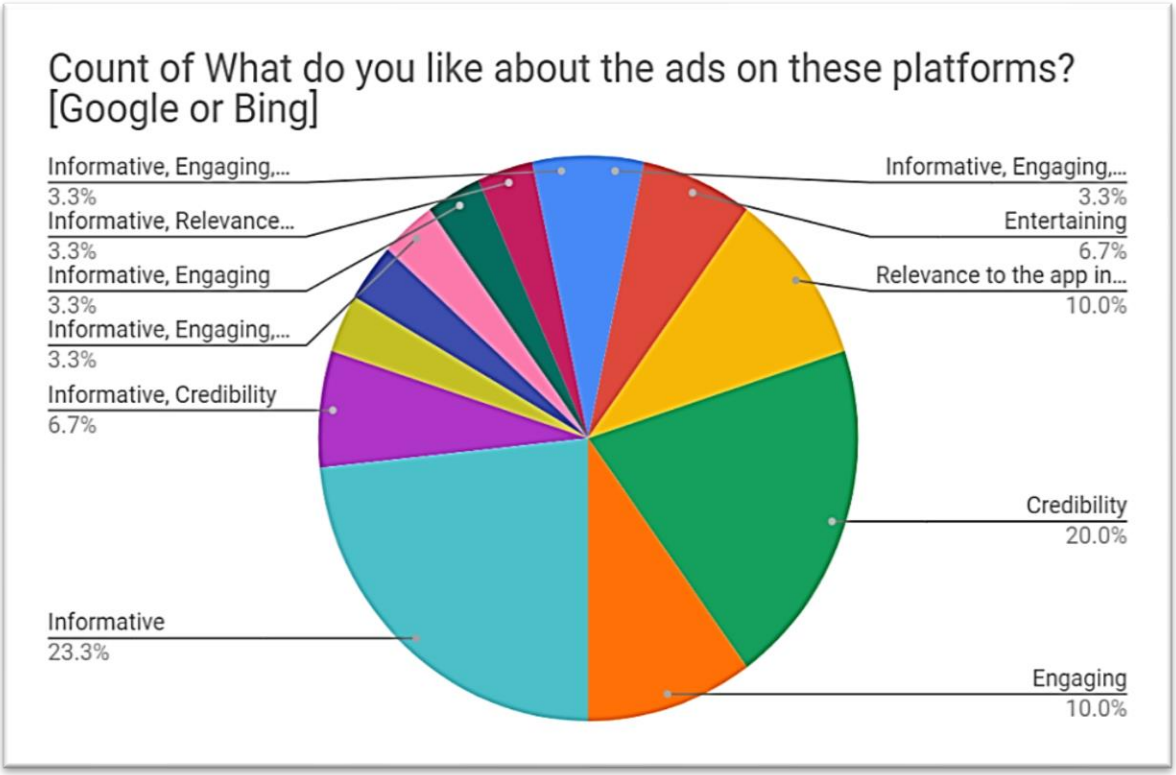
Count of What do you like about the ads on these platforms? [Google or Bing]
Informative, Engaging,... 3.3%
Informative, Relevance... 3.3%
Informative, Engaging 3.3%
Informative, Engaging,... 3.3%
Informative, Credibility 6.7%
Informative 23.3%
Informative, Engaging,... 3.3%
Entertaining 6.7%
Relevance to the app in... 10.0%
Credibility 20.0%
Engaging 10.0%

Fig 23

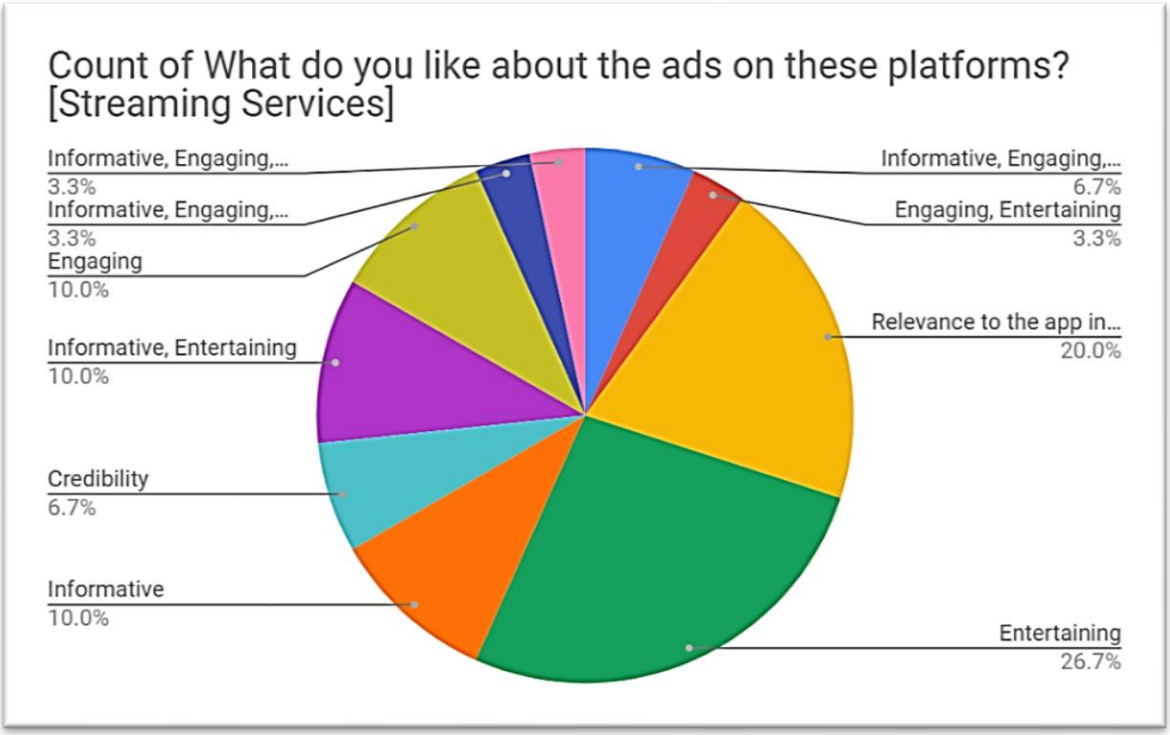
Count of What do you like about the ads on these platforms? [Streaming Services]
Informative, Engaging,... 3.3%
Informative, Engaging,... 3.3%
Engaging 10.0%
Informative, Entertaining 10.0%
Credibility 6.7%
Informative 10.0%
Informative, Engaging,... 6.7%
Engaging, Entertaining 3.3%
Relevance to the app in... 20.0%
Entertaining 26.7%

Fig 24

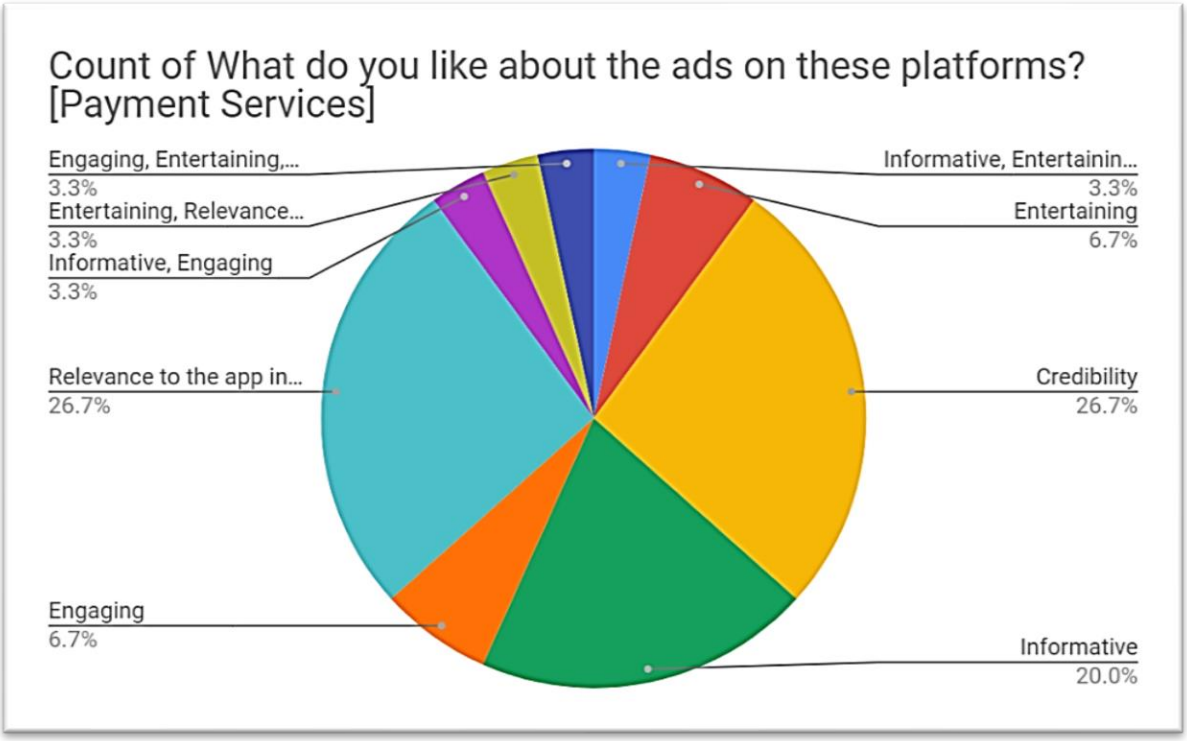
Count of What do you like about the ads on these platforms? [Payment Services]
Engaging, Entertaining,... 3.3%
Entertaining, Relevance... 3.3%
Informative, Engaging 3.3%
Relevance to the app in... 26.7%
Engaging 6.7%
Informative, Entertainin... 3.3%
Entertaining 6.7%
Credibility 26.7%
Informative 20.0%

Fig 25

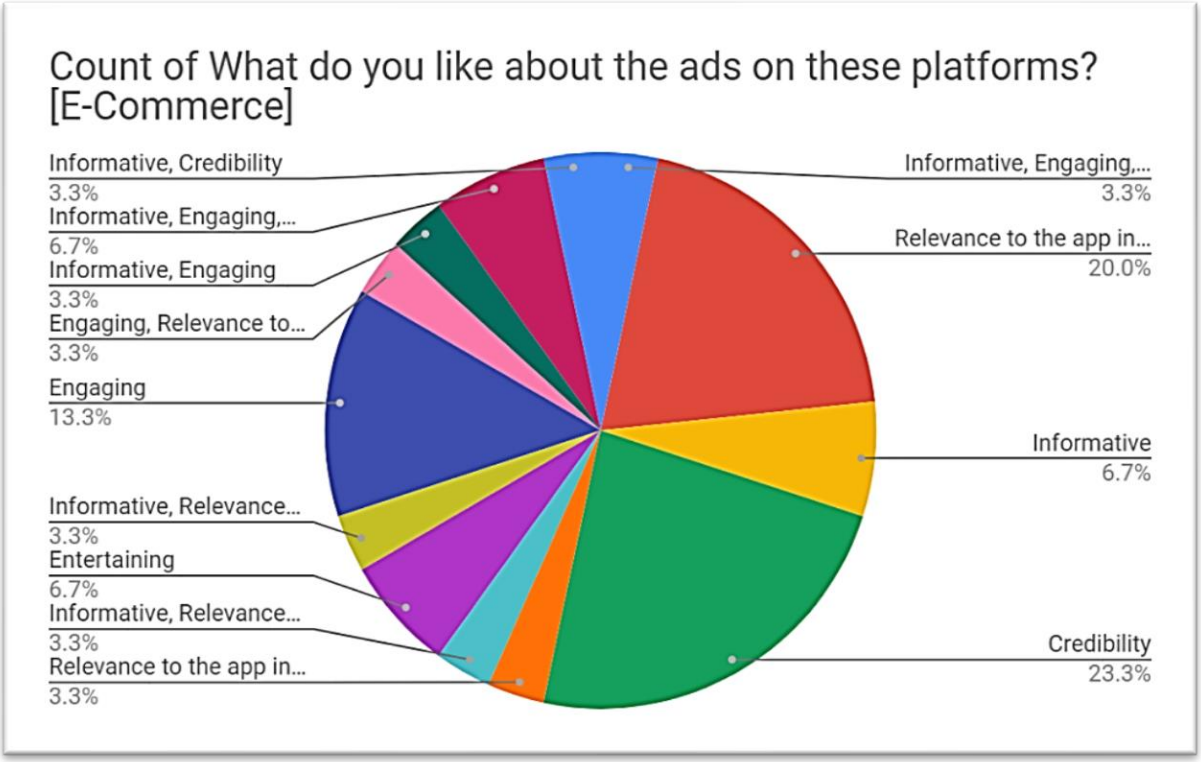
Count of What do you like about the ads on these platforms? [E-Commerce]
Informative, Credibility 3.3%
Informative, Engaging,... 6.7%
Informative, Engaging 3.3%
Engaging, Relevance to... 3.3%
Engaging 13.3%
Informative, Relevance... 3.3%
Entertaining 6.7%
Informative, Relevance... 3.3%
Relevance to the app in... 3.3%
Informative, Engaging,... 3.3%
Relevance to the app in... 20.0%
Informative 6.7%
Credibility 23.3%

Fig 26

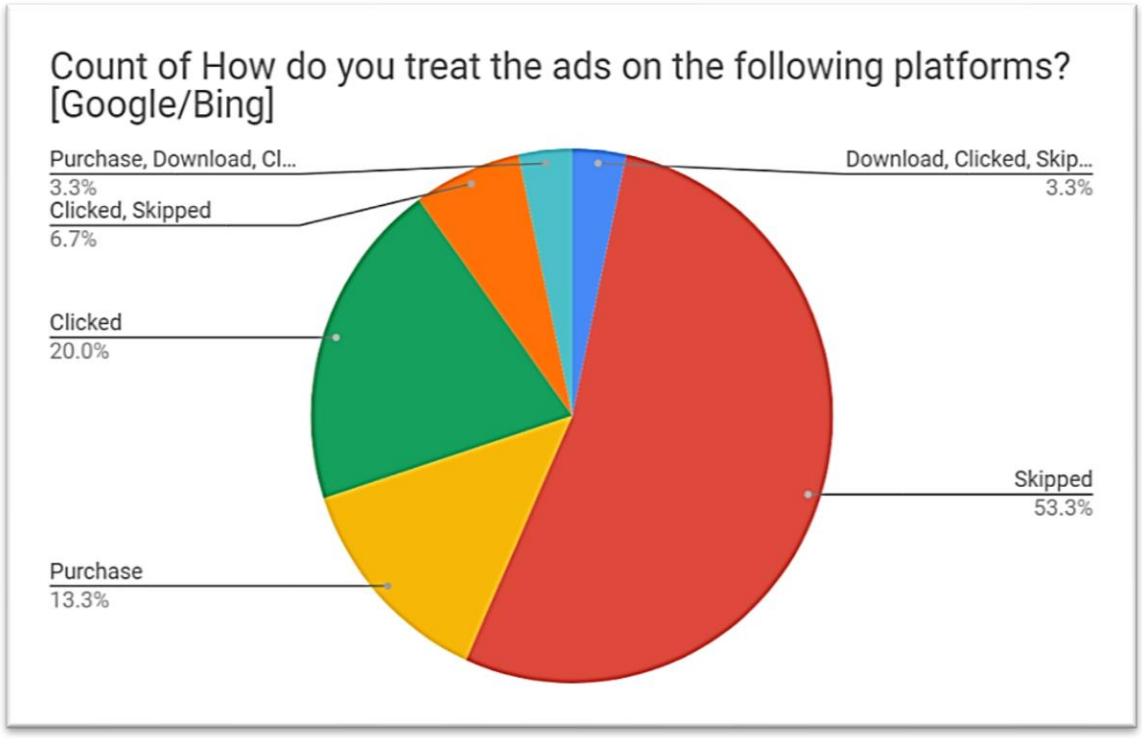

Fig 27

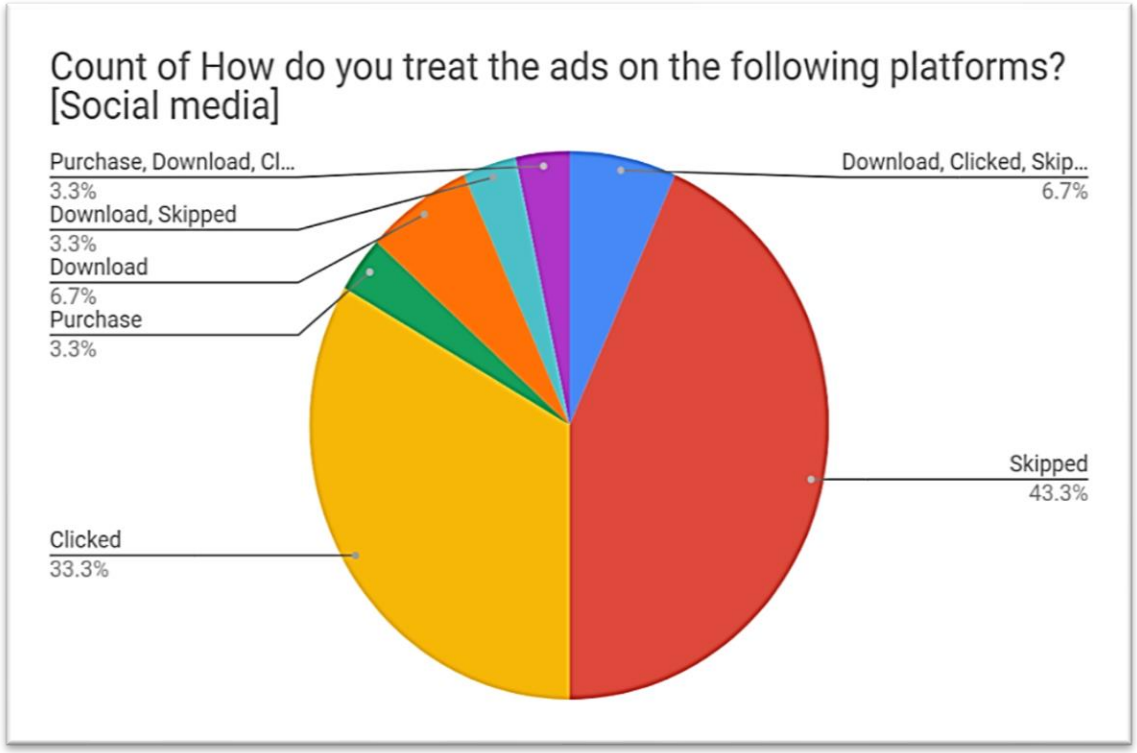

Fig 28

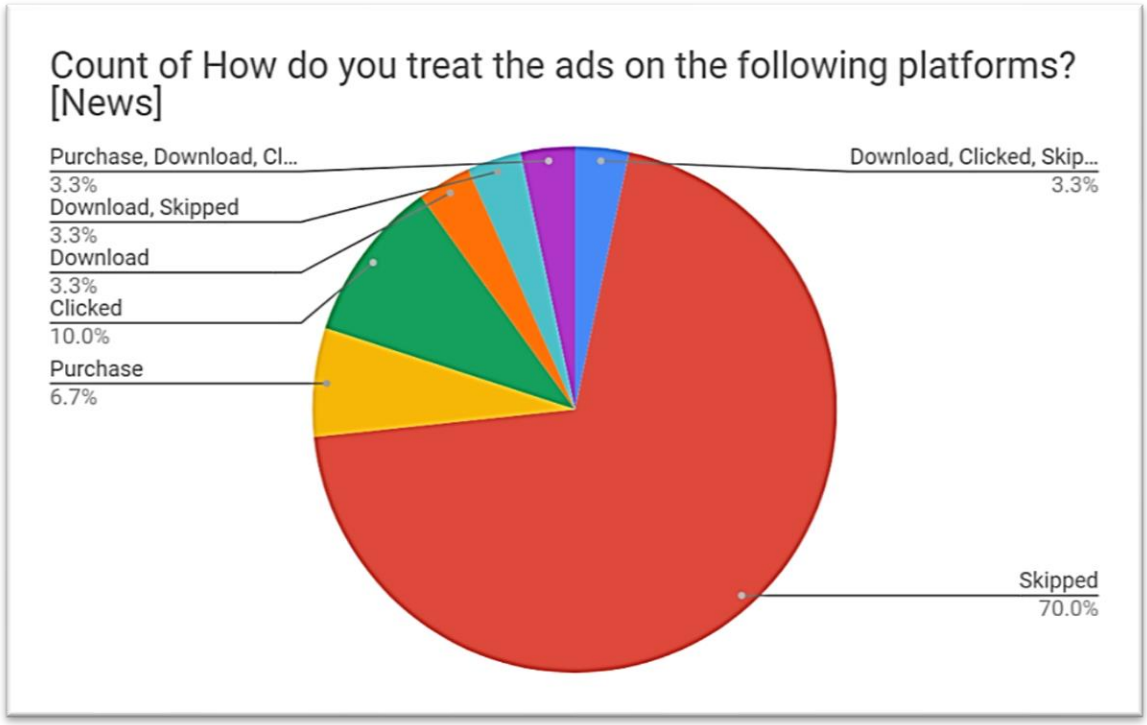
Count of How do you treat the ads on the following platforms? [News]
Purchase, Download, Cl...
3.3%
Download, Skipped
3.3%
Download
3.3%
Clicked
10.0%
Purchase
6.7%
Download, Clicked, Skip...
3.3%
Skipped
70.0%

Fig 29

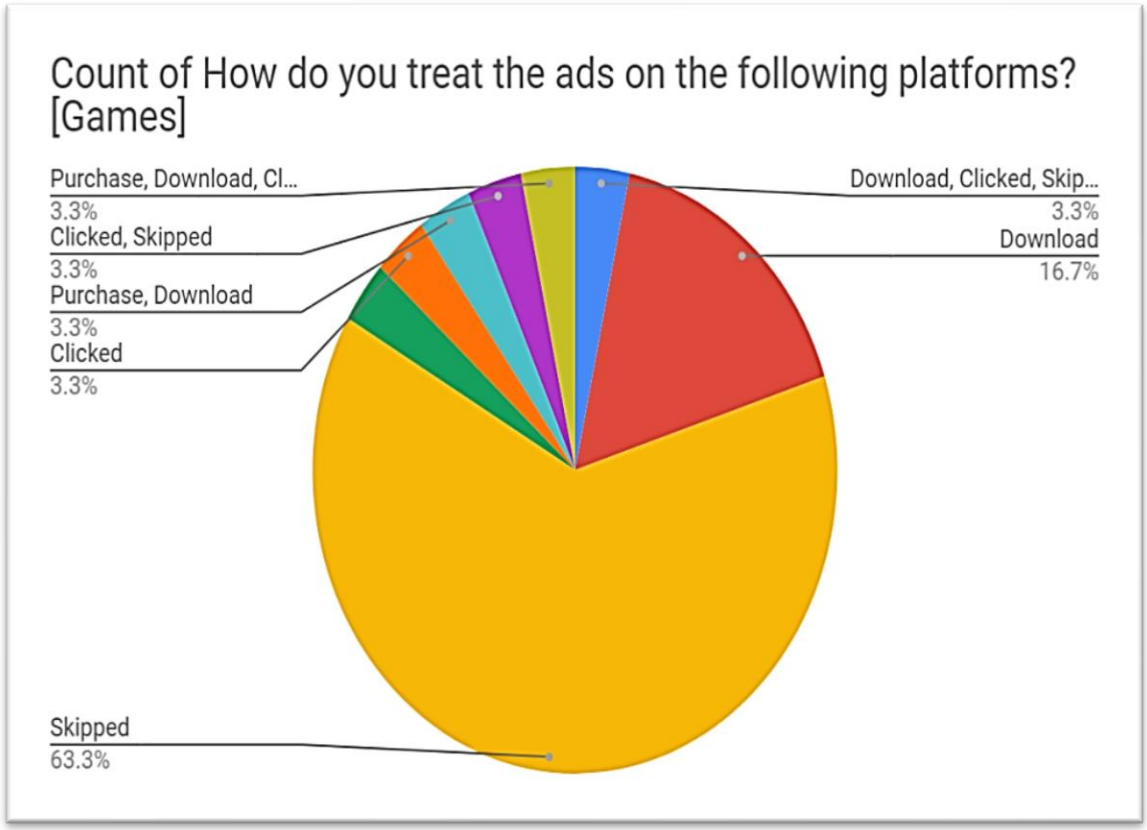
Count of How do you treat the ads on the following platforms? [Games]
Purchase, Download, Cl...
3.3%
Clicked, Skipped
3.3%
Purchase, Download
3.3%
Clicked
3.3%
Download, Clicked, Skip...
3.3%
Download
16.7%
Skipped
63.3%

Fig 30

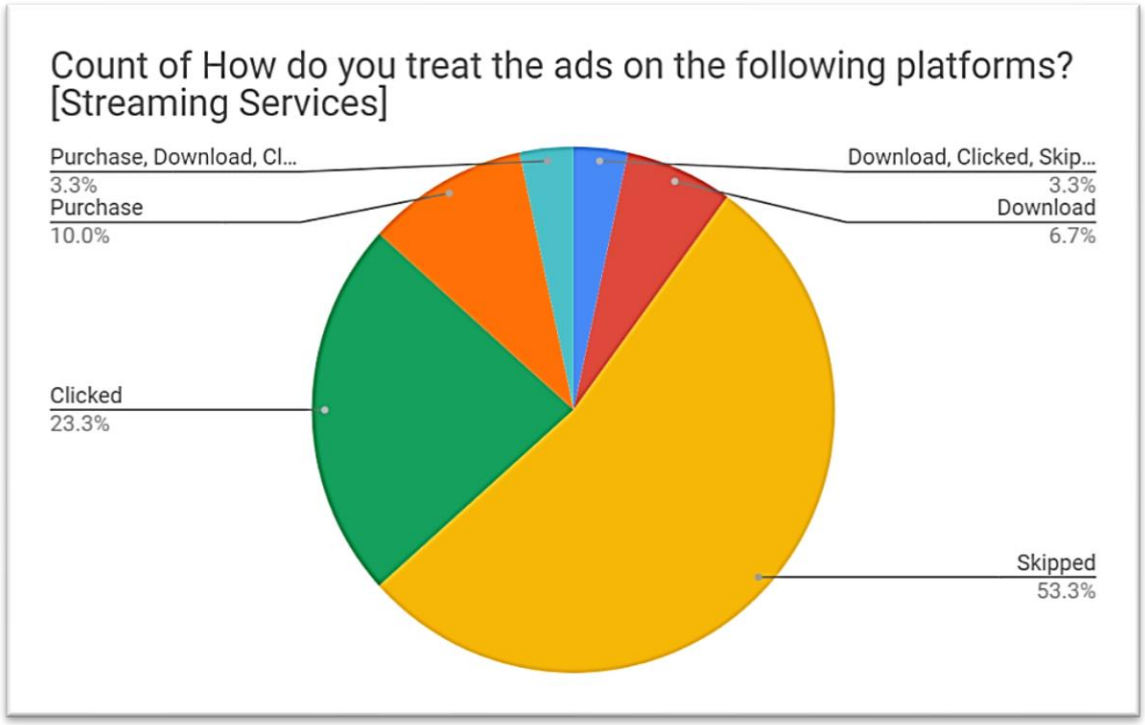
Count of How do you treat the ads on the following platforms? [Streaming Services]
Purchase, Download, Cl...
3.3%
Purchase
10.0%
Clicked
23.3%
Download, Clicked, Skip...
3.3%
Download
6.7%
Skipped
53.3%

Fig 31

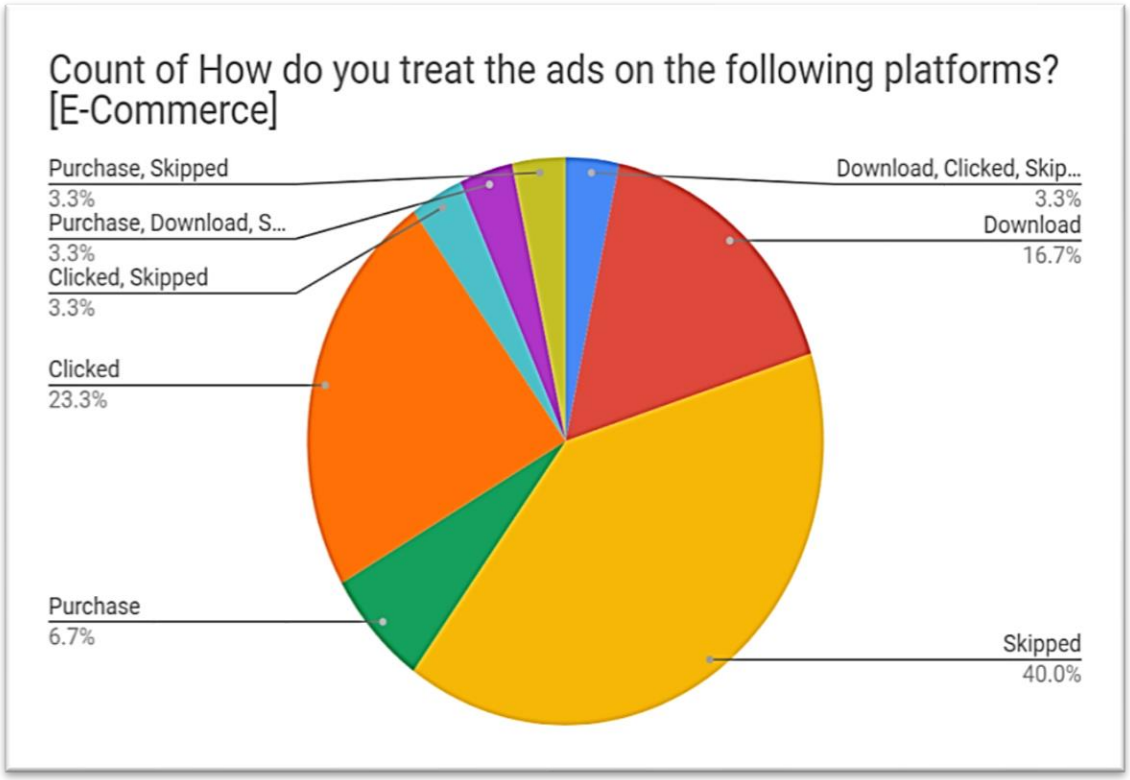
Count of How do you treat the ads on the following platforms? [E-Commerce]
Purchase, Skipped
3.3%
Purchase, Download, S...
3.3%
Clicked, Skipped
3.3%
Clicked
23.3%
Purchase
6.7%
Download, Clicked, Skip...
3.3%
Download
16.7%
Skipped
40.0%

Fig 32

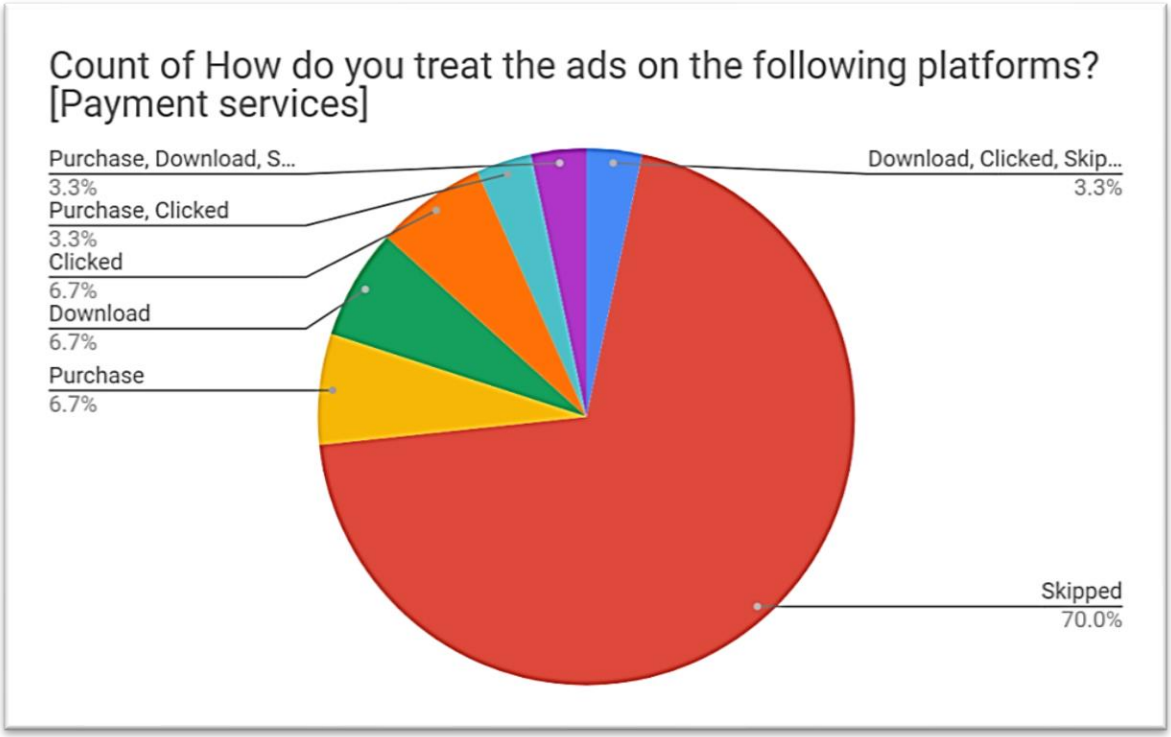
Count of How do you treat the ads on the following platforms? [Payment services]
Purchase, Download, S...
3.3%
Purchase, Clicked
3.3%
Clicked
6.7%
Download
6.7%
Purchase
6.7%
Download, Clicked, Skip...
3.3%
Skipped
70.0%

Fig 33

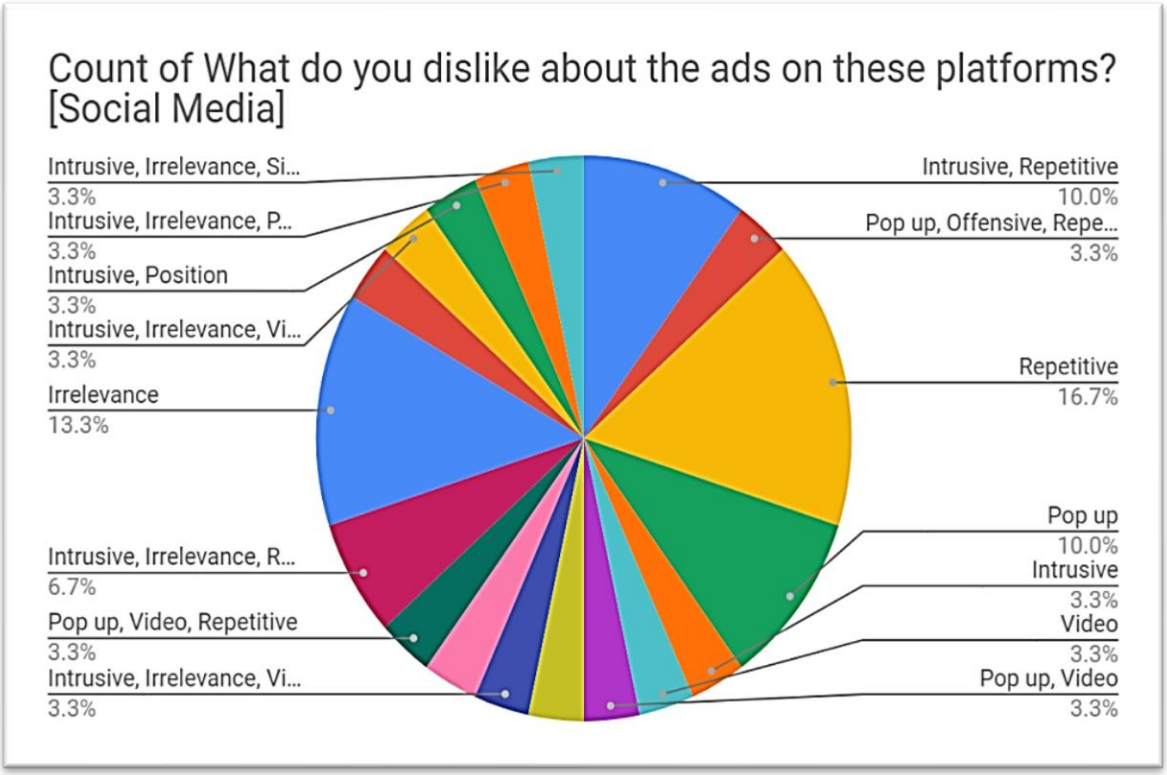
Count of What do you dislike about the ads on these platforms? [Social Media]
Intrusive, Irrelevance, Si...
3.3%
Intrusive, Irrelevance, P...
3.3%
Intrusive, Position
3.3%
Intrusive, Irrelevance, Vi...
3.3%
Irrelevance
13.3%
Intrusive, Irrelevance, R...
6.7%
Pop up, Video, Repetitive
3.3%
Intrusive, Irrelevance, Vi...
3.3%
Intrusive, Repetitive
10.0%
Pop up, Offensive, Repe...
3.3%
Repetitive
16.7%
Pop up
10.0%
Intrusive
3.3%
Video
3.3%
Pop up, Video
3.3%

Fig 34

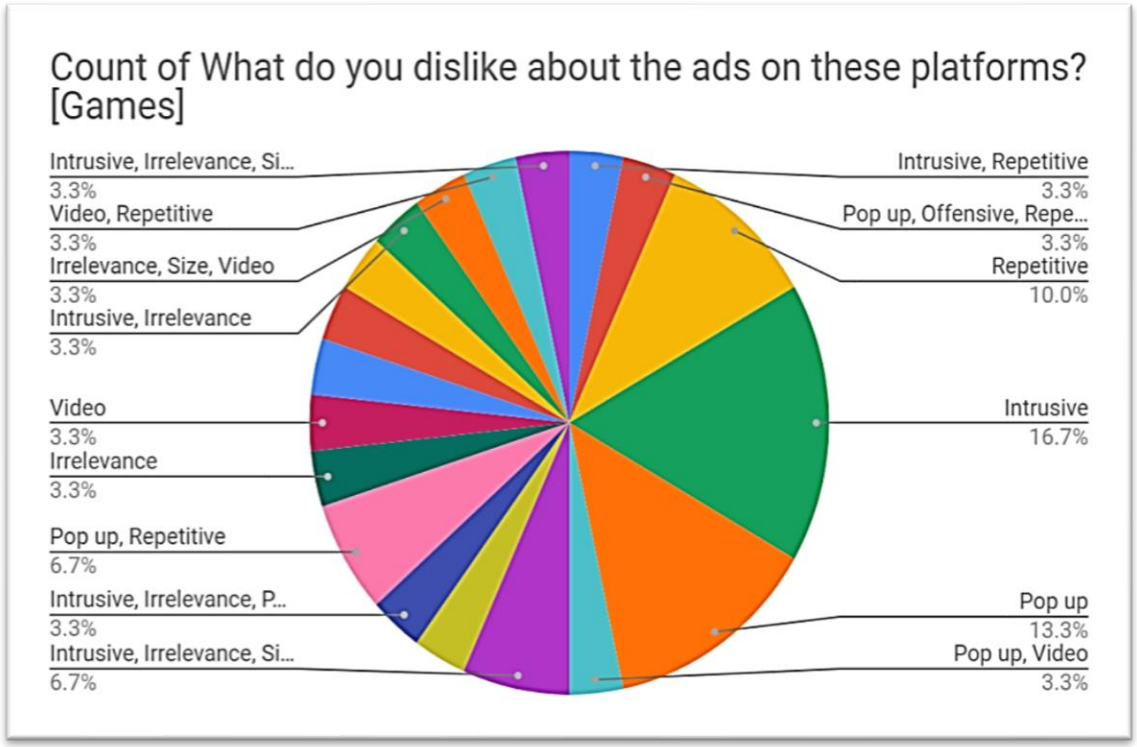
Count of What do you dislike about the ads on these platforms? [Games]
Intrusive, Irrelevance, Si... 3.3%
Video, Repetitive 3.3%
Irrelevance, Size, Video 3.3%
Intrusive, Irrelevance 3.3%
Video 3.3%
Irrelevance 3.3%
Pop up, Repetitive 6.7%
Intrusive, Irrelevance, P... 3.3%
Intrusive, Irrelevance, Si... 6.7%
Intrusive, Repetitive 3.3%
Pop up, Offensive, Repe... 3.3%
Repetitive 10.0%
Intrusive 16.7%
Pop up 13.3%
Pop up, Video 3.3%

Fig 35

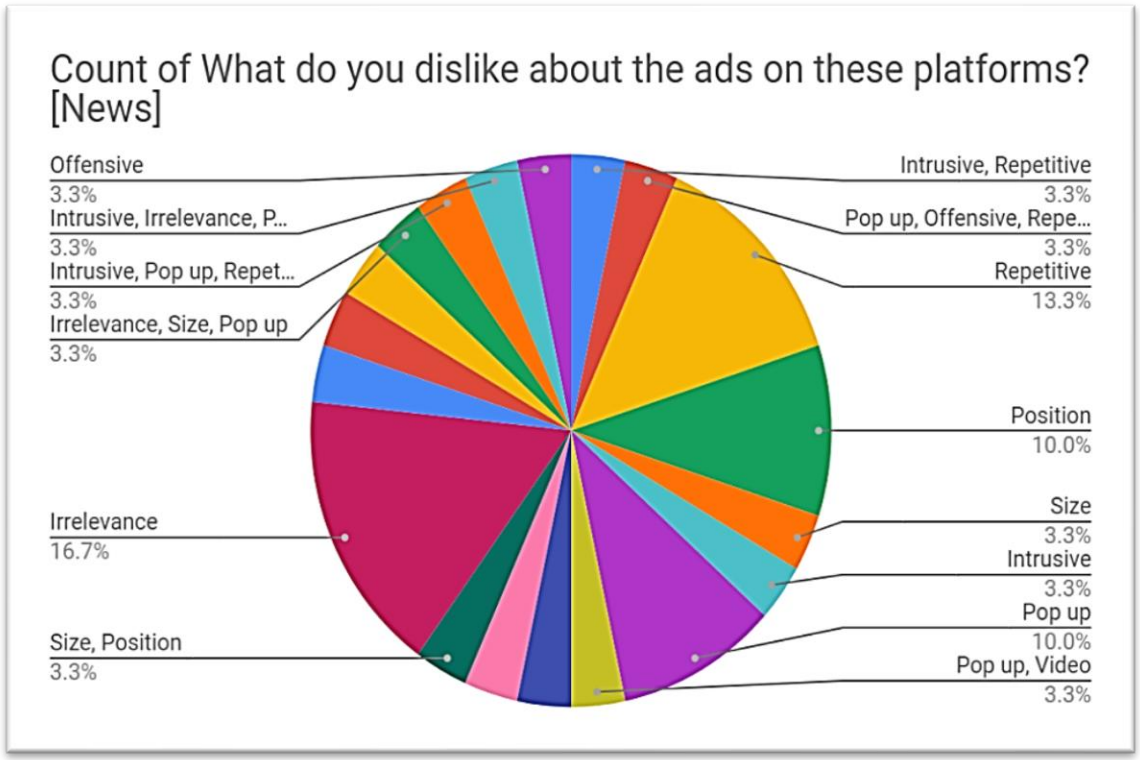
Count of What do you dislike about the ads on these platforms? [News]
Offensive 3.3%
Intrusive, Irrelevance, P... 3.3%
Intrusive, Pop up, Repet... 3.3%
Irrelevance, Size, Pop up 3.3%
Irrelevance 16.7%
Size, Position 3.3%
Intrusive, Repetitive 3.3%
Pop up, Offensive, Repe... 3.3%
Repetitive 13.3%
Position 10.0%
Size 3.3%
Intrusive 3.3%
Pop up 10.0%
Pop up, Video 3.3%

Fig 36

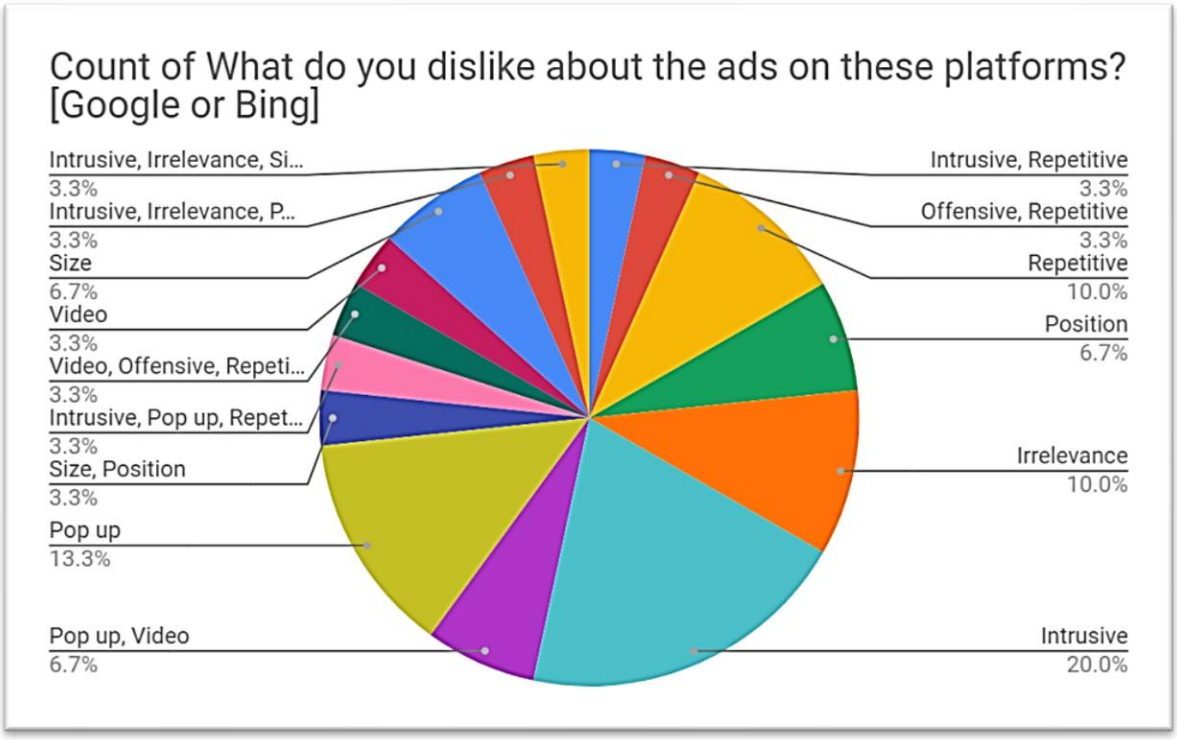
Count of What do you dislike about the ads on these platforms? [Google or Bing]
Intrusive, Irrelevance, Si... 3.3%
Intrusive, Irrelevance, P... 3.3%
Size 6.7%
Video 3.3%
Video, Offensive, Repeti... 3.3%
Intrusive, Pop up, Repet... 3.3%
Size, Position 3.3%
Pop up 13.3%
Pop up, Video 6.7%
Intrusive, Repetitive 3.3%
Offensive, Repetitive 3.3%
Repetitive 10.0%
Position 6.7%
Irrelevance 10.0%
Intrusive 20.0%

Fig 37

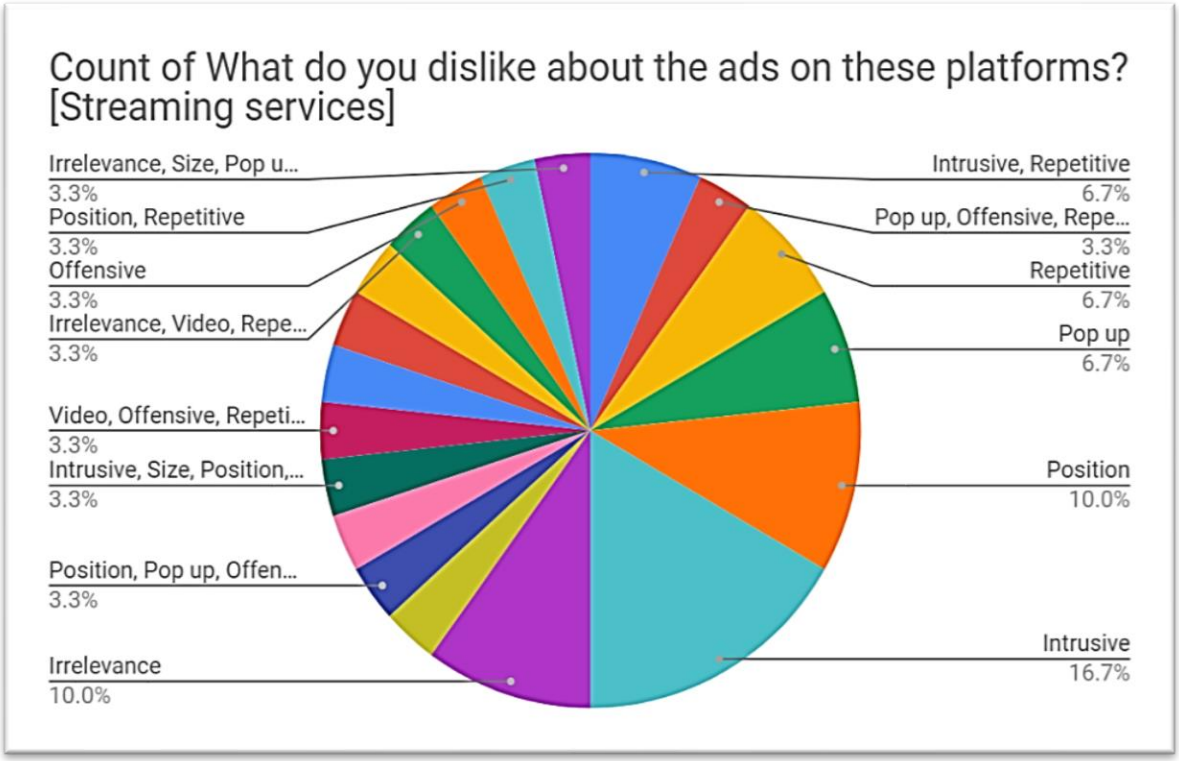
Count of What do you dislike about the ads on these platforms? [Streaming services]
Irrelevance, Size, Pop u... 3.3%
Position, Repetitive 3.3%
Offensive 3.3%
Irrelevance, Video, Repe... 3.3%
Video, Offensive, Repeti... 3.3%
Intrusive, Size, Position,... 3.3%
Position, Pop up, Offen... 3.3%
Irrelevance 10.0%
Intrusive, Repetitive 6.7%
Pop up, Offensive, Repe... 3.3%
Repetitive 6.7%
Pop up 6.7%
Position 10.0%
Intrusive 16.7%

Fig 38

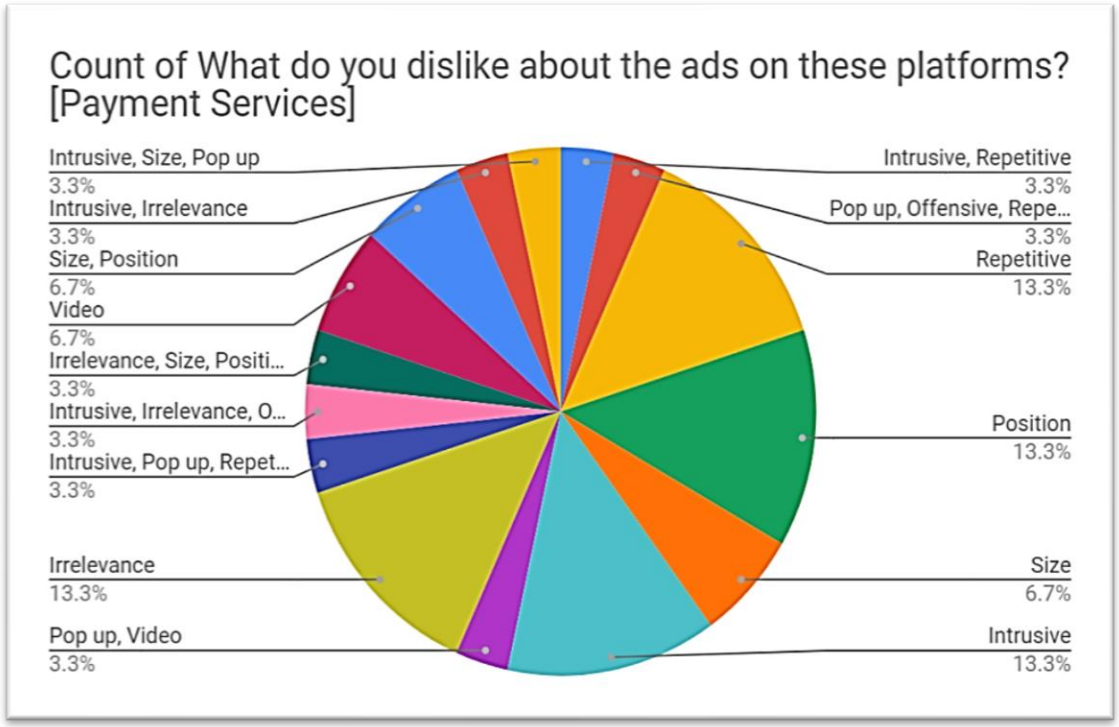

Fig 39

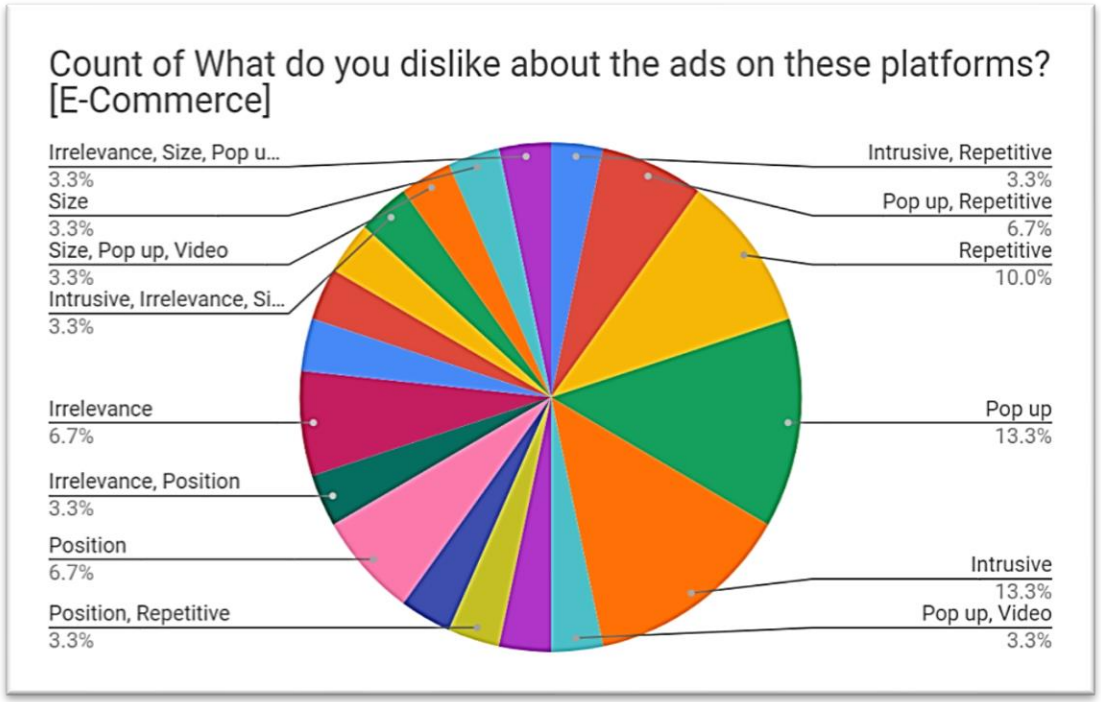

Fig 40

DISCUSSION & SUMMARY OF RESULTS

6.1 Inference

In the research conducted, 60% were of the age of 25-31, while 40% were of the age 21-24. 53.3% were female and 46.7%; male. Not surprisingly all had smartphones and majorly spent 6-8hrs a day on their smartphones, followed by 3-5 hrs. This indicated that mobile had the biggest portion of attention of the modern millennial consumer. Almost all of them preferred apps over browser, while being fairly open to the idea of adverting and mobile advertising. We also encountered a certain paradox of people not comfortable revealing their location but didn't outrightly oppose location based advertising. Major usage drivers were Google, social media and games followed by the rest. The users preferred a certain kind of ad on specific platforms, like:

- Games - entertaining, engaging
- News - Informative
- Google - Informative and credible
- Streaming - Relevance and entertaining
- Payment - Relevance to the app, credibility
- E-commerce - Credible, Relevance to the app in use

While most of them were skipped, a majority of them were also clicked followed by personalized behaviour varying from platform to platform. Like people were more prone to downloads on social media and gaming apps and purchase on new and payment services.

Across platforms, ads which were repetitive, intrusive to the experience of the app, like pop up ads were unpopularly disliked.

Due to the existence of multiple touch points where the millenials interact with the brand due to the use of multiple devices, millenials are in the active pursuit of connection so as long as the advertising is relevant and connects to the target audience, there is a massive positive response.

Coming to the inclination to mobile advertising, the acceptance is definitely higher as the maximum screen time that millenials get are from mobile devices and the applications they use.

Considering that millennials are looking for connection, it is no wonder that branded content and branded apps have a positive feedback. For they are more immersive in their experience of the brand at the comfort of the millennial's homes.

Millennials are a highly curious breed and mostly use their phones to search information develop their knowledge. They are also social animals and spend most of their time on social networks, connection, sharing, liking and opinionating about issues that are important to them. With the rise of hyper casual games, millennials are also stuck to their screen playing games that require little mental effort but also

manages to engage them during travel or waiting. Streaming services and payment services are the upcoming market for engagement with highly entertaining content and attractive offers and discounts (As millennials are promiscuous shoppers), respectively.

CONCLUSION

7.1 Closing remarks

Post the analysis of the research, we can establish with certainty that the millennials like the ads that are personalized and have relevance to their point of views along with ads that are non-intrusive and engaging. Millennials don't buy products. They are not that kind of consumers. They invest their money and soul into brands they feel connection with.

Though they have an apprehension against giving permission for their location. They also are highly inclined towards location based advertising.

The mobile has become a ubiquitous doorway to the consumer's daily life, touching all aspect of his/her life, holistically.

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5. BloombergQuint: BQ WhatsApp, Source: MMA Smarties, Bronze, India, 2018

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9. Understanding the Orientation of Gen Y Toward Mobile Applications and In-app Advertising in India, Varsha Jain, Ketaki Bhave and Subhadip Roy

The study of awareness of farmers towards usage of Pesticides in India : Issues and Challenges

Dr.Anil Pande
Assistant Professor
Jamnalal Bajaj Institute, Mumbai

Mangesh Gaikwad
Research Scholar

Abstract:
India has achieved self sufficiency in food grain production through use of fertilizers, high yielding varieties, mechanization of farms and use of pesticides. Crop protection chemicals plays vital role to reduce food losses cause by pest and diseases. Although consumption of pesticide in India is lower than other develop countries, production and consumption of pesticide in India show steady growth leading to biggest issue of environmental and human health problems. Present investigation was undertaken to study awareness of farmers towards usage of Pesticides in India and related Issues and Challenges. Information base on available review of literature and other authentic data sources.

Analysis of literature revealed that majority farmers adopt crop protection measures on advise by Pesticide dealers . No farmer followed CIBRC(Central Insecticide Board Registration Committee) guidelines for pest management. The recommended dose, time and frequency & number of application of the pesticides are generally overlooked by the farmers. Lack of awareness , low education regarding the undesirable health and environmental effects was observed to influence the approach of the farmers towards adopting requisite protective measures, unsafe pesticide handling. Pesticide use raises a number of environmental worries, including human and animal health hazards. This has resulted into short term and long terms Impact on respiratory system, nervous system, reproductive system of humans. Also pose serious threats to environment and non target organism. Hence biggest challenge is to increase awareness among farmers, pesticide applicators and dealers towards judicious use of pesticide and safe handling to avoid impact to human health and environment. Promotion of alternative pest management strategies such as use of IPM(Integrated pest management), use of biopesticide, botanical pesticide , is essential to reduce usage of chemical pesticides. Farmers should be encouraged to get information on Pesticide usage from Agricultural Universities and extension workers, Mobile APP and farmer portal developed by Ministry of Agriculture, Govt .of India .etc. . There is a tremendous scope for agricultural extension activity through which stewardship can be achieved.

Key words : Pesticides, Ministry of Agriculture ,CIBRC, Crop protection, Environment

1. Introduction :

India is basically an agricultural country . Agriculture plays a vital role in India's economy. 54.6% of the total workforce is engaged in agricultural and allied sector activities (Census 2011) and accounts for 17.1% of the country's Gross Value Added (GVA) for the year 2017-18

As per the Land Use Statistics 2014- 15, the total geographical area of the country is 328.7 million hectares, of which 140.1 million hectares is the reported net sown area.

India has been able to increase the agricultural output. Food grain production which stood at merely 50 million tones in 1948-49 (Interdisc Toxicol .2009 vol.2(1)1-12) has increase to 284.83 million tones (Annual Report –Department of Agriculture 2017-18)

This has been possible due to improved means of cultivation, use of sophisticated technology, use of fertilizers etc. In order to meet the growing demand of food, fertilizers are used to increase productivity while Agrochemicals are used to control pest and diseases. On an average , 16.80 % of major crop loss in India due to pest and diseases . This annual loss caused by pest and disease estimated to be US 35877.32

Crop protection chemicals plays vital role to reduce food losses cause by pest and diseases. Pesticides though not desirable are inevitable to prevent pre-harvest and post-harvest losses which have assumed significance importance during recent times in agriculture. Introduction of synthetic pesticides in agriculture has over shadowed the traditional methods of plant protection and contributed to Food security.

Indian farmers are not aware of the cost benefit ratio for use of pesticides due to lack of awareness on optimum pesticides use hence per capita consumption of pesticides of India stands at 0.27(kg/Ha) which is lower than other developed countries like China (13.06 kg/ha), Japan (11.85 kg/ha), Brazil (4.57 kg/ha) and other Latin American countries which in turn lowers food productivity causes loss of crops caused by pest attacks. (FICCI Report 2019)

The recommended use of pesticides vis-a vis their effectiveness on wide range of pests, provoke the farmers to use them against pest of other crops also, on which they are not recommended to boost their economy. Though strict regulations have been laid down by international agencies like WHO, EPA(Nyakundi et al, 2010) , in India agencies like Central Insecticide Board and Registration Committee(CIBRC) and Food Safety and Standard Authority of India (FSSAI) the recommended dose , time and frequency of application of the pesticides are generally overlooked by farmer (Gagan et al,2016) Various crops tend to be sprayed heavily up to the time of harvest, and then shipped directly to market with no waiting period and moreover many are consumed whole. This create a very significant potential for pesticide residues causing negative health effects on consumers . Pesticide poisoning is a major global health problem in the recent days. At the same time no much attention is given to requisite safety measures to be adopted and the recommended mode of application for different kind of commonly used pesticides.

Ill effects of pesticide on human, animal and environmental health have also been well established as they may enter into the environment through a variety of channels(percolation through soil and ground water), as a part of run off water thus entering into surface water bodies, as aerosols when applied as sprays, as residue in various plant parts , soil and water . Apart from affecting the target pests they also influence the native micro and macro flora of the agricultural soils and water.

Currently there is a boom in the global pesticide market and new insecticides, fungicides; herbicides are being introduce with greater level of activity. There is however need for a conscious efforts to minimize the hazards to human beings and environment. There is a growing awareness

about the ill-effect of pesticides on human & animal health, Environment, natural resources and sustainability of agriculture production. These problems have necessitated assessing of views of farmers and consumers on health hazards due to indiscriminate use of pesticide and make them aware about negative effect of indiscriminate use of pesticides.

Thus this study focused on overall trend of pesticides usage in agriculture and attempts to assess the perception and awareness of farmers and consumers on health hazards due to pesticide use ,base on available review of literature. And Other authentic data sources.

Table : 1 Area Production and Yield of major crops2015-16 to 2017

Crops	Area(Lakh Hectare)			Production (Milion Tones)			Yield kg/hectare		
	2015-16	2016-17	2017-18	2015-16	2016-17	2017-18	2015-16	2016-17	2017-18
Rice	434.99	439.93	437.89	104.41	109.7	112.91	2400	2494	2578
Wheat	304.18	307.85	295.96	92.29	98.51	99.7	3034	3200	3371
Coarse Cereal	243.89	205.08	242.05	38.52	43.77	46.99	1579	1750	1941
Pulses	249.12	294.45	299.93	16.32	23.13	25.23	655	786	841
Food grains	1232.12	1292.31	1275.63	251.54	275.11	284.83	2041	2129	2233
Oilseeds	260.87	261.77	246.45	25.25	31.28	31.31	968	1195	1270
Sugarcane	49.27	44.36	47.32	348.45	306.07	376.9	70720	69001	79650
Cotton	122.92	108.26	124.29	30.01	32.58	34.89	415	512	477
Jute	7.82	7.63	7.35	10.52	10.96	10.14	2421	2585	2481

Source : Annual Report 2018-19 Department of Agriculture,Cooperation &Farmers welfare

2.Research Questions : 1.If growing rate of pesticide industry have effect on stake holders and environment?

On the basis of secondary data sourced through authentic sources it is observed that the agricultural productivity has been increased many fold per decade. The possible drivers are fertilizers, pesticides, Improved seeds, mechanization of farms etc. But there is hazardous effects of chemicals to human kind if they consume contaminated food. Naturally question arises , one side country need to be self sufficient in food grains & vegetables and on other side what should be the content of chemical dose to get the expected yield. So the research questions hovers around whether farmers are well informed, well educated regarding appropriate doses of pesticides to be use.

3.Objective of Study :-

A. To present an overview of Pesticide Industry in India
B. To study the Trend and growth of Pesticide Industry in India
C. To evaluate awareness of Indian farmers about pesticides usage.

Table : 2 Crop losses caused by insect pest to major agricultural crops in India

Crop	Actual production(Million Tones)	estimated loss in yield		Hypothetical Production in absence of losses(million Tones)	Moderate Value of estimated losses (USD Million)
		%	Total(Million Tones)		
Cotton	58.17	30.00	24.93	83.10	15767.69
Rice	106.65	25.00	35.55	142.20	8467.36
Maize	24.26	18.00	5.33	29.59	1268.41
Rapeseed	7.88	20.00	1.97	9.85	1026.70
other oilseeds	15.16	12.00	2.07	17.23	1215.55
Groundnut	9.71	15.00	1.71	11.43	1172.13
Pulses	19.78	15.00	3.49	23.27	2285.29
Coarse seeds	19.03	8.00	1.65	20.68	378.20
Sugarcane	352.14	20.00	88.04	440.18	3160.25
Wheat	93.51	5.00	4.92	98.43	1135.75
		16.80			35877.32

Source : Indian Journal of Entomology , 77(2): 165-168(2015)

D. To highlight the positive and adverse effects of pesticides on human being and farm output.

4.Literature Review

4.1Overview of Pesticide Industry :

In India Pesticides were introduce in 1948 but production was started in the year 1952 mainly benzene hexa chloride (BHC) . Technical grade manufacturer of Agrochemicals make high purity

chemicals which is raw material in value chain, in manufacturing of formulation. High purity agrochemicals are sold in bulk to formulators, who in turn prepare formulations by adding inert carriers, solvents, surface active agents, deodorants etc. These formulations are packed for retail sale and bought by farmers. Agrochemicals are diluted in recommended doses and applied on seeds, soil, irrigation water and crops to prevent the damages from pests, weeds and diseases.

In India there are about 125 technical grade manufacturers, 800 registered formulators, more than 1,45,000 distributors and 60 technical grades pesticides. Around 80% of the generic and non-generic pesticides are manufactured by major Indian manufacturing and multinational companies.

Agrochemicals are broadly classifies into four types:

1. Insecticides: Insecticides provide protection to the crops from insects by either killing them or by preventing their attack. Industry is dominated by insecticides accounting for 60% of overall demand. E.g. Malathion, Chlorpyrifo, Cypermethrin etc.

2. Fungicides: Fungicides are used to control diseases on crops and are used to protect the crops from the attack of fungi. Fungicides comprises only 18% of total pesticides market share with its application in fruits, vegetables and rice etc. e.g. Mancozeb, Sulphur , Auzoxystrobin.etc.

3. Herbicides: also called as weedicides are used to kill undesirable plants comprises 16% market share Bispyriback sodium, Glyphosate, Paraquat etc.

4. Others: – Other agrochemicals mainly include Fumigants, Biostimulants, nematicides and Rodenticides which protect the crops from pest attacks during crop storage and accounts for 6% share of Pesticide market. E.g. Aluminium phosphide Zinc Phosphide, Biozyme, ,

Fig .1 : Pesticide Installed Capacity- Production (Technical Grade) 2010-11 to 2017-18

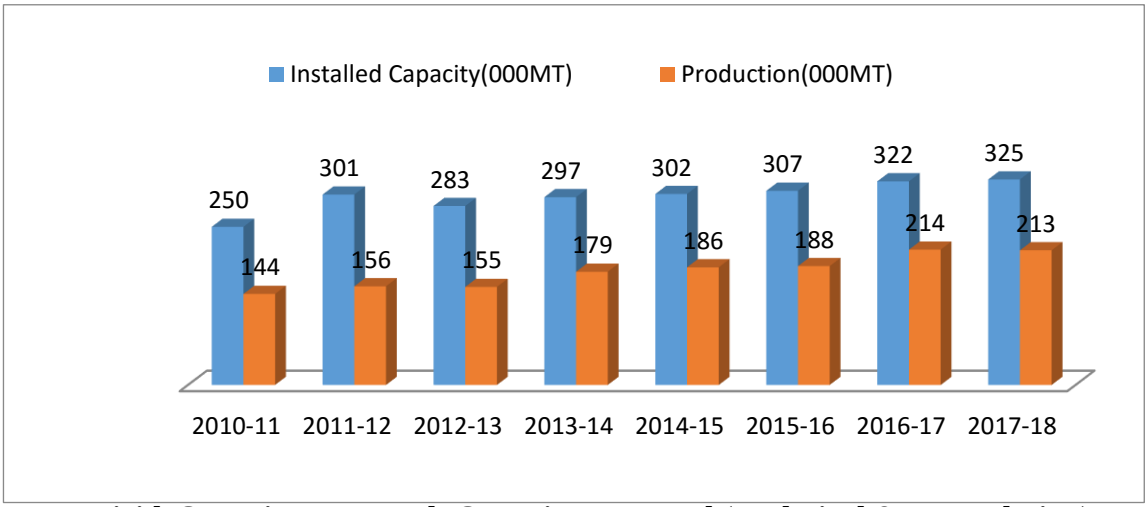
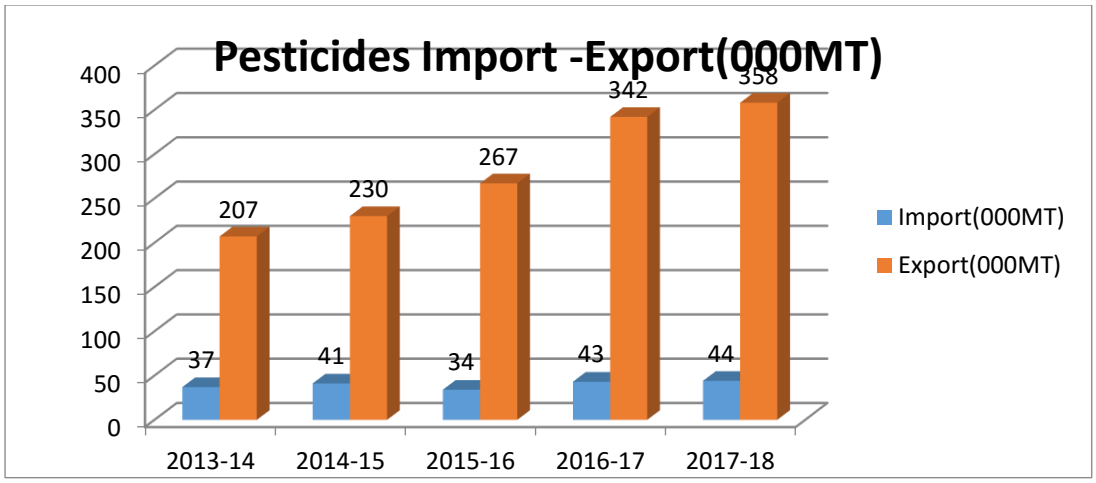
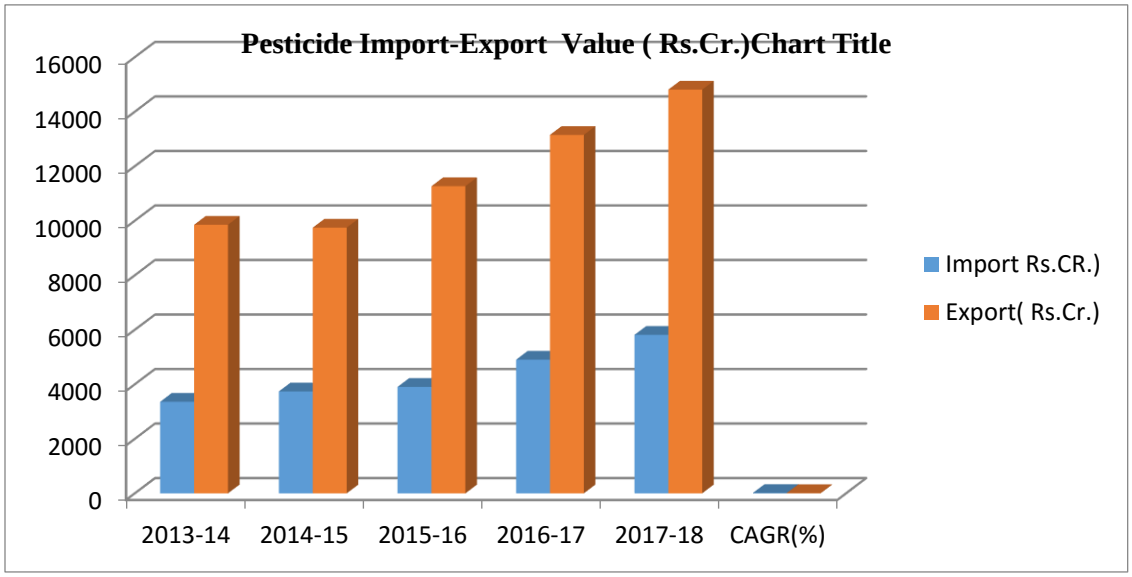


Fig.2 : **PesticideQuantity Imported -Quantity Exported (Technical & Formulation)**



Source : Chemical and Petrochemical Statistics at a glance 2018

Fig. 3 : Pesticide Import & Export Value wise 2013-14 to 2017-18



4.2 Trend and growth of Pesticide Industry

Fig. 4. Pesticide consumption in India

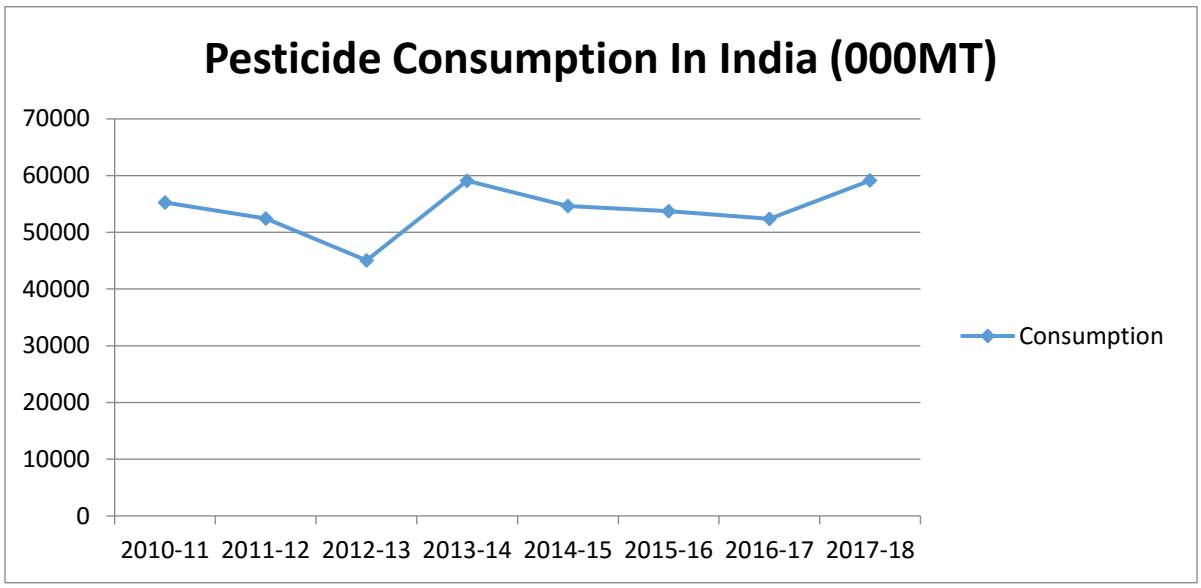


Table 3 : State wise consumption of Pesticide 2010-11 to 2017-18 (MT)

Product	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	*2017-18*	CAGR%
Andhra Pradesh	8869	9289	2803	4253	4050	2713	274	1432	-20.38
Bihar	675	655	687	765	787	831	790	961	4.51
Chhattisgarh	570	600	812	1016	1589	1625	1660	1450	12.38
Goa	9	8	9	9	12	48	NR	24	13.04
Gujarat	2600	2190	1210	2330	1730	1980	1713	1692	-5.23
Haryana	4060	4050	4050	4080	4070	NR	4050	4025	-0.11
Himachal Pradesh	328	310	325	344	379	450	341	467	4.52
Jammu & Kashmir	1818	1711	1739	1723	1921	2251	2188	2430	3.69
Jharkhand	84	151	151	430	650	493	541	NR	NA
Karnataka	1858	1412	1615	1735	1793	1434	1288	1409	-3.40
Kerala	657	807	712	1276	910	1123	895	899	4.00
Madhya Pradesh	633	850	846	987	696	732	694	NR	NA
Maharashtra	8317	6723	6618	10969	8663	11665	13496	15568	8.15
Orissa	871	555	606	1219	1075	723	876	1207	4.16
Punjab	5730	5625	5730	5723	5689	5743	5764	5987	0.55
Rajasthan	3623	2802	2559	2736	2694	2475	2269	1227	-12.66
Tamil Nadu	2361	1968	1766	2142	2096	2096	2092	2090	-1.51
Telangana	NA	NA	nA	3812	2862	2950	NR	4866	NA

Uttar Pradesh	8460	8839	9057	10164	9736	10457	10614	10595	2.85
Uttarakhand	199	206	247	174	172	217	198	111	-7.04
West Bengal	3515	3670	3467	3190	3060	3712	2624	2688	-3.30
Sub Total	55236	52421	45057	59077	54633	53719	52366	59127	
Arunachal Pradesh	10	17	NR	18	18	17	18	18	7.62
Assam	150	160	183	190	190	NR	NR	NR	NR
Manipur	30	33	31	31	31	30	NR	26	NR
Meghalay	10	9	24	44	28	NR	NR	NR	NR
Mizoram	4	4	4	508	805	NR	9	NR	NR
Nagaland	NR	15	NR	16	20	20	20	NR	NR
Sikkim	NR	NR	NR	NR	NR	NR	NR	NR	NR
Tripura	12	266	272	310	346	293	298	329	51.27
Subtotal	216	504	514	1117	1437	359	345	373	
Andaman &Nicobar	NR	15	7	NR	8	NR	NR	NR	NT
Chandigarh	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dadra	NR	NR	NR	NR	NR	NR	NR	NR	NR
Daman	NR	NR	NR	NR	NR	NR	NR	NR	NR
Delhi	48	NR	NR	NR	NR	NR	NR	NR	NR
Lakshdeep	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pondicherry	39	38	41	41	42	43	43	42	0.93
Subtotal	87	54	48	89	50	43	43	42	-0.87
Total	55540	52979	45619	60282	56121	54121	52755	59542	0.87

Source : Chemical and Petrochemical Statistics at glance 2018 *- provivisional figures

4.3.Evaluation of Farmer awareness about usage of Pesticides in India

1. Ganganpreet Singh Brar et al, 2015-16 conducted survey on various aspects of pesticide usage like knowledge of farmers about pest managenment in Cauliflower and brinjal, perception of the kind and frequency as well as severity of pests and diseases, awareness of farmer, safety measures followed during pesticide application and IPM(Integrated pest managenmnet practices) etc. collected from district of Himachal Pradesh, India namely , Hamirpur, Bilaspur and Una . Information was collected from 150 farmers of selected district.

   Majority of farmers were varied between 21 to 50 years. 14.25% has received no formal eduction, 21.89% were below secondary level, 25.36% were educated up to secondary level 30.85% were complted senior secondary schooling.

   Survey study revealed that about 57% of respondents were mainly dependent on the advice of pesticide dealers, followed by relatives/friends (23.66%) as well as information from public extention system personnel(19.33%) No farmer followed CIBRC guidelines for pest management. It was observed that most of the farmers stored the pesticides bottles (81.33%) at safe places in their house. 18.66% placed the bottles in usafe areas without any safety measures. For farmers ,disposal of empty bottles was not a safety concern. Majority farmer (61.66%) sold or reused the empty bottles after washing. 18% farmers adopted safe disposal methods like crushing/ burying in the soil. Only 23.33% farmers disposed the empty bottles fields. It was found that 36% farmers used self protection. Majority of

farmers washed their hand with soap after pesticide application(80%). It was observed that farmers had limited knowledge of pest management as well as consequences of pesticides. The results showed that farmers need to take more precautionary and safety measures to keep their health as well as environment in good state. Increasing farmer's awareness of pesticide hazards to the environment and promotion of alternative pest management strategies such as use of IPM is essential for reducing adverse effect of pesticides on environment.

2. Himani Tyagi et al., 2012-13 conducted suryvey in Faridabad district , Cauliflower and Tomato cultivating areas of Haryana to gather information on various aspects of pesticide usage i.e. type, frequency , dosage etc. farmers perspectives on issues related to health effects, economic aspects etc. as well as pest management practices.
   Total 100 farmers having various levels of educational qualification were randomly selected for collecting the data.
   The result of the study revealed that Efficiency of pesticide for pest control was identified as the most important factor that influences the choice of pesticide by farmers. 58% respondents agreed that pest control is the crucial factor behind selection of pesticide and 42% farmers pointed out cost of the product as the driving factor for the same.
   Recommendation and advice of dealers(24%) and the fellow farmers (20%) were also major contributing factors towards deciding the time of application of the pesticide. However, 16% confirmed the pesticide application on regular basis throughout the crop season without considering the presence of pest or disease symptoms. 16% farmers continue the application even during harvesting. This indicates unregulated , rampant and careless pesticide usage practices among the farmers that lead to serious environmental and health problems.
   The observations regarding the adoption of adequate safety and protective measures related to pesticide application practices were quite disappointing. . Lack of proper awareness and education regarding the undesirable health and environmental effects was established as the chief cause behind this approach of the farmers. 56% farmers did not adopt any kind of safety measures and precautions while applying the pesticides except covering their mouth and nose with cloth. In some cases it was found that inspite of awareness on this issue, farmers were unable to use protective materials due to cost factor. Partial safety measures were adopted by 38% of the farmers. Taking complete protective measures like wearing protective clothing, hand gloves, goggles, nose –masks and taking bath immediately after application etc was reported by mere 3% of them. As a result of continuous and long term exposure of the farm workers to pesticides in various forms and conditions chronic health effects were confirmed by the respondents like nausea , vomiting gastrointestinal problems , dizziness, allergy blurred vision etc.

3. Shetty et al, 2010 carried out study in 28 district from 12 Indian states base on type of crops grown and pesticide consumption pattern to collect information on awareness of pesticide usage pattern. Study revealed that 71% farmers did not follow the optimum dose or number of sprays as per recommendation as the current dosages were not effective to control increased intensity and incidences of pests and diseases in agro- ecosystem since pests have developed resistance .it was observed that most of the respondents followed their own

spraying schedules to control pests and diseases of crops. The increase number of sprays in some districts made agriculture less profitable and resulted in development of resistance. The awareness on the ill effect of pesticides among different categories of respondents reported to be 42%, 44% and 39%for medium , large and small farmers. It was observed that there existed an unhealthy competition among some respondent to achieve higher yields, thereby led to misuse of pesticides. The survey results show that 60% farmers across categories are not aware of the ill effects of pesticides to the ecosystem.

4. Premlata et al ., 2017 studied perceptions of farmers and consumers by conducting survey of 120 farmers from Belgavi district of Karnataka. The number of sprays ranged from 5 to 15, with an average of 9 sprays per farm with standard deviation of 2.64. About 25 per cent of the farmers applied on an average 9 sprays, followed by 18.33 per cent, 12.50 per cent and 11.67 per cent of farmers applied 8, 6 and 10 sprays respectively.
   Among Medium Pesticide Users 61.29% 51.92% and 62.16% farmers do not use Protective measures from Low pesticide users Medium pesticide users, and High Pesticide users. 22.58%, 19.23% and 21.62% farmers chew tobacco during pesticide application from Low pesticide users, Medium pesticide user and High pesticide users. More than 50% farmers are aware about pesticide hazards of skin irritation, Eye irritation and Dizziness. More than 90% farmers from all the three categories use sufficient pesticide application however less than 10% farmers aware about pesticide labels and lethal dose of Pesticide. 25% farmers from all the categories apply more than 9 applications of Pesticides.

5 . Suryawanshi et al, 2016**,** study on the farmers' education and perception levels in the pesticide predominant zones of Jalgaon district Maharastra (India) was done to have a base line data on the use and misuse of pesticide under various cropping situations. Information from 100 farmers was collected through formal and informal personal interviews about their perception of pesticides usage.
From the Study area it is revealed that Agriculture workers in the study area had a lack of knowledge regarding pesticide use. Due to lack of knowledge and education regarding the undesirable health and environmental effects was established, unsafe pesticide handling reported by the interviewed group of farmers.
87% farmers not using protective measures during Pesticide application. 45-46% farmers observe pesticide health symptoms of Blue red vision and Vomiting. 77% Farmers do not have knowledge of Pesticide residue. 62% faremers through empty pesticides containers in field.

6. Sucheta et al 2019 **,** conducted study in Tijara Tehsil of Alwar district, Rajasthan , for the period 2016-2018 to assess the consumption pattern of pesticides, the farmer's knowledge about pesticides and there use in the agriculture field. it is revealed that only 34.8% farmers have complete knowledge of pesticide application, 76.2% farmers never ready label on pesticide bottle, 47% farmers only use mask at the time of pesticide application, 72.8% farmers through empty pesticide containers on the field. 49.8% farmers has been observe low health hazards effects such as Headche,itching, dizziness after pesticide application .

4.4 Positive and adverse effects of pesticides on human being and farm output.

4.4.1 Positive Effects : -

With the introduction of pesticides, farmers have been able to increase crop yield from the limited land resources. Pesticides allow farmers to maximize the benefits of other valuable agricultural tools, such as high quality seeds, fertilizers and water resources. Pesticides are therefore an indispensable tool for the sustainable production of high quality food and fibers. Pesticides contribute to enhanced human health by preventing disease outbreaks through the control of rodent and insect populations. They enable farmers to produce more crops per unit area with less tillage, thus reducing deforestation, conserving natural resources and curbing soil erosion. Pesticides are also critical for the control of invasive species and noxious weeds. Pesticides used in stored products can prolong the viable life of the produce, prevent huge post-harvest losses from pests and diseases and protect the grain so it is safe to eat.

4.4.2 Pesticide Hazards :

Ideal pesticides must act selectively against certain pest organisms without adverse effects to non-target organisms. However, it is difficult to achieve absolute selectivity and most pesticides are also toxic to humans and other non-target organisms. Pesticide use raises a number of environmental worries, including human and animal health hazards. Food products contaminated with toxic pesticides are associated with severe effects on the human health. More than 95% of sprayed insecticides and herbicides reach a destination other than their target species, including non-target species, air, water and soil.

Direct impact on humans :

Exposure to pesticides both occupationally and environmentally causes a range of human health problems. Pesticide contamination of both surface and ground waters can affect aquatic animals and plants, as well as human health when water is used for public consumption.It has been observed that the pesticides exposures are increasingly linked to immune suppression, hormone disruption, diminished intelligence, reproductive abnormalities and cancer.

Vidhisha et al ,2014 reviewed potential adverse effects of pesticides on different organs systems. Three main routes of pesticide entry into human body , Via dermal, inhalation and ingestion. Pesticide spray mixtures in contact with broken skin are considered as the main route of dermal entry. Pesticide spray mixtures in contact with broken or perspiring skin are considered as the main route of dermal entry. Direct inhalation occurs only for volatile pesticides and the risk they imposed is directly proportional to the degree of volatility of the respective product. Oral ingestion occurs through occupational, intentional or accidental pesticide use when very small amount of spray mist enters the nose and mouth and is swallowed during spraying. In human beings, pesticide poisoning may result either from a single dose of pesticide ‘Acute’ or through the repeated intake in small quantities ‘Chronic’ which accumulate in the body in the form of residues. Human exposure directly or through diet may result in acute and delayed health effects. Acute pesticide poisoning symptoms include allergies, hypersensitivity, giddiness, double vision, headache, dermal abrasions etc Long term effects associated with pesticides include leukemia, lymphomas, soft tissue sarcomas, brain, bone and stomach cancers, damage to the central and peripheral nervous system, reproductive disorders, birth defects, disruption of the immune system and death . Respiratory tract dysfunctions mainly occur in farm workers who are directly involved in the

application of pesticides. Symptom include wheezing, moderate and severe airway irritation, airway obstruction , dry/sore throat, cough, breathlessness and chest tightness.

Punit kumar et al l 2017 , conducted study of Malwa region of Punjab , The study showed that the region was facing an unprecedented crisis of environmental health linked to indiscriminate, excessive, and unsafe use of pesticides, fertilizers, and poor groundwater quality. The region has been described as India's "cancer capital" due to abnormally high number of cancer cases, which have increased 3-fold in the last 10 years. Studies of the region have also highlighted a sharp increase in many other pesticide-related diseases, such as mental retardation and reproductive disorders. The most affected individuals were the agricultural workers who were directly exposed to pesticides. The high use of pesticides, along with environmental and social factors, was responsible for the high concentration of pesticide residues in the food chain of this region.

Impact through food commodities :

Pesticide residues in food and crops are a direct result of the application of pesticides to crops growing in the field, and to a lesser extent from pesticide residues remaining in the soil[9].

During 2017-18, under the Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare sponsored central sector scheme, "Monitoring of Pesticide Residues at National Level", 27 NABL accredited participating laboratories located in different parts of India collected and analyzed the samples of vegetables, fruits, spices, curry leaves, red chili powder, rice, wheat, pulses, milk, fish/marine, tea, meat, egg and water from retail outlets, APMC markets, mother dairy, organic outlets and farm gate for the possible presence of pesticide residues. A total of 23,660 samples were collected and analysed. The pesticide residues were detected in 4,510 samples (19.1%), out of which the residues in 523 (2.2%) samples were found exceeding FSSAI MRL(Maximum residue Limit)

Source : Suryvey Report – Status of Pesticide Residue in India 2017-18

Ajmer et al., 2017 review various aspects of pesticide residues including accumulation of pesticide residues in food grains and various hazards to human health. Many of these chemical pesticide residues, especially derivatives of chlorinated pesticides, exhibit bioaccumulation which could build up to harmful levels in the body as well as in the environment[10]. Persistent chemicals can be magnified through the food chain and have been detected in products ranging from meat, poultry, and fish, to vegetable oils, nuts, and various fruits and vegetables[11]. A study on the levels of pesticides in soft drinks available in the market indicated pesticide residues 24 times higher than Bureau of Indian Standards (BIS) norms. The levels of pesticide residue lindane exceeded the BIS standards by 140 times in some samples. Heptachlor, which banned in India, was found in 71 per cent of the samples, at levels four times higher than BIS standards. Chlorpyrifos was found 200 times more than the BIS standard in a sample manufactured in Thane. The average amount of pesticide residues found in all the samples was 24 times higher than the BIS standards for total pesticides in soft drinks (Source: The Hindu). Organochlorine pesticides, mainly isomers of hexachlorohexane, dichloro-diphenyl-trichloroethane, endosulphan, endrin,

aldrin, dieldrin, and heptachlore, were identified from potable water samples collected from all over India[27].

Impact on environment:

The pesticides spread into the environment has detrimental effect on human health through the contamination of soil, air and water resources and poses significant risks to the environment and non-target organisms, such as beneficial species of insects, soil, micro-organisms, plants and bird .Pesticides have contaminated almost every part of our environment and pesticide residues are found in soil, air and in surface and groundwater.

Surface and ground water contamination

Pesticides can reach surface water through runoff from treated plants and soil. A number of researchers have reported pesticides and heavy metals in drinking and groundwater in different parts of India.

Gagandeep et al , 2017, conducted studies for investigating the heavy metals and pesticides concentration in Agricultural soil and ground water of Mansa district of Punjab, India .

The study revealed high level of Ni, Hg, Se, Cd in soil. High levels of Sr were observed in both soil and groundwater samples . Altogether, the results depict the poor quality of soil and groundwater in the area. These chemical inputs will definitely be having detrimental effects on human health as the incidence of cancer, asthma, kidney, skin, digestive tract diseases, heart ailments, male infertility, female reproductive disorders are increasing in Punjab.

Effect on beneficial soil microorganisms

Sanjay et al carried out a series of field experiments at farmer's field at Sitapur, Paddy growing belt in UP, with different modules of integrated pest management (IPM) including use of safe pesticide formulations. The impact of application of pesticides on the soil properties including soil microbial populations, microbial biomass carbon and enzymatic activity was assessed.

Soil samples were collected from the rhizosphere of paddy from 20 locations in Sitapur district (UP) where the farmers use different types of pesticides in crops. Part of soil samples were use for microbial and biochemical analysis and the other part was use for physicochemical and nutrient analysis. Soil samples were analysed for pH, EC, OC, av. N, total N, carbonate, bicarbonate, chloride, exchangeable ions like Ca, Mg, Na and K .Pesticides, viz. chlorpyriphos, 2,4-D, carbendazim and carbofuron were use in study

In the laboratory incubation experiment, it was observed that soils applied with 2,4-D showed drastic reduction in dehydrogenase activity compared to control. It was observed that there was reduction of dehydrogenase activity in soil by 42.97%, 58.24%, 28.68% and 43.96% when applied with chlorpyriphos, 2,4-D, carbofuron and carbendazim respectively, compared to control soil. It was observed that soils applied with 2,4-D showed reduction in soil organic C content as well as total C content compared to control. There was reduction in soil organic C content from 4.4 g kg–1 in control to 4.2 g kg–1 in soils applied with chlorpyriphos or carbofuron, while the reduction

was 4 g kg–1 in soil having residue of 2,4-D and carbendazim. Total C content in soil was found to decrease by 17.3%, 15.4% and 3.8% when soil was applied with 2,4-D, carbofuron and carbendazim respectively, compared to control soil. maximum decrease in soil total organic C occurred in soils having residues of 2,4-D. Soil bacterial populations were drastically reduced in soil from farmers' practice of using pesticides. In the soils applied with 2,4-D, reduction in soil organic C content and total C content was observed. This also resulted in maximum decline of soil dehydrogenase activity (DHA) compared to chlorpyriphos, carbofuron and carbendazim.

5. **Some observations -**

Overview of pesticide industry revealed that capacity and production during the period 2010-11 to -2017-18 remain at increasing trend except for the period 2017-18. Although installed capacity increase at CAGR 3.8% , Production increase at the CAGR 5.74%. Export quantity increase at the CAGR 14.7% vs. 4.4% import quantity.

Pesticide use in the southern states has been declining at CAGR -3.09 . Whereas in the northern states it has been inclined at CAGR 0.61% . Among the states increasing trend of pesticide consumption was notices in Tripura, Maharastra, Punjab, Orissa, UP, Chhattisgarh, Haryana. Declining trend was observed in Andhra Pradesh, Rajastan, Tamil nadu, , West Bengal. No trend observed in Uttarakhand. Highest consumption of pesticide was observed in Maharastra 15568MT with CAGR 8.15% , followed by Uttar Pradesh 10595MT with CAGR 2.85% for 2017-18 and For the country consumption of pesticide showed inclined trend at CAGR 0.87% . This increasing trend of pesticide consumption therefore aggravate the socio-economic and environmental and human health problems.

Analysis of literature pertaining to awareness of farmers towards usage of pesticide revealed that majority farmers adopt crop protection measures on advise by Pesticide dealers . No farmer followed CIBRC(Central Insecticide Board Registration Committee) guidelines for pest management. The recommended dose, time and frequency & number of application of the pesticides are generally overlooked by the farmers. Farmers follow the pesticide application on regular basis throughout the crop season without considering the presence of pest or disease symptoms. Farmers continue the application even during harvesting. The increase number of pesticide sprays made agriculture less profitable and resulted in development of resistance. Not much attention is given to the requisite safety measures to be adopted and the recommended mode of application for different kinds of commonly used pesticides. Although farmers store the pesticide bottles at safe places, after use of the same, they reuse or sell the empty bottles or left in the field. Disposal of empty bottles was not a safety concern for them . Lack of awareness , low education regarding the undesirable health and environmental effects was observed to influence the approach of the farmers towards adopting requisite protective measures .It was further observed ,Farmers had limited knowledge of pest management as well as consequences of pesticides. Farmer's education levels plays an important role as it widens the vision of the farmers and exposes them to various aspects and opportunities related to agriculture particularly to promote pesticide and environmental stewardship. low education level may have led to farmers'

misperception on pesticides ill effects. There is a tremendous scope for agricultural extension activity through which stewardship can be achieved.

Analysis of literature pertaining to effects of pesticides revealed that Pesticides are indispensable tool for the sustainable production of high quality food and fibers, by preventing pre and post harvest losses due to pest and diseases. Pesticide use raises a number of environmental worries, including human and animal health hazards. Impact on humans occurs through occupational exposure and through pesticide contaminated food, contamination of water, air etc. Pesticide residue in food commodities is of immense concern. This may lead to acute or delay health effects. Acute pesticide poisoning symptoms include allergies, hypersensitivity, giddiness, double vision, headache, dermal abrasions etc Long term effects associated with pesticides include leukemia, lymphomas, soft tissue sarcomas, brain, bone and stomach cancers, damage to the central and peripheral nervous system, reproductive disorders, birth defects, disruption of the immune system and death .

The pesticides spread into the environment has detrimental effect on soil, air and water resources and poses significant risks to the environment and non-target organisms, such as beneficial species of insects, soil, micro-organisms, plants and bird.

6.Conclusion and recommendation:-

India has achieved self sufficiency in food grain production ,Pesticides are inevitable to reduce losses cause by pest and diseases and has gain significant importance during recent times in agriculture.

Over view and trend of Pesticide industry revealed that per capita consumption of pesticide in India is 0.27kg ,lower than other develop countries, but consumption of pesticides in India shows steady growth at CAGR 0.87% for the study period2010-11 to 2017-18. Although installed capacity increase at CAGR 3.8% , Production increase at the CAGR 5.74%. This shows that still there is scope for the industry to increase the production of Pesticide. Export quantity increase at the CAGR 14.7% vs. 4.4% import quantity. Highest consumption of Pesticide found in state like Maharashtra ,Uttar Pradesh, Punjab , Haryana, Telangana.

Increasing trend of pesticide consumption leads to biggest issue of environmental and human health problems. Lack of education and awareness among farmers towards pesticides , results into problems like overuse ,misuse of pesticide with unsafe handling. This has resulted into short term and long terms Impact on respiratory system, nervous system, reproductive system of humans. Also pose serious threats to environment and non target organism.

Hence biggest challenge is to increase awareness among farmers, pesticide applicators and dealers towards pesticide usage ,about recommended and approved doses by Central insecticide board , frequency of application, time of application, safe handling and disposal of pesticide and its containers, waiting period . Farmers look upon to dealers for their technology requirement and being the first contact for purchase of their requirements of Agri Inputs. There is need to designed appropriate education and training programs for pesticide dealers to educate and assist the farmers in proper and adequate usage. Safety measures should be make affordable for farmers to encourage

the usage of the same. Promotion of alternative pest management strategies such as use of IPM(Integrated pest management), involving judicious use of pesticide base on economic threshold level, use of bio pesticide, botanical pesticide , is essential. Farmers should be encouraged to get information on optimum quantity of pesticide use from Agricultural Universities and extension workers, Mobile APP and farmer portal developed by Ministry of Agriculture, Govt .of India .etc. . There is a tremendous scope for agricultural extension activity through which stewardship can be achieved.

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