



ISSN : 2395-7069 || Impact Factor: 6.289

INSPIRA- JOURNAL OF COMMERCE, ECONOMICS AND COMPUTER SCIENCE

(A National Bi-lingual Quarterly Double Blind Peer Reviewed Refereed Journal)

VOLUME 10

NO. 01

JANUARY-MARCH, 2024

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THE ROLE OF CHATGPT AND ARTIFICIAL INTELLIGENCE IN EDUCATION

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ABSTRACT

This abstract provides an overview of the role of ChatGPT and Artificial Intelligence in education. The study's objectives were to examine the elements or the factors of Artificial Intelligence and ChatGPT impacting education and recommending ways for its better implementation. The study's focus was restricted to how AI is used and what impact it has on education. The study's objective was successfully realized through the application of a quantitative research approach that made effective use of the questionnaire as a research design and methodology. The incorporation of artificial intelligence (AI) into education has become a crucial driver in the alteration of conventional learning models. Among the cutting-edge apps, ChatGPT—which utilizes OpenAI's GPT-3.5 architecture—stands out as a flexible instrument with the capacity to completely transform the educational environment. This abstract examines the various ways that ChatGPT and AI are influencing education, emphasizing how they support student engagement and personalized learning. As a language model, ChatGPT is efficient at producing and comprehending natural language. This feature makes it possible to develop chatbots and intelligent virtual assistants for use in education that can converse with students in a way that is human-like. These AI-powered friends provide individualized instruction while adjusting to each student's pace and learning preferences. By means of ongoing communication, they pinpoint areas of proficiency and deficiency, adjusting instructional materials to suit individual requirements, and cultivating a more effective and personalized learning environment. Beyond individualized instruction, AI has a place in collaborative and interactive learning settings. ChatGPT enhances peer-to-peer collaboration and student-teacher interactions by facilitating lively and captivating conversations. Artificial intelligence (AI)-generated role-playing games, simulations, and virtual conversations enhance the immersive and interactive nature of learning. The conclusions of this research talks about meeting a range of learning needs by promoting inclusivity by addressing diverse learning needs. ChatGPT's flexibility reduces barriers to education by supporting students with varying skills and learning styles. The ability to translate between languages helps to close communication gaps and promote international cooperation and knowledge sharing.

KEYWORDS: ChatGPT, AI, Open AI's GPT-3.5 Architecture.

Introduction Artificial Intelligence

The term artificial intelligence (AI) describes the intelligence displayed by machines that are able to carry out tasks that normally call for human intelligence. This includes cognitive skills like learning, creativity, problem-solving, and decision-making. AI is revolutionizing many industries, including education, by providing individualized instruction and content customization based on user requirements. Always keeping students engaged, adaptive AI systems modify the level of difficulty and pace in response to their performance. Learners are further empowered by accessibility tools and virtual tutoring. AI has been used in educational institutions in a variety of ways, including the automation of administrative tasks and processes, curriculum and content development, instruction, and student learning processes, according to an analysis of the academic sources chosen for the study.

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Role

- **Personalized Way of Learning**

Adapting to individual learning preferences is one of the most advantageous applications of AI in education. AI technology is easily able to adjust to various modes of learning. To make matters even more complicated, artificial intelligence technology can evaluate previous student performance and modify and create lesson plans specifically for each student based on that analysis.

- **Improved Student Engagement**

AI has the power to capture students' interest and engagement with course material. The use of chatbots in the classroom is one method that educators can apply AI. There are more opportunities to keep students engaged when they can personalize and adjust to the learning styles of students all because of chatbots like ChatGPT.

- **Grading and Assessments**

Usually teachers spend a great deal of time grading assignments. AI technology can aid in accelerating this procedure. Additionally, AI technology can evaluate essays and assignments and provide feedback to students on grammar, content, and vocabulary. Teachers can concentrate on other crucial facets of teaching, such as lesson planning and student engagement, by taking on that task instead of that shift.

Virtual Reality

Virtual reality is one recent educational innovation that is being used for everything from teaching math to teaching history. People can explore and interact with a three-dimensional computer-generated environment through virtual reality. By inventing fresh approaches to incorporate experiential learning into the classroom, VR educators are genuinely influencing the experience of being a student. VR is a fantastic tool for fostering a sense of community among students. Using the same virtual reality program in separate classrooms allows them to safely communicate despite their physical separation.

Learning Management Systems

All activities of a school can be easily managed with the help of a learning management system, which offers a centralized interface. Although there are many uses for these instruments, the following are the common ones that they are employed for:

- Assign homework
- Communicate with parents and students

CHATGPT

One of such AI tools is ChatGPT which has played a significant role in education. OpenAI's ChatGPT is a potent language model that is changing education. By customizing the content and offering feedback according to each person's strengths and shortcomings, it promotes personalized learning. Students can participate in interactive discussion, which will increase engagement and help them understand more deeply.

Usage of CHATGPT for Students

- **Answering Questions**

Students can use ChatGPT to ask questions about particular subjects or ideas they are having trouble understanding, and the AI will respond with explanations, examples, or resources to help them grasp the material.

- **Problem-Solving**

ChatGPT can help students become more adept at solving problems by walking them through the steps of solving arithmetic, physics, or chemistry problems and assisting them in understanding the underlying ideas and techniques.

Challenges

While there are many benefits of integrating AI into education, teachers and students must also address the challenges it presents with critical thinking. Learning through AI alone can impede the acquisition of critical cognitive abilities.

The possible over-dependence on solutions and answers produced by AI is one major cause for concern. If students only use AI to solve problems, they risk becoming passive learners who are unable to think critically or on their own. Teachers must actively encourage students to analyze, question, and assess information beyond what artificial intelligence can provide.

Ethical Considerations While Integrating Artificial Intelligence into Education

Artificial intelligence (AI) systems are built on massive amounts of data, and biased data may produce results that are discriminatory in nature. There is a need to ensure that AI algorithms are developed in an unbiased and equitable manner. It requires a thorough examination of the training data as well as the underlying data used by the algorithms. Techniques for bias detection and mitigation should be used to find and address any possible biases. Another crucial component is transparency. All stakeholders—parents, teachers, and students—should have a thorough understanding of how AI systems operate, what data is collected, and how decisions are made. This transparency fosters trust and allows for fruitful discussion regarding the moral use of AI in education.

Striking A Balance: Integrating AI as a Complementary Educational Tool

To ensure that AI is incorporated as a complimentary tool rather than as a substitute for human interaction, it is imperative to strike a careful balance. AI can provide individualized learning experiences by analyzing data and customizing content to meet the needs of each student. It can track development, deliver customized resources, and give focused feedback. With this customized approach, students can focus on specific areas of improvement and learn at their own pace, which can be very beneficial.

Remembering that education is about more than just academic success. The social and emotional growth of students is equally important. AI is unable to replace the importance of interpersonal relationships, empathy, and teamwork in the learning process. Instructors play a crucial role in helping students develop these skills, providing guidance, and preserving a positive learning environment.

Objectives

- Examine the transformative role of ChatGPT and AI in educational practices.
- Assess the impact of ChatGPT and AI technologies on student learning outcomes.

Research Problem Statement

Despite the growing interest in leveraging ChatGPT and AI in education, a comprehensive understanding of their optimal integration remains lacking. This research aims to bridge this gap and provide insights into effective utilization.

Literature Review

Sl. No.	Title of Paper	Author	Year	Research Gap
1	Bridging the Gap: ChatGPT in Personalized Learning	Johnson, Alice and Smith, Brian	2020	Lack of comprehensive exploration on the potential of ChatGPT in tailoring educational content to individual learner preferences.
2	Enhancing Tutoring Systems with Conversational AI	Wang, Chen and Lee, David	2021	Limited understanding of the impact of ChatGPT on improving the effectiveness of virtual tutoring systems in educational settings.
3	Integrating ChatGPT in Language Learning Platforms	Garcia, Maria and Rodriguez, Santiago	2022	Unexplored opportunities and challenges in leveraging ChatGPT to enhance language acquisition within online language learning platforms.

Research Gap

While some studies highlight the potential of ChatGPT and AI in education, a critical analysis reveals gaps in understanding optimal integration strategies, the impact on diverse student populations, and the long-term sustainability of these technologies in educational contexts.

Research Methodology

Surveys and interviews are used to gather comprehensive data for analysis. Quantitative method has been used for collecting data. A questionnaire was formed for this purpose.

Research Design

ChatGPT and AI tools are implemented in selected educational institutions, focusing on evaluating their effectiveness in improving teaching methodologies and enhancing student engagement. The research design enables a holistic examination of the integration process.

Data Analysis and Interpretation

Primary Data

It is first-hand information collected by a researcher. In this research, we have used Questionnaire method to collect primary data.

Sampling Techniques

Random sampling method: Here individual is chosen entirely by chance and each member has an equal probability of getting selected.

Sample Unit

People aware of ChatGPT and AI in education.

Sample Size

52 respondents; PAN India.

Sample Profile

Students (of High school, Diploma, Bachelor's Degree, Master's degree, PhD graduates), Teacher, Doctorate.

Age Group: Under 18 years – 55 years & above.

Data Analysis Tools

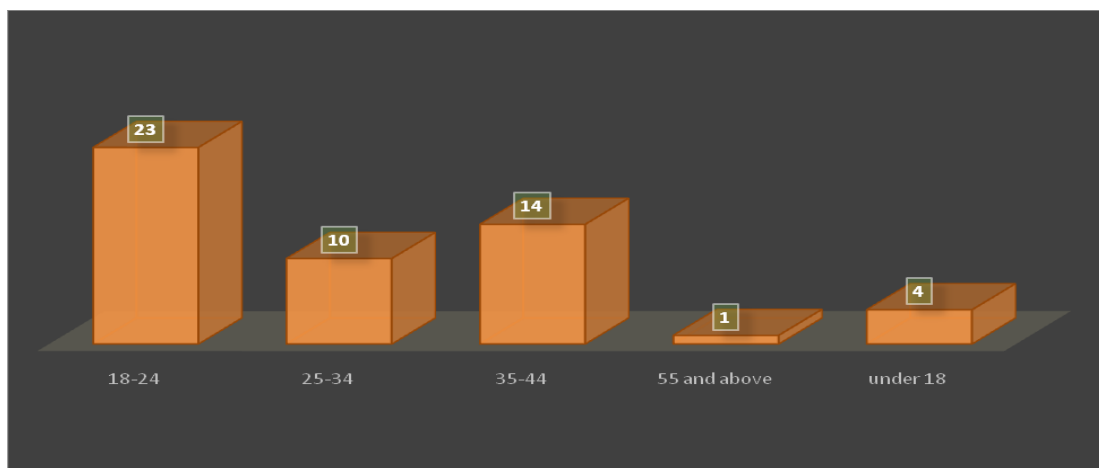
MS Excel.

Data Analysis

- **Age Profile:** Out of the responses collected for this research, the following was the distribution of the age groups of respondents.

Table 1

Age	Count
18-24	23
25-34	10
35-44	14
55 and above	1
under 18	4
Grand Total	52



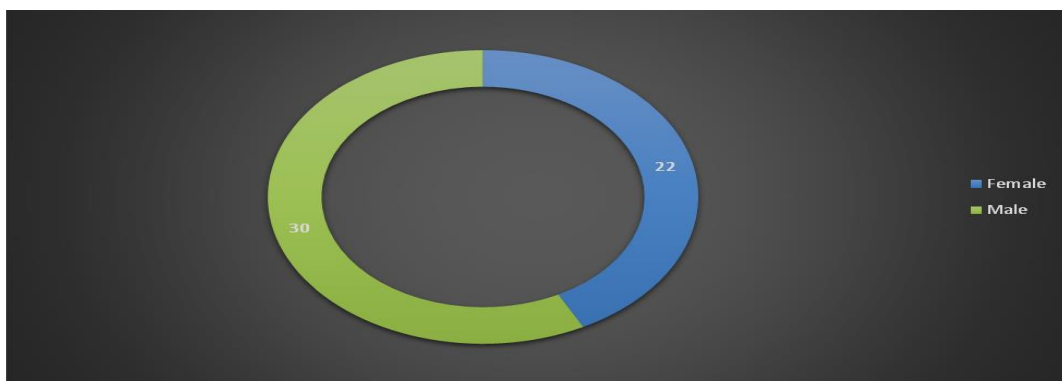
Interpretation

From the above graph and table, it is interpreted that the highest number of respondents (23) belong to the age group of “18-24 years”, 14 of the respondents belong to the age group of “35-44”, 10 of the respondents belong to the age group of “25-34 years”, 4 of the respondents belong to the age group of “under 18” and 1 respondent belong to the age group of “55 and above”.

- **Gender Profile:** Out of the responses collected for this research, the following was the distribution of the gender groups of respondents

Table 2

Gender	Count
Female	22
Male	30
Grand Total	52



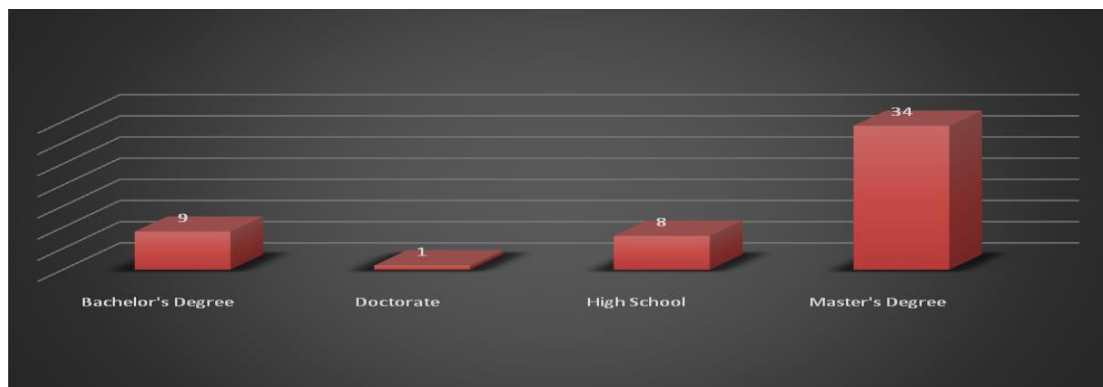
Interpretation

From the above graph and table, the highest number of respondents 30 belong to the gender “Male” while 22 of the respondents belong to the “Female” gender.

- **Education Profile:** Out of the responses collected for this research, the following was the distribution of the education profile of respondents.

Table 4

Education	Count
Bachelor's Degree	9
Doctorate	1
High School	8
Master's Degree	34
Grand Total	52



Interpretation

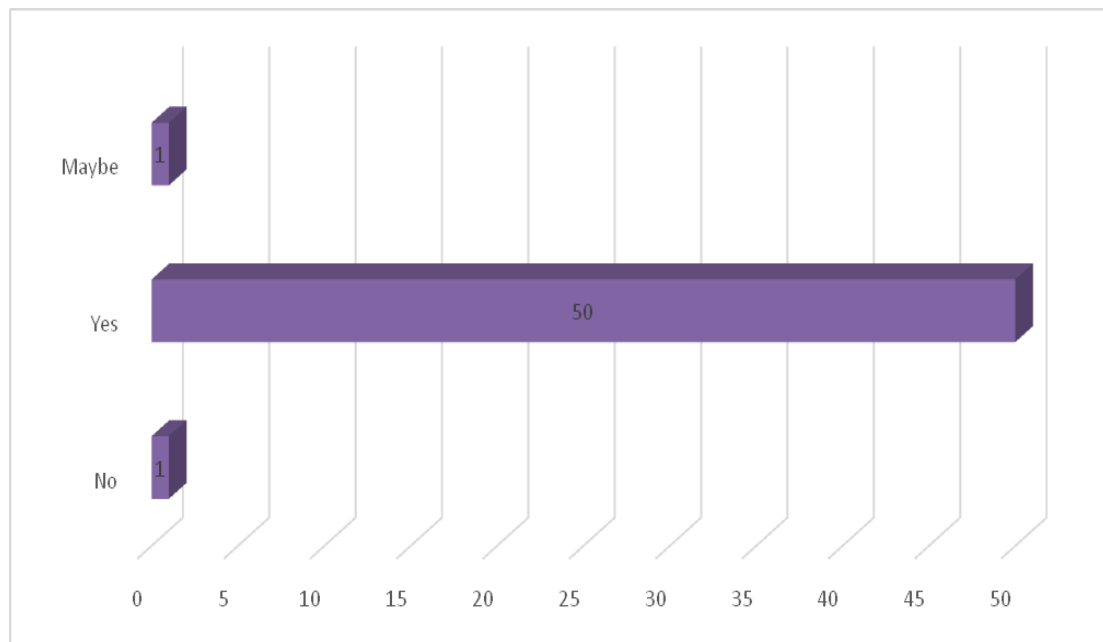
From the above graph and table, it is interpreted that the highest number of respondents 34 belong to the “Master’s Degree”, 9 respondents from “Bachelor’s Degree”, 8 respondents from “High School” and 1 respondent is a “Doctorate”.

Have you personally experienced the use of AI or ChatGPT in an educational setting?

Out of the responses collected for this research, the following was the distribution of the education profile of respondents.

Table 6

Personally Experienced	Count
No	1
Yes	50
Maybe	1
Grand Total	52



Interpretation

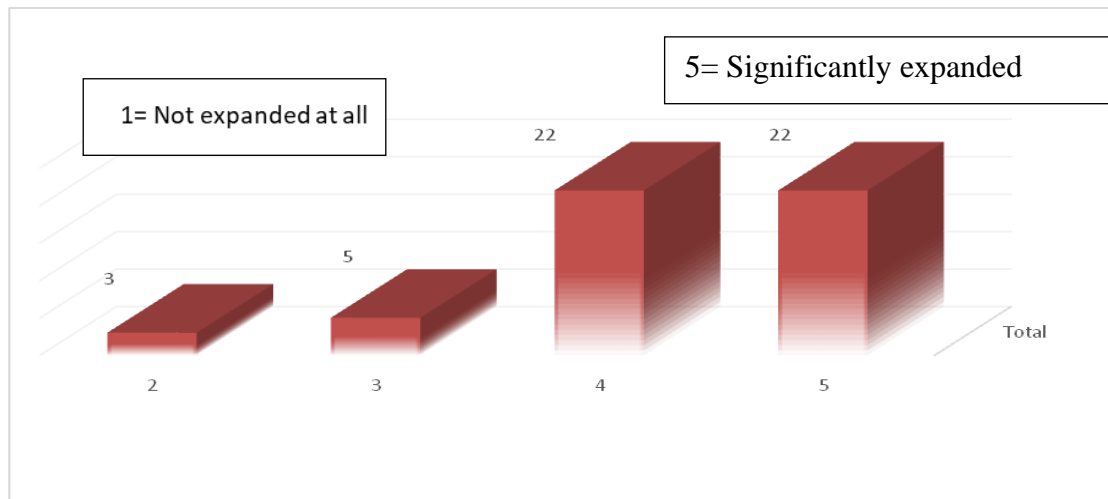
From the above graph and table, it is interpreted that the highest number of respondents, i.e, 50 have personally experienced the use of AI or ChatGPT in an educational setting, 1 respondent has not personally experienced it and 1 respondent has responded with “Maybe”.

How do you envision the role of AI, including ChatGPT, in education in the next 5 years?

Out of the responses collected for this research, the following was the distribution of the envisions of the role of AI, including ChatGPT, in the education in the next 5 years of respondents.

Table 8

Envision the Role (Ratings)	Count
2	3
3	5
4	22
5	22
Grand Total	52



Interpretation

From the above graph and table, it is interpreted that the highest number of respondents is 22 rated "4 and 5", 5 respondents rated "3" and 3 respondents rated "2" of the envisions of the role of AI, including ChatGPT, in the education in the next 5 years of respondents.

Research Findings

- Most of the respondents belonged to the age group of 18-24, i.e., 23 respondents.
- Among the total respondents, most of the respondents were male, i.e., 30.
- Most of the respondents belonged to the Master's Degree, i.e., 34.
- Most of the respondents, i.e., 50 have personally experienced the use of AI or ChatGPT in an educational setting.
- Out of the total respondents, 22 respondents gave a rating of "4 and 5" in regard to their envision of the role of AI, including ChatGPT, in education in the next 5 years.

Recommendations

From the data analysis and interpretation it has been noted that most of the individuals are aware about the presence of Artificial Intelligence and ChatGPT in education. While most individuals are aware about it, there still persists an aspect of Artificial Intelligence that largely impacts the diverse population using it on a day to day basis.

The ethical perspective of using Artificial Intelligence is one such aspect. Though Artificial Intelligence and ChatGPT have proved itself in all the domains, not just in education, there remains an ethical perspective attached to it. The transparency and the validity of the data and information provided by these platforms should be double-checked before completely relying on them.

Also, these platforms are handy and efficient on a day to day basis but they shouldn't and never be given that much authority to take over the human mind.

Limitations

- Limited empirical evidence: Although potential advantages are mentioned, there isn't enough thorough empirical research on most topics to confirm ChatGPT's efficacy in a range of educational settings.
- Underexplored ethical issues: Although some research raise ethical questions, more research is needed to fully understand potential biases in ChatGPT algorithms, data privacy concerns, and the possibility of abuse.
- Inadequate attention on pedagogical integration: The possible uses for ChatGPT is examined, but the comprehensive frameworks or methods for successfully incorporating it into current teaching methods are not examined.

Conclusion

One of the key developments in education is the use of IT technologies and their applications. Artificial Intelligence (AI) technologies are introduced in education; their use in teaching and learning is growing every day. As per the 2018 Horizon report, there will be a 43% surge in AI applications between 2018 and 2022.

AI has impacted a wide range of sectors, including education. It is a modern approach to teaching and learning that can address and resolve a variety of learning-related problems. It can address problems like teacher deficiencies and content accessibility so that students can learn without feeling pressurized or negatively affecting others. In the field of education, AI adoption and implementation is inevitable. Smart learning, tutoring systems, and social robots are just a few examples of AI technologies. The industry also benefits greatly from a wide range of other intelligent technologies, including virtual facilitators, online learning environments, learning management systems, and learning analytics.

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Glossary

1. Learning Management System(LMS) : It is a software program which is used to administer, record, track, report, and deliver educational courses.
2. Adaptive Learning : It refers to educational technology that modifies the way that content is presented to students depending on their individual performance and responses.
3. Machine Learning : A branch of machine learning that uses multi-layered neural networks, or deep neural networks.
4. Intelligent Tutoring System (ITS) : An intelligent tutoring system (ITS) is a software program designed to provide personalized and adaptive learning experiences to students.

Annexure

1. Age

- a) Under 18
- b) 18-24
- c) 25-34
- d) 35-44
- e) 45-54
- f) 55 and above

2. Gender

- a) Male
- b) Female
- c) Prefer not to say

3. Educational background

- a) High school
- b) Bachelor's Degree
- c) Master's Degree
- d) Doctorate

4. Have you personally experienced the use of AI or ChatGPT in an educational setting?

- a) Yes
- b) No

5. How do you envision the role of AI, including ChatGPT, in education in the next 5 years?

- a) Not expanded at all
- b) Significantly expanded.



DOES AGE AND MARITAL STATUS MATTERS? AGE AND MARITAL STATUS AS MODERATOR IN RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE AND SUBJECTIVE WELL-BEING

Dr. Harpreet Singh*
Dr. Sarupriya**

ABSTRACT

Purpose: This research paper aims to analyse the moderation effect of age and marital status in relation between emotional intelligence and subjective well-being in government and private healthcare sector. For this purpose, path coefficients and moderation analysis for age and marital status between emotion intelligence and subjective well-being is carried out by using Multigroup analysis in PLS-SEM

Design/Methodology/Approach: Data collection in the study was conducted by surveying 320 doctors using purposive sampling, and SmartPLS version 3.2.9 to investigate the collected data.

Findings: Results depict that age as a moderator displays similar effect on the relationship between emotional intelligence and subjective well-being dimensions among both government and private sector doctors. On the contrary, marital status acts as a moderator in the relationship between emotional intelligence and subjective well-being dimensions differently in both government and private healthcare sector.

Practical Implications: The implications fosters the fact that while framing guidelines, recruitment strategy and training and development programs, doctors' demographics should be considered in order to amplify their levels of emotional intelligence and subjective well-being.

Originality/Value: Age as a moderator between emotional intelligence and subjective well-being facilitate a doctor to build the capacity for emotional. The role of marital status as a moderator exceeds the chances of an individual's perception, management and utilization of emotions which increases happiness, positive state of mind and optimism, finally leading to the path of subjective well-being.

KEYWORDS: Age, Marital Status, Emotional Intelligence, Subjective Well-Being, Healthcare Sector.

Introduction

Emotional intelligence plays a major part in determining a doctor's behavior and bedside manners. Emotional intelligence also can help make physicians more resilient to the stresses of the profession and less likely to experience burnout (Loyola University Health System, 2017). This helps in maximizing patient focused care and increased patient satisfaction levels and clinical outcomes. It is estimated from previous studies (Puliyakkadi et al., 2019, Sharmila, 2015) that doctors with higher emotional quotient cater the needs of patients efficiently which further results in positive behavioral outcomes such as satisfaction with job, life satisfaction, experiencing more positive emotions than negative emotions at workplace. Emotional intelligence very well predicts one's subjective sense of physical wellbeing and mental health. In the latest research studies, emotional intelligence and well-being have found to be gaining considerable amount of attention. Many studies prove that people with greater emotional intelligence experience high emotional well-being. There exist profusion of studies which indicates that better emotional intelligence promotes better mental health, psychosomatic health and

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physical health of an individual (Koydemir et al., 2013, Krishnaveni & Deepa, 2013). Emotional intelligence is positively correlated to positive outcomes that promotes a better evaluation of one's life and increases one's sense of subjective well-being. Individuals who own strong emotional abilities are found to better perceive, use, understand, and manage their emotions, resulting in greater SWB (Zhao, Kong, & Wang, 2013).

Theory

Age significantly moderates the relation between pleasurable emotions and life satisfaction in a study conducted on 173 younger adults and 173 older adults from USA (Berenbaum 2013). Emotional intelligence diminishes with the increase in workload, less frequent and challenging nights and emergency duties whereas age, gender and medical specialties were positively linked to emotional intelligence among 200 postgraduate students from two different medical colleges in Delhi (Kumar et al. 2017). Meaning making holds positive relation with subjective well-being but definite nature of the component of meaning can be assessed by the individuals' life phase and cultural context (Alea & Bluck, 2013). Elderly males and females do not differ in the level of their life satisfaction and they face problems differently and use different means to achieve life satisfaction in a study conducted by (Kaur 2011). To examine the levels of life satisfaction in Turkish academicians a study was conducted by Toker (2012). The results proved that professors have higher level of life satisfaction as compared to assistant professors, instructors and research assistants. Marital status is not significantly related to life satisfaction. In a study conducted by Devi (2014) there exist much difference in well-being levels of married and unmarried teachers and there exist no major differences in their emotional intelligence. Katana et al. (2019) confirmed the nurses who have more job experience have high levels of subjective well-being, lesser suppression of expression of positive emotions and perceived stress. SWB tend to be more in nurses during off days of the week in comparison to the working days. The feeling of contentment in one's overall life is also high as the marital life is good. Emotional intelligence is useful in understanding and managing the feelings of oneself and their family members as it helps in improving the quality of life and successful married life. This is supported by Fitness (2006).

Methodology

Research Model

The study aims to investigate the moderating effect of age and marital status on the relationship between emotional intelligence and subjective well being among doctors. A structured questionnaire was developed and data was collected from registered allopathic doctors (MBBS) and post graduate (MD, MS) government and private doctors working in hospitals in Punjab using purposive sampling technique. Doctors' emotional intelligence is measured using 33 statements based on the Schutte self-report emotional intelligence test (SSREIT) (Schutte, 1998). Emotional intelligence is measured through four factors i.e. perception of emotion (POE), managing own emotion (MOWNE), managing other's emotion (MOTE) and utilizing emotion (UE). (Schutte et al., 1998, Fukuda et al.,2011, Musonda et al.,2019, Saklofske et al.,2003). Subjective well-being (SWB) consist of three interrelated components namely life satisfaction, positive affect, negative affect. Life satisfaction is measured by using Satisfaction with Life Scale (SWLS) (Diener et al., 1985). Positive Affect (PA) and Negative Affect (NA) is measured using Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). Demographic data like age, gender and marital status etc. were asked from the respondent in the questionnaire.

Participants

The population in the study comprised of government and private sector doctors practicing in the state of Punjab. A total sample of 160 doctors each from government and private sector were selected from eight districts of Punjab namely Bathinda, Amritsar, Jalandhar, Hoshiarpur, Mohali, Ludhiana, Patiala and Gurdaspur. The demographic profile of respondents in depicted in table 1 below

Table 1: Frequency and Percentage of Respondents

	Government Sector		Private Sector		Total	
	<i>f</i>	% age	<i>f</i>	% age	<i>f</i>	% age
Age						
30-50 years	108	67.5	111	69.4	219	68.4
50 years and above	52	32.5	49	30.6	101	31.6
Marital Status						
Single	39	24.4	24	15	63	19.7

Married	121	75.6	136	85	257	80.3
Place of Work (District)						
Bathinda	20	12.5	20	12.5	40	12.5
Amritsar	20	12.5	20	12.5	40	12.5
Jalandhar	20	12.5	20	12.5	40	12.5
Mohali	20	12.5	20	12.5	40	12.5
Ludhiana	20	12.5	21	13.1	41	12.8
Hoshiarpur	20	12.5	19	11.9	39	12.2
Patiala	20	12.5	20	12.5	40	12.5
Gurdaspur	20	12.5	20	12.5	40	12.5

Source: Primary Data

Hypotheses Development

- H₀₁* Age does not significantly moderate the relationship between emotional intelligence and life satisfaction among government sector doctors.
- H₀₂* Age does not significantly moderate the relationship between emotional intelligence and positive affect among government sector doctors.
- H₀₃* Age does not significantly moderate the relationship between emotional intelligence and negative affect among government sector doctors.
- H₀₄* Age does not significantly moderate the relationship between emotional intelligence and life satisfaction among private sector doctors.
- H₀₅* Age does not significantly moderate the relationship between emotional intelligence and positive affect among private sector doctors
- H₀₆* Age does not significantly moderate the relationship between emotional intelligence and negative affect among private sector doctors
- H₀₇* Marital status does not significantly moderate the relationship between emotional intelligence and life satisfaction among government sector doctors
- H₀₈* Marital status does not significantly moderate the relationship between emotional intelligence and positive affect among government sector doctors
- H₀₉* Marital status does not significantly moderate the relationship between emotional intelligence and negative affect among government sector doctors
- H₀₁₀* Marital status does not significantly moderate the relationship between emotional intelligence and life satisfaction among private sector doctors
- H₀₁₁* Marital status does not significantly moderate the relationship between emotional intelligence and positive affect among private sector doctors
- H₀₁₂* Marital status does not significantly moderate the relationship between emotional intelligence and negative affect among private sector doctors.

Based on the above hypotheses, a theoretical framework is depicted in the Figure 1, illustrating the effect of emotional intelligence on subjective well-being and the effect of age and marital status as a moderator on this relationship.

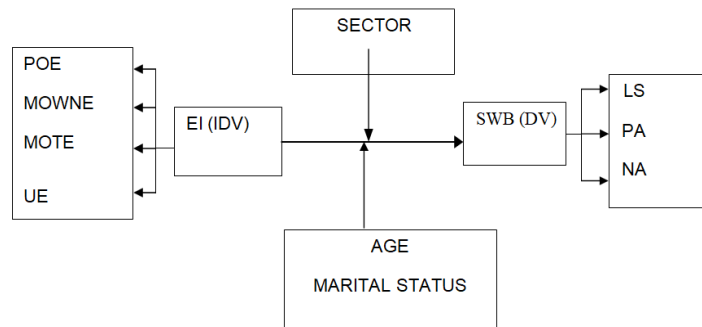


Figure 1: Conceptual Model

Results

Partial least squares (PLS-SEM) version 3.2.9 is used to determine the path relationships proposed in the conceptual research model. Firstly, the confirmatory factor analysis (CFA) is conducted to establish the reliability and validity of the measurement model. The measurement model consisted of total seven exogenous variables showing indicator loadings above the threshold value of 0.70 resulting in good construct reliability and validity. Loadings exceeding 0.708 are desirable as they indicate that the construct explains more than 50 percent of the indicator's variance, thus providing acceptable item reliability (Hair et al., 2019). Composite reliability and Cronbach's alpha values are verified to measure the internal consistency reliability of the constructs. Values between 0.60-0.70 are considered acceptable and the value between 0.70 to 0.90 is considered as satisfactory to good (Hair et al., 2019). Convergent validity of the constructs is assessed through AVE. The acceptable AVE range is 0.50 or higher which indicates that the construct explains at least 50 % of the variance of its items (Hair et al., 2019). The square root of AVE of all the latent constructs is greater than the correlation between the latent variables. Therefore results support the discriminant validity between the constructs (Perception of emotions, managing own emotions, managing others' emotions, utilizing emotions, life satisfaction, positive affect and negative affect).

Moderating Effect

The present study is focused on the effect of demographics age and marital status on the relationship between emotional intelligence and subjective well-being in the selected government and private hospitals. To examine the effect of categorical variables on the relationship between these two variables, multi group analysis (MGA) was used. The variable which affects the strength and modifies the nature of relationship between two variables is termed as a Moderator. Moderation occurs when the effect of an exogenous construct on an endogenous construct depends on the values of another variable, which influences (i.e. moderates) the relationship (Hair et al., 2014). In order to determine the moderating effect of age and marital status on the relationship between emotional intelligence and life satisfaction, positive affect and negative affect of doctors separately in government and private sectors, the sample size (320) is divided into government and private sector comprising 160 doctors each. These two groups are individually analysed based on age and marital status by using multi group analysis.

Table 2: Path Coefficients for Age (30-50yrs and 50yrs and above) in government doctors

Boot Strapping Results on Moderation Analysis	Path Coefficient (β) Original (Age) 30-50yrs	Path Coefficient (β) Original (Age) 50 yrs and above	t-values (Age) 30-50 Yrs	t-values (Age) 50 yrs and above	p-values (Age) 30-50 Yrs	p-values (Age) 50 yrs and above
Emotional Intelligence → Life Satisfaction	0.309	0.439	0.845	4.289	0.039*	0.000*
Emotional Intelligence → Positive Affect	0.507	0.533	2.809	7.544	0.005*	0.000*
Emotional Intelligence → Negative Affect	-0.217	-0.287	0.665	1.732	0.016*	0.008*

Source: Primary Data; *denotes significant at 5% significance level

Table 2 depicts the path coefficients of the moderating variable age (30-50 years & 50 years and above) with its t-values and significance values. The relationship between emotional intelligence and life satisfaction is found to be significant for age group 30-50 years ($\beta=0.309$, $t=0.845$, $p < 0.05$). For the age group 50 yrs and above the relationship between emotional intelligence and life satisfaction is also significant ($\beta=0.439$, $t=4.289$, $p < 0.05$). The relationship between emotional intelligence and positive affect is found to be significant for both age groups 30-50 years ($\beta=0.507$, $t=2.809$, $p < 0.05$) and age group 50 years and above ($\beta=0.533$, $t=7.544$, $p < 0.05$). The relationship is significant between emotional intelligence and negative affect for the age group 30-50 yrs ($\beta=-0.217$, $t=0.665$, $p < 0.05$) and for the age group 50 and above ($\beta=-0.287$, $t=1.732$, $p < 0.05$). These three relationships are found to be significant in relation to age among government doctors. The moderating effect of age on these significant relationships is examined with the help of three parameters namely, PLS MGA, Parametric test and Welch Satterwaith test.

Table 3: Moderation Analysis of Age (30-50 yrs vs.50 yrs and above) in Government Doctors

Hypotheses	Moderation Analysis	Path Coefficients diff. (30-50 yrs-50 yrs and above)	PLS MGA p-value (30-50 yrs vs. 50 yrs and above)	Parametric Test p-value (30-50 yrs vs.50 yrs and above)	Welch Satterwaith Test p-value (30-50 yrs vs. 50 yrs and above)	Decision
H ₀₁	Emotional Intelligence→Life Satisfaction	-0.130	0.746	0.712	0.730	Accepted
H ₀₂	Emotional Intelligence→Positive Affect	-0.026	0.992	0.872	0.894	Accepted
H ₀₃	Emotional Intelligence→Negative Affect	0.070	0.904	0.832	0.848	Accepted

Source: Primary Data;*denotes significant at 5% significance level

Table 3 highlights the difference in the path coefficients ($\beta=-0.130$) of two age groups for the relationship of emotional intelligence and life satisfaction which is found to be non significant for three parameters of moderation i.e. PLS MGA ($p=0.746, >0.05$), Parametric test ($p=0.712, >0.05$) and Welch Satterwaith test ($p=0.730, >0.05$). Hence the hypotheses do not tend to ascertain the moderating role of age between emotional intelligence and life satisfaction. Therefore, H_{01} is accepted. The difference in path coefficients for the age group 30-50 yrs and 50 yrs and above for the relationship between emotional intelligence and positive affect is $\beta=-0.026$, which is not significant in all the three measures of moderation analysis; PLS MGA($p=0.992, >0.05$), Parametric test($p=0.872, >0.05$) and Welch Satterwaith test ($p=0.894, >0.05$) therefore accepting the null hypotheses H_{02} , which states that age does not moderate the relationship between emotional intelligence and positive affect. While testing the moderating effect of age on relationship between emotional intelligence and negative affect, the difference in path coefficients ($\beta=0.070$) for the age group 30-50 yrs and 50 yrs and above for this relationship is found to be insignificant for three parameters of moderation; PLSMGA($p=0.904, >0.05$), Parametric test ($p=0.832, >0.05$) and Welch Satterwaith test ($p=0.848, >0.05$). Hence null hypotheses H_{03} is accepted and hence it can be concluded that age does not moderate the relationship between emotional intelligence and negative affect.

Table 4: Path Coefficients for Age (30-50 yrs and 50 yrs and above) in private doctors

Boot Strapping Results on Moderation Analysis	Path Coefficient (β)Original (Age) 30-50yrs	Path Coefficient (β)Original (Age)50yrs and above	t-values (Age) 30-50 yrs	t-values (Age) 50 yrs and above	p-values (Age) 30-50 yrs	p-values (Age) 50 yrs and above
Emotional Intelligence→Life Satisfaction	0.280	0.320	2.060	4.538	0.040*	0.000*
Emotional Intelligence→Positive Affect	0.254	0.277	2.686	5.397	0.007*	0.000*
Emotional Intelligence→Negative Affect	-0.464	-0.495	7.828	12.433	0.000*	0.000*

Source: Primary Data;*denotes significant at 5% significance level

Table 4 shows the path coefficients of the moderating variable age(30-50years)& (50yrs and above) with t-values and significance values. The association between emotional intelligence and life satisfaction is found to be significant for age group 30-50 years($\beta=0.280, t=2.060, p< 0.05$). For the age group 50 and above the relationship between emotional intelligence and life satisfaction is also significant ($\beta=0.320, t=4.538, p< 0.05$) in private sector doctors. The relationship between emotional intelligence and positive affect is found to be significant for the age group 30-50 years ($\beta=0.254, t=2.686, p< 0.05$)

and for the age group 50 yrs and above the relationship is also significant with ($\beta=0.277, t=5.397, p<0.05$). The relationship is found to be significant between emotional intelligence and negative affect for the age group 30-50 yrs ($\beta=-0.464, t=7.828, p<0.05$) and also for the age group 50 yrs and above ($\beta=-0.495, t=12.433, p<0.05$). All the relationships between emotional intelligence and SWB constructs are found to be significant among private sector doctors. The effect of moderating variable age on the above significant relationships is evaluated with the help of three parameters namely, PLS MGA, Parametric test and Welch Satterwaith test.

Table 5: Moderation Analysis of Age (30-50 yrs vs. 50 yrs and above) in private doctors

Hypotheses	Moderation Analysis	Path Coefficients diff. (30-50 yrs – 50 yrs and above)	PLS MGA p-value (30-50 yrs vs. 50 yrs and above)	Parametric Test p-value (30-50 Yrs vs. 50 yrs and above)	Welch Satterwaith Test p-value (30-50 Yrs vs. 50 yrs and above)	Decision
H ₀₄	Emotional Intelligence → Life Satisfaction	-0.040	0.018*	0.021*	0.017*	Rejected
H ₀₅	Emotional Intelligence → Positive Affect	-0.023	0.864	0.816	0.832	Accepted
H ₀₆	Emotional Intelligence → Negative Affect	0.031	0.670	0.658	0.665	Accepted

Source: Primary Data; *denotes significant at 5% significance level

Table 5 represents the difference in the path coefficients ($\beta=-0.040$) of two age groups for the relationship of emotional intelligence and life satisfaction which is found to be significant for all the three parameters of moderation i.e. PLS MGA ($p=0.018, <0.05$), Parametric test ($p=0.021, <0.05$) and Welch Satterwaith test ($p=0.017, <0.05$). Therefore, H₀₄ is rejected. The difference in path coefficients for the age group 30-50 yrs and 50 yrs and above for the relationship between emotional intelligence and positive affect is $\beta=-0.023$, which is not significant to all the three measures of moderation analysis; PLS MGA ($p=0.864, >0.05$), Parametric test ($p=0.816, >0.05$) and Welch Satterwaith test ($p=0.832, >0.05$) thus accepting the null hypotheses H₀₅, which states that age does not moderate the relationship between emotional intelligence and positive affect. While testing the moderating effect of age on emotional intelligence and negative affect, the difference in path coefficients ($\beta=0.031$) for the age group 30-50 yrs and 50 yrs and above for this relationship is found to be insignificant for three parameters of moderation; PLS MGA ($p=0.670, >0.05$), Parametric test ($p=0.658, >0.05$) and Welch Satterwaith test ($p=0.665, >0.05$). Hence accepting the null hypotheses H₀₆ and it reveals that age does not moderate the relationship between emotional intelligence and negative affect. Therefore, age does not moderate the relationship between emotional intelligence and life satisfaction among private doctors. However, age does not moderate the relationship between emotional intelligence & positive affect and emotional intelligence and & negative affect.

Table 6: Path Coefficients for Marital Status (Single and Married) in government doctors

Boot Strapping Results on Moderation Analysis	Path Coefficient (β) Original (Marital Status) Single	Path Coefficient (β) Original (Marital Status) Married	t-values (Marital Status) Single	t-values (Marital Status) Married	p-values (Marital Status) Single	p-values (Marital Status) Married
Emotional Intelligence → Life Satisfaction	0.469	0.372	2.706	4.098	0.007*	0.000*
Emotional Intelligence → Positive Affect	0.504	0.501	2.325	0.749	0.008*	0.000*
Emotional Intelligence → Negative Affect	-0.538	0.174	2.649	6.166	0.020*	0.045*

Source: Primary Data; *denotes significant at 5% significance level

Table 6 constitutes the path coefficients of the moderating variable marital status (single and married) with t-values and significance values. The association between emotional intelligence and life satisfaction is found to be significant for single respondents ($\beta=0.469$, $t=2.706$, $p<0.05$). For married respondents the relationship between emotional intelligence and life satisfaction is also significant ($\beta=0.372$, $t=4.098$, $p<0.05$). The relationship between emotional intelligence and positive affect is found to be significant for single respondents ($\beta=0.504$, $t=2.325$, $p<0.05$) as well as for married respondents ($\beta=0.501$, $t=0.749$, $p<0.05$). The relationship between emotional intelligence and negative affect is also found to be significant for both singles ($\beta=-0.538$, $t=2.649$, $p<0.05$) as well as for married respondents ($\beta=0.174$, $t=6.166$, $p<0.05$).

Table 7: Moderation Analysis of Marital Status (Single vs. Married) in government doctors

Hypotheses	Moderation Analysis	Path Coefficients diff. (Single – Married)	PLS MGA p-value (Single vs. Married)	Parametric Test p-value (Single vs. Married)	Welch Satterwaith Test p-value (Single vs. Married)	Decision
H ₀₇	Emotional Intelligence → Life Satisfaction	0.097	0.522	0.671	0.619	Accepted
H ₀₈	Emotional Intelligence → Positive Affect	0.003	0.045	0.013*	0.017*	Rejected
H ₀₉	Emotional Intelligence → Negative Affect	-0.712	0.009	0.026*	0.034*	Rejected

Source: Primary Data; *denotes significant at 5% significance level

Table 7 represents the difference in the path coefficients ($\beta=0.097$) of marital status for the relationship of emotional intelligence and life satisfaction which is found to be insignificant for all the three parameters of moderation i.e. PLS MGA ($p=0.522$, >0.05), Parametric test ($p=0.671$, >0.05) and Welch Satterwaith test ($p=0.619$, >0.05). Hence the hypotheses sought to ascertain that the moderating role of marital status on the relationship between emotional intelligence and life satisfaction is insignificant. Therefore, H₀₇ is accepted. The difference in path coefficients for the single and married respondents for the relationship between emotional intelligence and positive affect is ($\beta=0.003$), which is significant to all the three measures of moderation analysis; PLS MGA ($p=0.045$, <0.05) Parametric test ($p=0.013$, <0.05) and Welch Satterwaith test ($p=0.017$, <0.05) thus rejecting the null hypotheses H₀₈. Hence it is revealed from the results that marital status does moderates the relationship between emotional intelligence and positive affect. While testing the moderating effect of marital status on emotional intelligence and negative affect, the difference in path coefficients ($\beta=-0.712$) for both single and married respondents for this relationship is found to be significant for three parameters of moderation; PLS MGA ($p=0.009$, <0.05), Parametric test ($p=0.026$, <0.05) and Welch Satterwaith test ($p=0.034$, <0.05). Hence rejecting the null hypotheses H₀₉ which reveals that marital status does moderates the relationship between emotional intelligence and negative affect among government sector doctors.

Table 8: Path Coefficients for Marital Status (Single and Married) in private doctors

Boot Strapping Results on Moderation Analysis	Path Coefficient (β) Original (Marital Status) Single	Path Coefficient (β) Original (Marital Status) Married	t-values (Marital Status) Single	t-values (Marital Status) Married	p-values (Marital Status) Single	p-values (Marital Status) Married
Emotional Intelligence → Life Satisfaction	0.214	0.271	1.408	5.315	0.016*	0.000*
Emotional Intelligence → Positive Affect	0.325	0.415	3.852	4.517	0.000*	0.000*
Emotional Intelligence → Negative Affect	-0.477	-0.510	6.165	12.861	0.000*	0.000*

Source: Primary Data; *denotes significant at 5% significance level

Table 8 constitutes the path coefficients of the moderating variable marital status (single and married) with their t-values and significance values in private sector doctors. The association between emotional intelligence and life satisfaction is found to be significant for single respondents ($\beta=0.214$, $t=1.408$, $p<0.05$). For married respondents the relationship between emotional intelligence and life satisfaction of private sector doctors is also significant ($\beta=0.271$, $t=5.315$, $p<0.05$). The relationship between emotional intelligence and positive affect on private sector doctors is found to be significant for single respondents ($\beta=0.325$, $t=3.852$, $p<0.05$) as well as for married respondents ($\beta=0.415$, $t=4.517$, $p<0.05$). The relationship is found to be significant between emotional intelligence and negative affect for single respondents ($\beta=-0.477$, $t=6.165$, $p<0.05$) and for married respondents ($\beta=-0.510$, $t=12.861$, $p<0.05$).

Table 9: Moderation Analysis of Marital Status (Single vs. Married) in private doctors

Hypotheses	Moderation Analysis	Path Coefficients diff. (Single – Married)	PLS MGA p-value (Single vs. Married)	Parametric Test p-value (Single vs. Married)	Welch Satterwaith Test p-value (Single vs. Married)	Decision
H ₀₁₀	Emotional Intelligence → Life Satisfaction	-0.045	0.048	0.046*	0.042*	Rejected
H ₀₁₁	Emotional Intelligence → Positive Affect	0.187	0.040	0.041*	0.038*	Rejected
H ₀₁₂	Emotional Intelligence → Negative Affect	-0.033	0.670	0.699	0.716	Accepted

Source: Primary Data; *denotes significant at 5% significance level

Table 9 represents the difference in the path coefficients ($\beta=-0.045$) of marital status for the relationship of emotional intelligence and life satisfaction, which is found to be significant for all the three parameters of moderation i.e. PLS MGA ($p=0.048$, <0.05), Parametric test ($p=0.046$, <0.05) and Welch Satterwaith test ($p=0.042$, <0.05). Therefore, H₀₁₀ is rejected. The difference in path coefficients of single and married respondents for the relationship between emotional intelligence and positive affect is $\beta=0.187$, which is also significant to all the three measures of moderation analysis; PLS MGA ($p=0.040$, <0.05), Parametric test ($p=0.041$, <0.05) and Welch Satterwaith test ($p=0.038$, <0.05) thus rejecting the null hypotheses H₀₁₁. Hence it is revealed from the results that marital status moderates the relationship between emotional intelligence and life satisfaction & emotional intelligence and positive affect among private sector doctors. While testing the moderating effect of marital status on the relationship between emotional intelligence and negative affect, the difference in path coefficients ($\beta=-0.033$) for both single and married respondents for this relationship is found to be insignificant for all three parameters of moderation; PLS MGA ($p=0.670$, >0.05), Parametric test ($p=0.699$, >0.05) and Welch Satterwaith test ($p=0.716$, >0.05). Hence accepting the null hypothesis H₀₁₂ which proves that marital status does not moderate the relationship between emotional intelligence and negative affect among private sector doctors.

Discussion

The present study investigated the moderating effect of age and marital status on the relationship between emotional intelligence and subjective well-being among government and private doctors working in 8 districts of Punjab, India. Emotional intelligence dimensions i.e. perception of emotion, managing own emotion, managing other's emotion and utilizing emotion relates to emotional intelligence as a second-order construct, which is used to find the relationship with subjective well-being dimensions i.e. life satisfaction, positive affect and negative affect. Moderating effects of age and marital status on the relationship between emotional intelligence and subjective well-being of doctors are determined by using multi-group analysis in PLS SEM, where age does not moderate the relationship between EI and LS, PA and NA in government doctors. It can be said that age as a moderator between EI and SWB facilitate a doctor to build the capacity for emotional regulation and/or ability to generate adaptive responses to positive events and combating with negative ones. Within Private sector doctors, age moderates the relationship between EI and LS. On the contrary influence of EI on PA and NA is not moderated by age among private doctors. This could be due to the fact that perception and managing of emotions among doctors leads to adjustment with positive and negative events in life as a whole.

Among government sector doctors marital status does not moderate the relationship between EI and LS but it does moderates the relationship of EI with PA and NA. However in private sector doctors, marital status moderates the relationship between EI and LS & PA. To sum up, it can be said that the role of marital status as a moderator exceeds the chances of an individual's perception, management and utilisation of emotions which increases happiness, positive state of mind and optimism finally leading to the path of subjective well-being

- **Theoretical Implications**

The study has examined the moderating effect of age and marital status on the relation between emotional intelligence and subjective well being. The findings of the study will help the future researchers to carry out the moderating effect of other demographic variables like gender, working experience and ethnicity on the relation between EI and SWB. The study will also help the healthcare institutions and the governing bodies to establish adequate emotional intelligence development programs at the time of doctors' job induction. Emotional intelligence should be taught to doctors in the guidance of professional freelancers and psychologists. Interactive one to one sessions, problem solving group activities, simulation training, soft skills training, self management skills and maintaining healthy doctor-patient relationship are few behavior management techniques which can foster emotional quotient among medical practitioners.

- **Limitations and Future Research**

The study highlights the effect of age and marital status as moderators on the relationship between emotional intelligence and subjective well-being of doctors in government and private healthcare sector of Punjab. This research model can be tested including the factors which restrict doctors to inculcate emotional intelligence competencies like personal, professional and family factors etc. could become an area of interest for future researchers. Moderators like age and marital status in the present study are used to examine their effect on emotional intelligence and subjective well-being relationship; mediators like mindfulness, job satisfaction, gratitude, and emotional intensity can also be used in the future researches.

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TRANSFORMATIVE CHANGES IN ACCOUNTING: THE EVOLVING LANDSCAPE OF AI

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ABSTRACT

The integration of Artificial Intelligence (AI) into the field of accounting marks a watershed moment in the profession's evolution. This research paper offers a comprehensive exploration of the myriad opportunities and challenges that accompany this transformative integration. In a rapidly evolving technological landscape, AI emerges as a powerful force reshaping traditional accounting practices. The objective of this research is to provide a nuanced understanding of how AI is transforming the accounting profession and the implications it holds for accountants and organizations. This paper employs a mixed-methods approach, combining both qualitative and quantitative research methodologies. Through surveys and structured interviews with accounting professionals, organizations, and AI experts, the quantitative arm of the research aims to uncover patterns and insights into the prevalence and impact of AI in accounting practices. Concurrently, qualitative case studies of organizations that have implemented AI in accounting processes provide a deeper understanding of the challenges and opportunities through real-world scenarios. The opportunities presented by AI in accounting are vast and transformative. Enhanced efficiency and accuracy, a redefined role for accountants in strategic decision-making, and the ability to provide value-added services are among the key benefits. AI enables the automation of routine tasks, freeing up time for accountants to focus on higher-value activities. The potential for accountants to evolve into strategic business partners, offering advisory services and contributing to strategic planning, represents a paradigm shift in the profession. However, this integration is not without its challenges. Job displacement, ethical considerations, the upfront cost of implementation, and the skill gap pose significant hurdles. The fear of job displacement necessitates a proactive approach to upskilling, ensuring accountants are equipped for more analytical functions. Ethical concerns revolve around data privacy and security, demanding a delicate balance between efficiency gains and ethical AI practices. As the accounting profession stands at the intersection of promise and complexity, this research paper concludes with insights into the future of AI in accounting. A harmonious collaboration between human expertise and AI capabilities is envisioned, requiring a proactive approach from accountants and organizations. Continuous learning, ethical frameworks, strategic evaluations of implementation costs, and a culture of adaptability are suggested as crucial elements for navigating the uncharted terrain of AI in accounting. Ultimately, this research contributes to a deeper understanding of the transformative potential of AI in accounting, guiding practitioners and researchers towards a more informed and strategic integration of this powerful technology.

KEYWORDS: Artificial Intelligence, Strategic Decision-Making, Powerful Technology, Ethical Frameworks.

Introduction

In the dynamic and swiftly evolving realm of technology, the advent of Artificial Intelligence (AI) has heralded a transformative era across diverse industries. Amid these revolutionary shifts, the discipline of accounting stands witness to profound transformations through the seamless integration of AI. This research endeavor seeks to delve into the multifaceted landscape of opportunities and

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challenges that accompany the infusion of AI into the realm of accounting. The overarching objective is to unravel the intricate layers of how AI is orchestrating a paradigm shift within the accounting profession, and, in turn, delineate the far-reaching implications that resonate for both individual accountants and the organizations they serve. The contemporary technological milieu is marked by an unprecedented pace of innovation, with AI at its epicenter. As AI technologies advance, their influence on various industries becomes increasingly pronounced. Among the domains undergoing a metamorphic evolution, the field of accounting emerges as a focal point of change, poised on the brink of a new era defined by intelligent automation and data-driven insights.

This research paper embarks on a comprehensive exploration of the symbiotic relationship unfolding between AI and accounting, dissecting the myriad opportunities and challenges entwined within this transformative union. By undertaking this scholarly endeavor, the goal is to furnish readers with a nuanced and profound understanding of the nuanced ways in which AI is reshaping the very fabric of the accounting profession. Beyond the individual accountant, the research also endeavors to unravel the broader implications that reverberate across organizational landscapes, discerning the ripple effects of AI integration within the intricate dynamics of modern-day enterprises. In essence, this research paper is positioned as a beacon illuminating the uncharted territories of AI in accounting. By navigating through the intricacies of this symbiotic relationship, the intention is to contribute not only to the academic discourse surrounding this transformative force but also to offer practical insights that can inform decision-making within the realms of accounting practice and organizational strategy. The subsequent sections will unravel the specific research objectives, delve into the chosen methodology, and expound upon the opportunities and challenges that unfold as AI takes center stage in the realm of accounting.

Research Objectives

The primary objectives of this research paper are:

- To examine the role of AI in enhancing efficiency and accuracy in accounting processes.
- To identify the opportunities AI presents for accountants in terms of strategic decision-making and value-added services.
- To analyze the challenges and potential drawbacks of incorporating AI in accounting practices.
- To assess the impact of AI on the role of accountants and the need for new skill sets in the profession.

Research Methodology

The research methodology chosen for this study is deliberately designed to be comprehensive, employing a mixed-methods approach that synergistically integrates both qualitative and quantitative research methods. This strategic combination aims to offer a nuanced and holistic perspective on the intricate interplay between Artificial Intelligence (AI) and accounting, ensuring a robust and multifaceted understanding of the subject matter.

AI in Accounting as Opportunity

The infusion of Artificial Intelligence (AI) into the domain of accounting unfurls a myriad of opportunities, heralding a transformative era for both individual accountants and the organizations they serve. This section comprehensively explores these opportunities, highlighting the multifaceted benefits that AI integration brings to the forefront.

- **Enhanced Efficiency and Accuracy**

AI in accounting stands as a beacon of efficiency, offering a transformative advantage by automating routine tasks that have traditionally consumed significant time and resources. Processes such as data entry, reconciliation, and financial analysis are streamlined through the implementation of AI-driven software. The unparalleled processing speeds of AI algorithms not only alleviate the burden of time-consuming tasks but also significantly diminish the likelihood of errors, thereby elevating the overall accuracy of financial processes.

- **Strategic Decision-Making**

Central to the opportunities presented by AI in accounting is its capacity to liberate accountants from the shackles of mundane tasks, enabling a heightened focus on strategic decision-making. By automating routine and repetitive processes, AI tools empower accountants to allocate their time and cognitive resources towards more complex, strategic endeavors. Through the generation of insights

derived from AI algorithms, accountants gain an enhanced ability to analyze financial data efficiently. This newfound capability becomes instrumental in contributing valuable inputs for strategic planning, risk management, and the optimal allocation of organizational resources.

- **Value-Added Services**

The integration of AI propels accountants beyond their traditional compliance roles, unlocking avenues for the provision of value-added services. With the efficiency gains realized through AI automation, accountants find themselves endowed with additional time and resources. This surplus capacity allows them to transition towards roles that involve offering advisory services, engaging in comprehensive financial planning, and providing strategic guidance to clients. Consequently, accountants assume the mantle of strategic business partners, leveraging their expertise in tandem with AI capabilities to deliver holistic and value-driven services.

- **Continuous Learning and Skill Development**

The integration of AI necessitates a paradigm shift in the skill sets of accountants. The dynamic nature of AI technologies demands continuous learning and skill development to harness the full potential of these tools. This presents an opportunity for accountants to embark on a journey of lifelong learning, staying abreast of emerging technologies, and adapting their skill sets to align with the evolving needs of the profession. Organizations, in turn, can facilitate this process by investing in training programs and fostering a culture of continuous professional development.

- **Enhanced Data Security and Compliance**

AI in accounting introduces sophisticated tools for data security and compliance management. Machine learning algorithms can be employed to detect anomalies in financial data, reducing the risks associated with fraudulent activities. Additionally, AI technologies contribute to ensuring compliance with regulatory requirements by automating the monitoring and reporting of financial transactions. This not only enhances the overall security of financial data but also streamlines compliance processes, mitigating risks and bolstering the reputation of organizations.

In short, the integration of AI in accounting transcends the realm of mere automation; it catalyzes a paradigm shift in roles, unlocking a spectrum of opportunities for accountants to evolve into strategic partners, value-driven service providers, and lifelong learners in a landscape augmented by AI technologies. As organizations embrace these opportunities, they stand poised to optimize their financial processes, elevate decision-making capabilities, and fortify their positions in an era defined by the symbiotic relationship between human expertise and artificial intelligence.

AI in Accounting as Challenge

As the realm of accounting undergoes a revolutionary transformation through the integration of Artificial Intelligence (AI), a tapestry of challenges and concerns intertwines with the promising opportunities. This section delves into the intricacies of these challenges, recognizing the need for a nuanced understanding of the hurdles that accompany the adoption of AI in accounting practices.

- **Job Displacement and Skill Transition**

Foremost among the challenges is the specter of job displacement, casting a shadow over routine, entry-level accounting roles. As AI takes the reins of automating mundane tasks, there exists a palpable risk that certain traditional accounting functions may diminish. This necessitates a paradigm shift for accountants, urging them to transcend their traditional roles and embrace upskilling initiatives. The challenge lies not only in mitigating job displacement concerns but also in navigating the transition towards more complex, analytical functions where human expertise is indispensable.

- **Ethical Considerations and Data Security**

The integration of AI in accounting ushers in a plethora of ethical considerations, particularly revolving around data privacy and security. Accountants are entrusted with safeguarding sensitive financial information, and the use of AI tools raises questions about the ethical implications of data handling. Striking a delicate balance between harnessing the power of AI for efficiency gains and upholding stringent data privacy standards becomes a paramount challenge. Accountants must grapple with the responsibility of ensuring the ethical use of AI tools, addressing concerns related to bias in algorithms, and fortifying the robustness of cybersecurity measures.

- **Cost of Implementation**

While the promises of AI in accounting are abundant, the implementation of these transformative technologies comes at a considerable cost. This financial barrier poses a notable challenge, particularly for smaller firms or organizations with limited resources. The upfront investment in AI technologies, including software, hardware, and training, can be substantial. Consequently, organizations must carefully evaluate the return on investment and weigh the long-term benefits against the immediate costs, creating a strategic framework for the judicious implementation of AI in accounting practices.

- **Skill Gap and Continuous Learning**

The integration of AI necessitates a seismic shift in the skill sets demanded within the accounting profession. Traditional accounting roles require augmentation with proficiency in data analysis, machine learning, and AI programming. The emergence of a skill gap poses a dual challenge – accountants must proactively acquire these new skills to effectively leverage AI technologies, and organizations must invest in comprehensive training programs to facilitate this skill transition. The imperative for continuous learning becomes a cornerstone, underscoring the need for lifelong learning initiatives to keep pace with the rapidly evolving landscape of AI in accounting.

- **Resistance to Change and Cultural Shift**

The infusion of AI in accounting processes may encounter resistance from within organizations, stemming from a resistance to change among staff. Overcoming this resistance requires not only addressing concerns about job security but also fostering a cultural shift that embraces the transformative potential of AI. Organizations must invest in change management strategies, emphasizing the collaborative nature of human-AI partnerships and positioning AI as an augmentative tool that enhances rather than replaces human expertise.

- **Data Quality and Interpretability**

The reliance on AI for data analysis introduces challenges related to data quality and interpretability. AI algorithms heavily depend on high-quality data for accurate insights. Ensuring the integrity, accuracy, and completeness of data becomes imperative. Additionally, the interpretability of AI-generated results poses a challenge, requiring accountants to understand and explain complex algorithmic outputs to stakeholders, regulators, and clients.

Finally, the integration of AI in accounting, while promising a paradigm shift towards efficiency and strategic decision-making, is not devoid of formidable challenges. Addressing job displacement concerns, navigating ethical considerations, managing the cost of implementation, bridging skill gaps, overcoming resistance to change, and ensuring the quality and interpretability of AI-generated insights are critical facets that demand meticulous attention. Organizations and accounting professionals, armed with a comprehensive understanding of these challenges, can navigate the AI landscape strategically, fostering a symbiotic relationship between human expertise and artificial intelligence in the dynamic world of accounting.

Conclusion

In drawing the curtains on this exploration into the integration of Artificial Intelligence (AI) in accounting, the tapestry woven reveals a dynamic landscape rich with both opportunities and challenges. The potential for transformative change, marked by enhanced efficiency, strategic decision-making, and the delivery of value-added services, beckons the accounting profession into a new era of possibilities. Yet, these prospects are not without their shadows, and the challenges that accompany the integration of AI demand thoughtful consideration and strategic planning.

A Glimpse into a Future of Possibilities- The opportunities presented by AI in accounting are indeed profound, promising to elevate the profession to unprecedented heights. The realization of enhanced efficiency through the automation of routine tasks stands as a testament to the transformative potential of AI. As algorithms seamlessly handle data entry, reconciliation, and financial analysis, accountants are afforded the luxury of time and resources, allowing them to focus on more intricate aspects of their roles.

Strategic decision-making, once encumbered by mundane tasks, emerges as a focal point of opportunity. With AI-generated insights contributing to efficient financial data analysis, accountants are positioned as strategic decision-makers, guiding organizations through the intricacies of risk

management, resource allocation, and strategic planning. The shift from traditional compliance roles to providers of value-added services marks another horizon of opportunity. As AI streamlines routine processes, accountants find themselves liberated to offer advisory services, engage in comprehensive financial planning, and provide strategic guidance to clients. This evolution transforms accountants into strategic business partners, augmenting their roles in organizational success.

The continuous evolution of AI technologies promises further opportunities, signaling a need for accountants to embark on a journey of continuous learning and skill development. This not only ensures that accountants remain adept at harnessing the full potential of AI tools but also positions them as architects of their professional development in a landscape where adaptability is paramount.

Navigating the Complexities of Change- Amidst the promise of opportunities, challenges loom on the horizon, demanding meticulous navigation. Job displacement emerges as a formidable concern, urging the profession to grapple with the realities of evolving roles and the imperative to upskill for more complex analytical functions. The specter of job displacement necessitates a proactive approach, fostering a culture of lifelong learning and adaptability. Ethical considerations weave a tapestry of complexity as the profession grapples with the responsible use of AI tools and the safeguarding of sensitive financial information. A delicate balance between efficiency gains and stringent data privacy standards must be struck, underscoring the importance of ethical frameworks within the integration of AI in accounting.

The financial barrier posed by the cost of implementation introduces a pragmatic challenge, particularly for smaller firms or resource-constrained organizations. A strategic evaluation of the return on investment becomes paramount, requiring organizations to weigh immediate costs against long-term benefits judiciously. The integration of AI necessitates a profound shift in skill sets, ushering in a new era where proficiency in data analysis, machine learning, and AI programming becomes indispensable. Bridging the skill gap demands a strategic approach to continuous learning and professional development, ensuring that accountants are well-equipped to navigate the evolving landscape.

Future Readings and Suggestions: Navigating the Uncharted Terrain

As we stand at the cusp of the AI revolution in accounting, future readings and research should delve deeper into the evolving dynamics. Explorations into the psychological and organizational aspects of job displacement, ethical considerations in AI algorithms, and innovative strategies for mitigating the cost of implementation should form focal points for future research endeavors. Continuous research into the evolving skill sets demanded by the integration of AI will remain pivotal. Insights into effective training programs, the impact of AI on organizational culture, and strategies for fostering a seamless collaboration between human expertise and AI capabilities will be crucial for the profession's future.

Suggestions for practitioners and organizations emerge organically from the challenges and opportunities uncovered. A proactive approach to upskilling, a commitment to ethical AI practices, a strategic evaluation of implementation costs, and a focus on creating a culture of adaptability and continuous learning will be instrumental in navigating the uncharted terrain of AI in accounting.

In summation, the future of accounting is envisioned as a harmonious collaboration between human acumen and AI capabilities. As the technology continues its relentless march forward, the accounting profession must not merely adapt but lead the charge in shaping this future. Through a proactive and strategic approach, accountants and organizations can harness the transformative potential of AI, redefining their roles and contributing to the emergence of a more efficient, accurate, and value-driven accounting profession.

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ROLE OF PAYTM TO BUILD A CASHLESS ECONOMY IN INDIA

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Prof. (Dr.) Jhumoor Biswas**

ABSTRACT

Paytm, one of India's leading mobile payment platforms, has played a significant role in the country's transition towards a cashless economy. The Paytm started as a mobile wallet application and it has grown bigger with time in terms of digital payment offerings like QR code payments, Paytm banking services, UPI transactions and many more. The advent of Unified Payments Interface (UPI) has further bolstered India's cashless economy vision and as per RBI data there is a 428% surge in UPI transaction volume from July 2020 to July 2023. The Paytm application, being one of the biggest digital payment applications in India by market share, played a significant role in striving forward to a cashless economy. My paper aims to analyse how the Paytm application usage has surged over the years in India and what strategic actions had contributed to this journey while India moved towards the cashless economy.

KEYWORDS: Digital Payment Application, Cashless Economy, Paytm, UPI, Strategy.

Introduction

There are revolutionary changes in the Digital Payments landscape in India, especially in the last 10 years. With a key focus on the vision of Financial Inclusion for all the citizens, the Indian government has introduced many new policies and guidelines over the years which created a favourable atmosphere for the innovations, healthy competitions, and technological advancements for the modernization and proliferation of the Digital Payment system in India. The last decade has witnessed a meteoritic growth of digital payment platforms offering array of services and giving the citizens the freedom and convenience to choose their preferred mode of transaction while making payments or receiving money from others. The number of digital transactions had significantly increased during this time and the cash transactions had gone down to a bare minimum. As per Reserve Bank of India (2023), in FY 2022-23, the overall digital transaction volume has reached to almost 114 billion in India. The Digital Payment Applications emerged out at this time, are the true enablers of Cashless Economy in India. With the surge in the usage of the Digital Payments Applications, both the financial inclusion and cashless economy grew in this time period significantly. In this fast evolving landscape of Digital Payments, Paytm application has emerged out as one of the pioneering and market leaders in India. Established in 2010 by Vijay Shekhar Sharma, Paytm is one of the oldest Digital Payments applications in India. It has lived through all the major digital payment related regulations and guidelines issued by the

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RBI from time to time in accordance with the Payment and Settlement Systems Act, 2007 (PSS Act). It had a humble beginning as a mobile recharge and utility bill payment platform. But over the years, it has grown into a comprehensive financial ecosystem, offering a plethora of services, including Paytm wallet, Paytm bank, Paytm QR service, UPI payments, Paytm credit card, Insurance, paytm first games and many more.

The purpose of this research is to retrospect and analyse what key business decisions and strategic actions Paytm had taken over the years and how it impacted their business growth and India's journey towards the cashless economy. Also as a part of this research, we would like to analyse what were the external factors, policies and guidelines from RBI that impacted the effectiveness of those key strategic actions. And then we will conclude by recommending if there is any need of further studies which can give new light in this domain.

Literature Review

Komirisetty & Simha (2018) had found out that the surge in Paytm usage in the early years of Digital Payments era was majorly attributed to some of their key strengths like - first mover advantage in that space, securing funds from stakeholders across the globe, tie-ups with merchants and other businesses for business expansion and promotions etc.

Tang (2022) has plotted the Paytm timeline with key business expansions and diversifications to suggest how they had planned their entire journey before they strove for their most coveted IPO in 2021.

Reserve Bank of India (2023) has shared payment transaction data from 2013 to 2023 which indicated that digital payment transactions has grown significantly in the last 7 years and from FY 2021-22, digital payments has been contributing to 99% of total payments in India.

Bank for International Settlements (2023) data has also indicated that from 2016 onwards, the cash transactions in India have gone down drastically.

Reserve Bank of India (2023) had provided the yearly UPI transaction volume data of India from FY 2016-17 and it indicated that the UPI transaction volume has been increasing since the inception of UPI in 2016.

Rai (2023) referred and FINSHOTS (2020) analysed and indicated how the UPI transaction volume had grown over the years from 2017 for different Digital Payments applications and it showed that Paytm is getting behind from the other leading applications like PhonePe, Google Pay etc.

Research Gap and Objective of the Study

There are existing studies on the SWOT analysis of Paytm and the usage of Digital Payment applications in generic. But more studies need to be made on the Digital Payment applications in order to understand how they had contributed individually to the growth of Cashless Economy in India. What strategic actions they had taken over the years and how the external factors, events and RBI guidelines had impacted the effectiveness of those strategic decisions. The objective of this study is to analyse:

- The growth of Paytm and how it contributed to the cashless economy in India
- The influence of external factors, events and RBI guidelines on the strategic decisions made by Paytm over the years
- To recommend on what future research studies we need to do to get more insights in this domain

Research Methodology

Research methodology or research design is an important aspect of every research which governs what type of data to be collected and from what type of sources. Based on the nature of the research and the purpose of the study, the research design and methodology differs. This is an important step because it helps understand how the research was executed and how the data were analysed to conclude the outcome of the research.

This research is a Case Study based research which is exploratory in nature. The intent was to find out more insights on how Paytm's Digital Payment application was impacted by different external factors from time to time and how individually the Paytm application has contributed to the cashless economy.

Data Collection

Secondary data are collected from different sources like newspaper, magazine articles and blog post to understand the Paytm’s business journey and market share since it was incepted in 2010. The Payment system indicator data are collected from the Reserve bank of India (RBI) and Bank for International Settlement (BIS) databases.

Data Analysis

The digital transaction related yearly data, collected from the RBI and BIS databases were in MS-Excel tabular format. Those data are sliced and diced to find out the required payment system indicators (Digital / Cash transaction) data to evaluate the growth of cashless economy in India over the years. Also, these data are analysed to find out the market trends in digital transaction. Paytm’s market share data on digital transactions over the years are cross referenced in this aspect to do a comparative study on how much Paytm had contributed in the cashless economy.

To understand the impact of external events on Paytm’s strategic business expansion or diversification, the collected data on Paytm’s business journey was represented on a Journey Map with a timeline view. Then all the external factors and Paytm’s growth information are mapped onto it. This layered data view of Paytm’s journey map is analysed to understand the impact of external factors on Paytm’s business over the years.

Findings and Analysis

- **Analysis of Paytm’s contribution to the Cashless Economy in India**

Based on the data available from the RBI database, it was found that by FY 2015-16, the digital transaction already contributed to 84% of the total transaction volume in India. And the volume of digital transaction has been growing steadily since FY 2016-17. Starting from FY 2021-22, the digital transaction had reached its peak when it started contributing to 99% of total transaction volume in India.

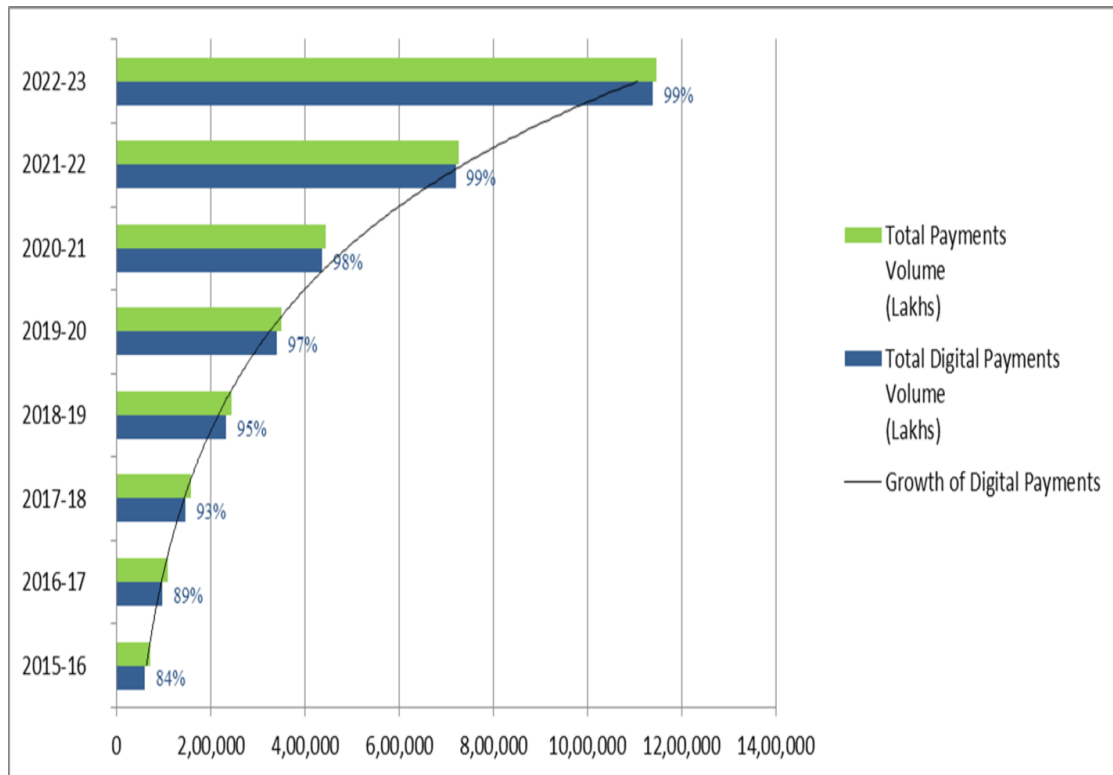


Fig. 1: Digital Payments contribution to total payments volume in India per year
 The Digital Payments transaction volume has been on the surge since FY 2015-16.

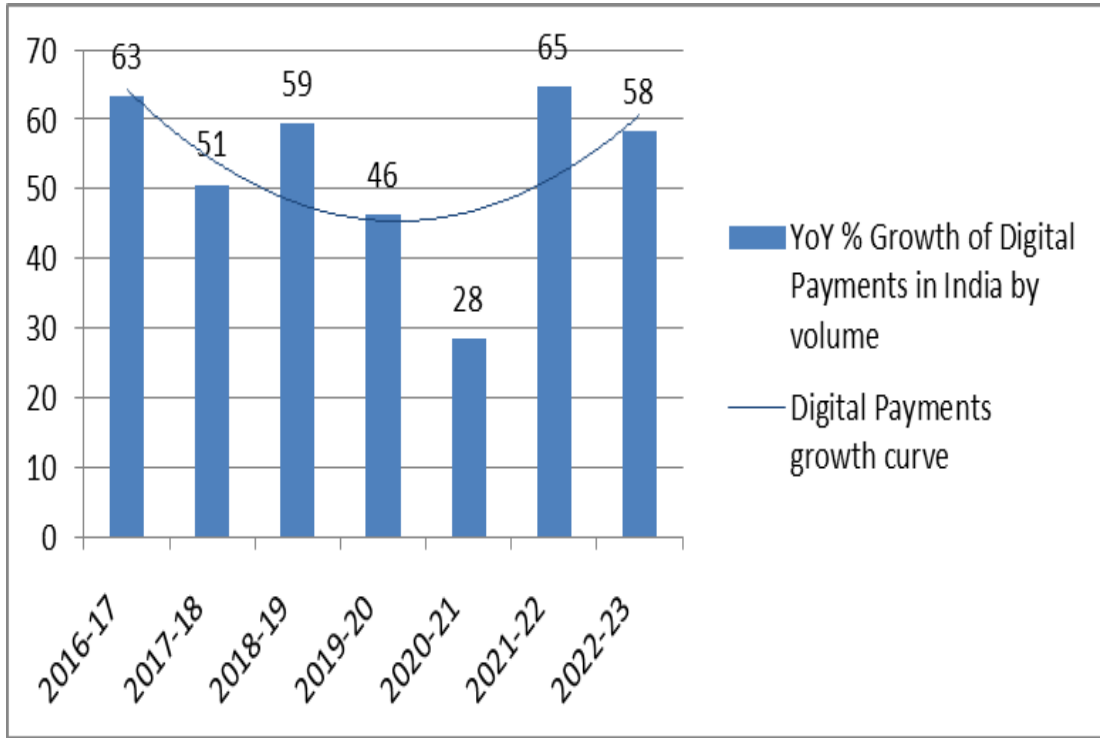


Fig 2 : YoY Growth rate of Digital Payments in India by volume

The data shows that the growth rate of digital transaction volume varies from year to year. In FY 2020-21, there was a dip in the digital transaction volume growth rate. It is also noted that - the overall transaction volume growth rate was restricted that year and in spite of low growth rate, the digital transaction volume contributed to 98% of total transaction volume in FY 2020-21.

Bank for International Settlements (2023) data shows that during this time period, the cash transaction volume has gone down drastically.

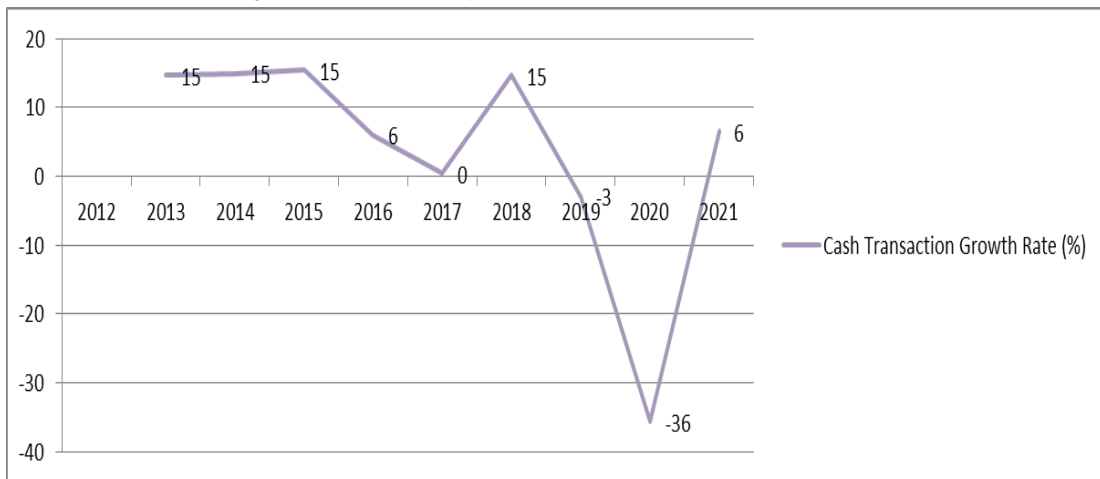


Fig. 3: Cash Transaction Volume Growth

The data shows that from 2019 to 2020, the cash transaction had negative growth rates.

Reserve Bank of India (2023) data shows that out of several digital transaction methods, the UPI transactions have been gaining popularity over the years since it started in FY 2016-17.

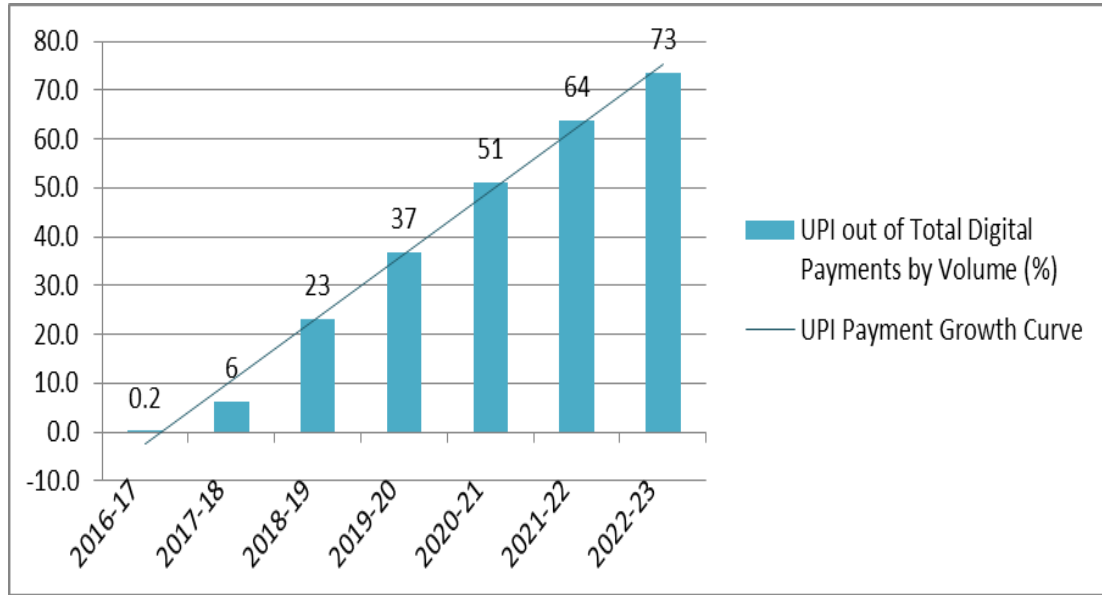


Fig 4: YoY UPI Payments Contribution in Cashless Economy in India by volume

The above graph shows that the UPI transaction is the most preferred way of doing digital transaction in India. In FY 2022-23, the UPI transactions cover 73% of total digital transactions in India. Since, UPI has become the most dominant factor for the Cashless Economy in India, this research analysed Paytm application’s contribution to the UPI payments landscape over the years.

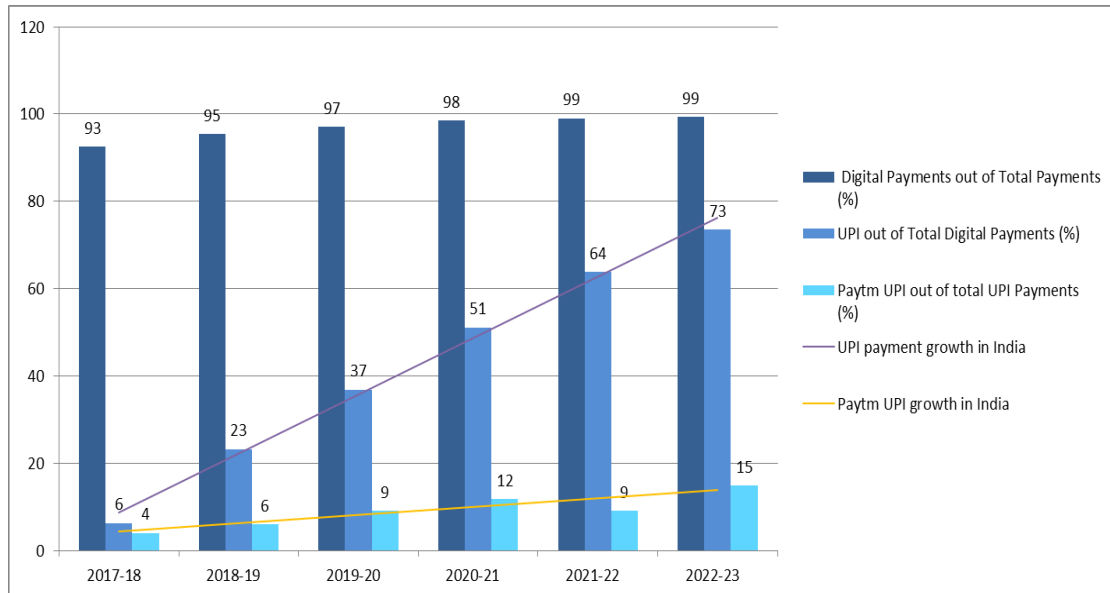


Fig 5: Paytm UPI transaction contribution to total UPI transaction volume

Based on Rai (2023) and FINSHOTS (2020), the above graph gives a comparative view of Paytm application’s share in total UPI transaction volume in India over the years. It is noted that, Paytm’s UPI transaction contribution is not growing as rapidly as the total UPI transaction contribution to digital payments in India. In FY 2022-23, while the total UPI transaction volume constitutes 73% of total digital transactions in India, Paytm had contributed to almost 15% of the total UPI transactions. That means, by the UPI mode Paytm had contributed to 10.9% of the total Cashless Economy in that year.

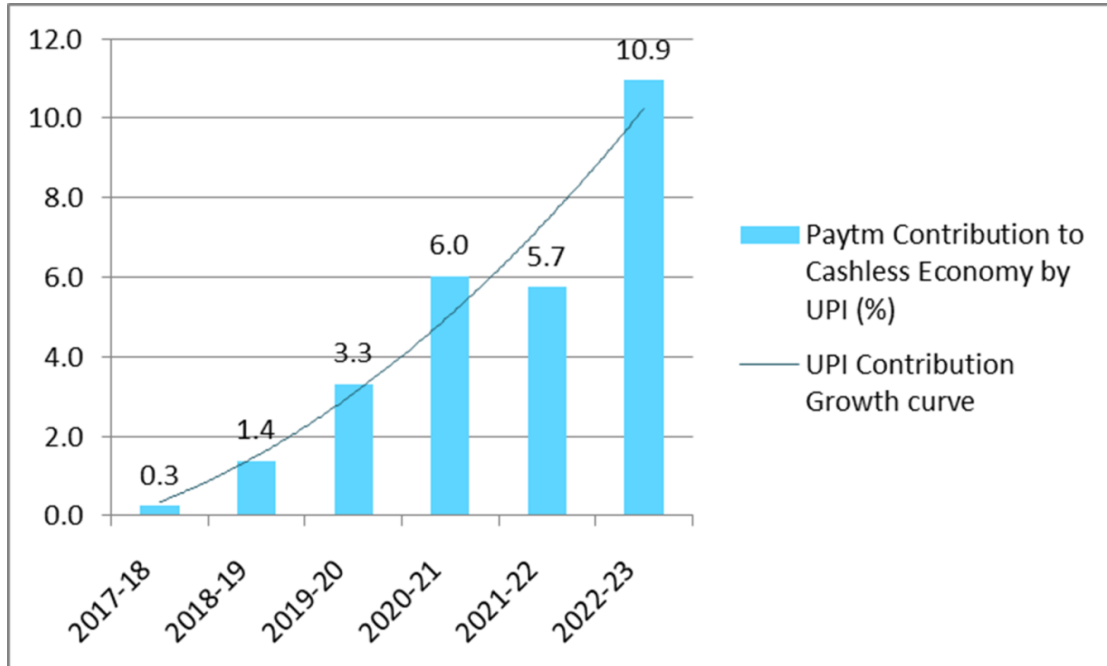


Fig. 6: Paytm Contribution to Cashless Economy by UPI

Derived from the available data as mentioned earlier, the above graph shows Paytm’s contribution to the Cashless Economy in India by UPI transaction volume. It is noted that in FY 2021-22, Paytm’s UPI transaction market share was stumbled and took a dip but the growth was recovered again in the very next year.

• **Analysis of Paytm Strategies and the impact of External Factors on them**

Paytm is one of the oldest Digital Payment applications in the Indian market. Over a short period of time they had expanded and diversified their business by means of launching new products and services, collaborating with other businesses and securing funds from stakeholders across the globe.

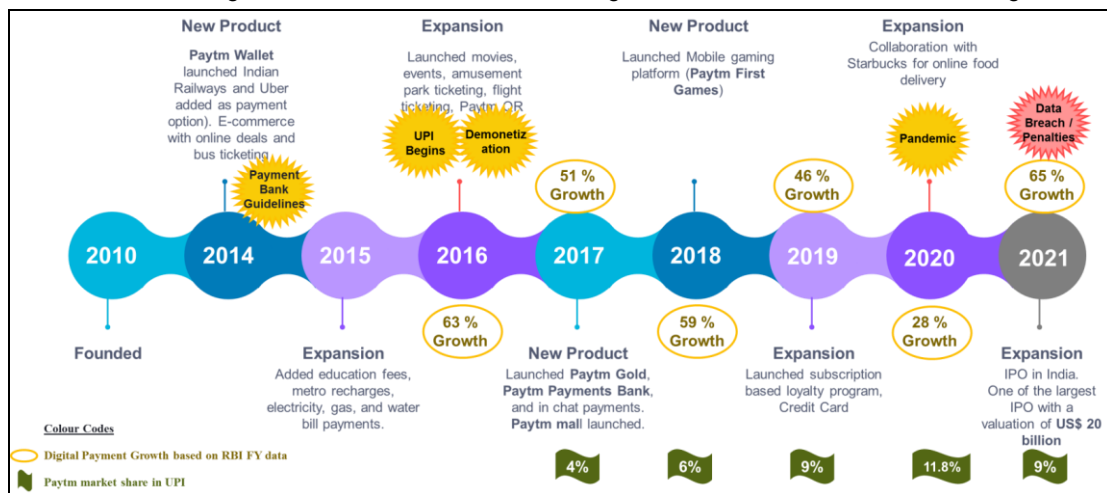


Fig. 7: Paytm Journey Map with Timeline and multi-layered Information

The above diagram, created based on Paytm timeline from Tang (2022) is a depiction of how Paytm has strategized their growth over the years and how those strategic actions were influenced or impacted by different events that took place in that time period. This timeline view shows that there is a

pattern in how Paytm planned their business growth over the years. Strategically, the new product launch or business diversification happened alternatively with a gap period for business expansion. And with business diversification like beginning of Paytm Payments bank and mobile gaming business, Paytm has been focusing for consolidation and business expansions. That makes a lot of business sense. But it is curious to analyse what were the external factors that impacted those key strategic decisions and actions.

The diagram shows that from 2016 onwards there was a sharp adoption for digital payments as cashless economy started to grow steadily. However in 2020, there is a dip in growth and then again it started to surge from 2021. This growth curve can be explained if we consider some important events that took place in that same time period. The inception of UPI and demonetization helped surge the digital payments from 2016 onwards and the pandemic situation restricted that growth for some time. Similarly, the UPI transaction volume has been growing steadily since 2017 after it began in the previous year and in the pandemic situation from 2020 to 2022, the UPI transaction volume growth rate is almost 73%. The UPI transaction volume increased significantly during the pandemic situation. However, on a contrary the overall Digital Transaction volume growth rate was somewhat restricted during the same time period.

From Paytm's point of view, their strategic decisions mostly paid off well because their major market expansions and diversifications took place when the cashless economy or digital transactions were on the rise. The data shows that, in FY 2021-22, the Paytm UPI transaction market share had gone down from the previous year even though the overall Digital Transaction market was growing at 65% and the total UPI transaction volume contributed to 64% of all digital payments in India. It is noted that – it was during that time from 2020 to 2022, some controversies and related news about Paytm had surfaced and came to the public attention. Paytm (2023) has mentioned that in 2020, the Paytm application was unlisted from the Google Play store allegedly due to some violation of play store’s gambling policy. There were some rumours and news for some time on Customer data leakage by Paytm and in 2022, RBI has imposed a restriction on Paytm Payments bank from on-boarding new customers. All these may have impacted the Paytm application usage by the users. To mitigate the situation, Paytm has started investing more on cyber security measures and awareness programs to guarantee the security of user information and transactions.

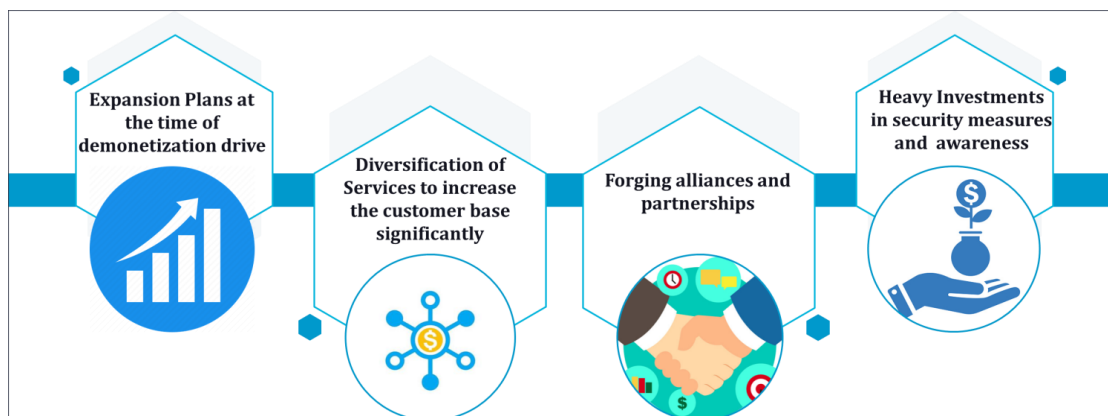


Fig. 8: Paytm Key Strategies over the years

Conclusion and Recommendation for Future Studies

Paytm, one of the market leaders and one of the oldest digital payment applications in the Indian market had a humble beginning but became a main stream Digital Payment platform very quickly through strategic business expansions and diversifications. Its meteoritic growth was fuelled by some favourable external events and RBI policies that had encouraged users to go for digital transactions instead of cash transactions. The Paytm digital transaction volume had been on the rise since 2016 when the overall digital transaction market was also growing in leaps and bounds. Since 2017, the UPI transactions started to get growing popularities and similarly the Paytm UPI transactions were also growing steadily. But however, it is observed that the growth of overall UPI transaction volume in India is more in comparison with Paytm UPI transaction market share YoY. In 2022-23, the overall UPI

transaction volume contributes to 73% of total digital transactions in India. And the data shows that the Paytm UPI transaction constitutes only 15% of that total UPI transaction volume.

The other Digital payment applications like PhonePe, Google Pay have larger market share in UPI payments presently. As per Vardhman (2021), PhonePe (2023) and Florence (2023), the user base of Paytm, PhonePe and Google Pay are respectively 450 MN (2021), 500 MN (2023) and 67 MN (2023). But in terms of UPI transaction volume market share, both PhonePe and Google Pay are ahead of Paytm. Based on available data from Rai (2023), the UPI Application market shares by transaction volume as of December 2022 are as follows, PhonePe – 46.9%, Google Pay – 34.3% and Paytm – 14.9%. Based on this available data, this can be inferred that the usage rate of these applications is different. Paytm and PhonePe has almost similar customer base and yet PhonePe has larger market share than Paytm. Also, Google Pay with relatively lower customer base than Paytm and PhonePe and yet holding a major market share immediately after PhonePe.

Further research studies are required in this area to understand the consumer behaviour on Digital Payment Applications usage and what are the factors that are influencing them.

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THE IMPACT OF AMAZON'S NEUROMARKETING TACTICS ON THEIR RECOMMENDATION SYSTEM TOWARDS ITS EFFECT ON CUSTOMER SATISFACTION

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Kankana Karan**
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ABSTRACT

This analysis seeks to examine how neuro-marketing techniques affects levels of consumer satisfaction experienced in electronic commerce environments. Specifically, we aim to investigate certain social branding elements that include personal recommendations from others, limited-time product or service offers, online reviews posted by customers, and testimonials or endorsements in relation to whether levels of customer satisfaction are rated as high or low. The primary data collected and utilized for this analysis was amassed using a combination of demographic variables about respondents as well as several numerical variables, which include information regarding income levels along with the aforementioned simpler variables focused on the social branding elements. The overarching objective is to identify which factors significantly influence the dual objectives of achieving high customer satisfaction while also realizing strong financial performance. The results from this analysis have the potential to provide valuable insights for companies seeking to optimize their neuro-marketing strategies and tactics in order to enhance customer satisfaction experienced in digital markets. Understanding how to effectively leverage neuro-marketing techniques through social branding could allow organizations to build stronger relationships with their customer base that fosters greater loyalty, positive word-of-mouth, and increased revenues over the long term. This report aims to shed light on these important issues for practitioners operating within electronic commerce environments.

KEYWORDS: *Neuro-Marketing Tactics, E-commerce, Customer Satisfaction, Personalized Recommendations, Social Proof, Limited-Time Offers.*

Introduction

Neuro-marketing combines principles from psychology, neuroscience, economics, and marketing to leverage sensory cues and forge emotional connections with consumers. This drives effective product sales by shaping experiences that entice customers to purchase and advocate for brands. This approach has also been applied to hotels and restaurants to help cement brand loyalty.

Emerging in 1990, neuro-marketing revolutionized marketing by tapping into subconscious emotions that influence over 90% of our decisions. Brands create sensory experiences designed to

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bypass conscious thought and directly influence cognitive and emotional states. This aims to shape purchasing behaviour and foster brand loyalty.

Amazon, a leader in personalized engagement, has integrated neuro-marketing into its recommendation system. This has helped elevate personalization to new levels.

Sophisticated tools like functional magnetic resonance imaging (fMRI) can enhance marketing campaigns without replacing traditional methods. Neuro-marketing's ability to identify implicit processes influencing consumer decision-making is pivotal. The transformation of retail offers significant opportunities for online businesses to leverage consumer neuroscience to decipher buying trends.

In e-commerce, customized suggestions play a key role. Amazon skilfully employs neuro-marketing to predict and influence customer behaviour.

Amazon innovatively integrates neuro-marketing into its recommendation engine seeking deep emotional connections. By applying insights from behavioural psychology and neuroscience, it aims to have a profound impact using techniques such as facial coding and eye tracking.

Amazon's algorithm-driven recommendations adapt to preferences, potentially limiting exposure to diverse options over time. This raises questions about the long-term impact on satisfaction and decision-making autonomy.

Ethical concerns arise from neuro-influenced recommendations. Questions surface regarding consumer autonomy and well-being in vulnerable populations. Our research aims to explore how Amazon's tactics influence satisfaction while considering ethical implications for consumer autonomy and marketing practices.

This introduction establishes the context for our research, focusing on Amazon's neuro-marketing tactics, its recommendation engine, and customer satisfaction. We intend to analyse these techniques, examine effectiveness, and critically assess ethical considerations. This will contribute to a deeper understanding of the digital retail landscape.

Literature Survey

Below we are listing few reference studies that are specifically relevant to our research.

- **Significance of Neuro marketing on Consumer Behaviour [1]:**This study examines changing customer behaviour in the modern business setting, introducing neuromarketing as a critical subject. Combining behavioural psychology, economics, and consumer neuroscience, it addresses the limitations of traditional marketing tactics. The need for firms to adapt quickly to evolving customer decision-making is emphasized. The study challenges the idea of customers as purely logical decision-makers, advocating for a more sophisticated approach beyond oversimplified economic theories.
- **Neuro marketing in India: Understanding the Indian consumer [2]:**This study's exploration of the marketing landscape highlights the philosophical underpinnings of neuromarketing. Positioned as a conceptual investigation, the study maps the customer's mind using advanced methods like fMRI and EEG. It explores contemporary neuromarketing techniques in India and charts the historical development of neuro marketing worldwide. The study concludes by predicting the future course of neuromarketing in the Indian market.
- **Neuro Marketing: The New Marketing Paradigm [3]:**This study's initiate a critical exploration of whether neuromarketing will be the next significant trend in marketing research. Defining neuromarketing as the fusion of neuroscience, psychology, and economics, the study aims to establish a correlation between neural activity and consumer buying behaviours. It suggests that neuromarketing holds substantial potential, marking the next revolution in marketing research.
- **Neuro marketing and "Poor in World" Consumers: how the animalization of thinking underpins contemporary market research discourses[4]:**This work in consumption research focuses on the fusion of cognitive psychology and neuroscience, resulting in neuromarketing. Using bio-imaging technology, the field interprets and shapes consumer behaviour by deciphering primal motivations. The study critically analyses dominant discourses in neuromarketing, emphasizing a discursive reduction portraying consumers as "poor in world" animals. The hybrid methodology blends Heideggerian philosophy and textual analysis, offering a sophisticated understanding of this emerging field's dynamics.

- **Neuro marketing: Inside the Mind of the Consumer[5]:**This article addresses the growing demand to identify variables affecting customer attitudes and actions. Recognizing drawbacks in conventional techniques, the paper promotes brain-based strategies in neuromarketing. Hsu provides managers with advice, emphasizing two essential uses of neuromarketing tools: creating new insights and confirming pre-existing ones. The paper underscores the significance of seeing conventional and brain-based techniques as complementary, promoting a comprehensive understanding of consumers beyond traditional limitations.
- **Case Amazon: Ratings and Reviews as a part of Recommendations[6]:** This study focuses on user behaviour on Amazon, emphasizing the interaction between algorithm-based and user-generated suggestions. Employing applied ethnography, interviews, and observation, the research explores complex dynamics. Results highlight the comprehensive character of recommender systems and the relationship between user selections and recommendation delivery. The study emphasizes the holistic understanding of recommender systems for interface enhancement.
- **Neuro marketing: No Brain, No Gain! [7]:** This paper critically analyses the role of neuromarketing in comprehending customer behaviour, emphasizing the shortcomings of conventional marketing approaches. The authors contend that the high failure rate of new product launches results from a failure to address the critical factor of thoroughly examining the human brain, especially the subconscious region housing decision-making. The study emphasizes how the rising complexity of consumer knowledge necessitates a solution, advocating for neuromarketing as a strategy employed by successful businesses to gain a competitive edge.

Need for the Study

In the realm of digital commerce, evolving neuro-marketing techniques are increasingly important for online giants like Amazon. This study delves into their impact within Amazon's recommendation system and influence over customer satisfaction.

As e-commerce giants adopt these strategies, understanding their implications becomes critical. Prior research acknowledges the effect of personalized recommendations, limited-time offers, and social elements (like reviews) on consumer perceptions. However, a gap exists in comprehending how these elements, when strategically used by Amazon, collectively shape customer satisfaction.

This research aims to address this gap by exploring the relationships between personalized recommendations, limited-time offers, social elements, and their impact on satisfaction. It incorporates demographic variables, including income levels, to understand satisfaction differences across consumer segments.

Furthermore, the study aims to assist companies, especially Amazon, in optimizing neuro-marketing strategies. Understanding factors affecting satisfaction is crucial for retention and financial performance. Insights from this analysis could guide e-commerce practitioners to refine approaches, fostering loyalty and revenue growth. Ultimately, this study aims to provide insights beyond immediate sales impact, focusing on long-term customer satisfaction and business success, potentially shaping the future of neuro-marketing in e-commerce.

Research Gap

A review of current literature shows that exploring Amazon's complex neuro-marketing tactics and their impact on customer satisfaction within the recommendation system is nuanced. While existing studies acknowledge the relevance of personalized recommendations, limited-time offers, and social elements in influencing consumer behaviour, there appears to be a lack of comprehensive examination into how Amazon systematically employs these specific neuro-marketing strategies collectively contribute to the subtle dimension of customer satisfaction in the context of e-commerce. Existing research provides glimpses into the individual impacts of these factors, but the comprehensive interplay and their combined influence on satisfaction levels remain largely unexplored. Addressing this gap is crucial as it goes beyond merely filling a knowledge void; it holds potential to reshape the trajectory of neuro-marketing practices within the e-commerce domain. The following research question is examined in this study.

Research Question

Investigate the impact of neuro marketing tactics like personalized recommendations, limited-time offers, and social proof elements on customer satisfaction within Amazon's recommendation system.

The following are the hypothesis deployed in our research.

- H₀:** There is no significant relationship between Amazon's neuro-marketing tactics, encompassing (personalized recommendations, limited-time offers, and social proof elements) and the levels of customer satisfaction in the context of the recommendation system.
- H₁:** There is a significant relationship between Amazon's neuro-marketing tactics (personalized recommendations, limited-time offers, and social proof elements) and the levels of customer satisfaction in the context of the recommendation system.

Primary data was collected through surveys of various Amazon customer groups. A Google form was used to survey a total of 98 Amazon customers from different classes. Standard descriptive statistical methodologies were used to analyse the primary data. Finally, a Random Sampling Algorithm was employed to identify which independent variables have a greater relative importance in influencing Amazon customer satisfaction as the dependent variable.

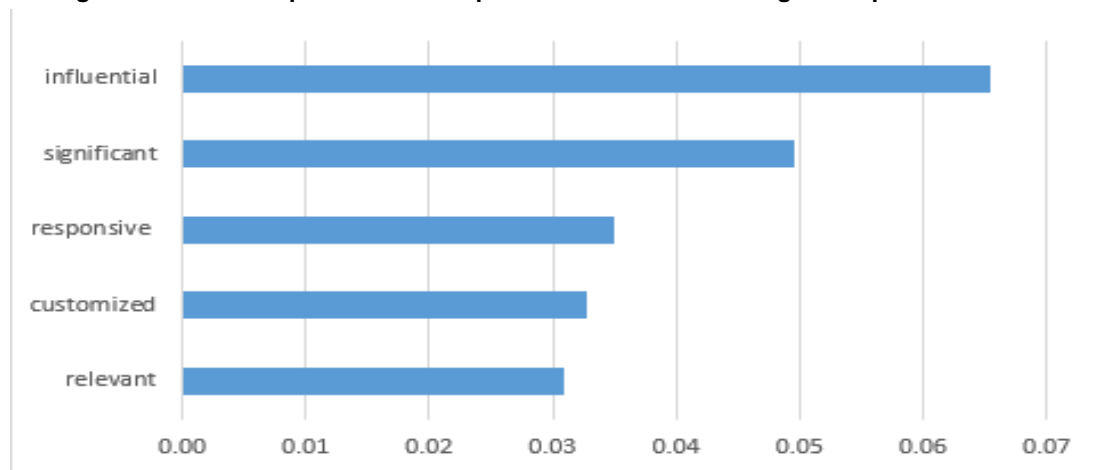
Data Analysis

To analyse the combined effect of independent variables personalized recommendations (influential, relevant and customized), limited-time offers (responsive), social proofs (significant) on the dependent variable (customer satisfaction), Random Forests Classification algorithm is employed. This statistical technique is chosen due to the categorical nature of variables that were coded to numerical values using standard technique of one-hot encoding. The interview questions used in the survey relating to these variables are depicted in the Appendix-I.

The top five independent variables that has most effect on the dependent variable (Amazon's Customer Satisfaction) are as given in the figure 1.0 below.

	Feature	Relative Importance by RF Algorithm
1	influential	0.07
2	significant	0.05
3	responsive	0.04
4	customized	0.03
5	relevant	0.03

Figure 1: Relative Importance of Independent Variables Effecting the Dependent Variable



However, the descriptive statistical analysis was used for a large number of independent variables & sub variables relating to the three independent variables of personalized recommendations, limited-time offers, and social proofs, below we are presenting the charts for only the five important

independent variables given in the table of Figure 1.0. Below we are examining the important variables that effect customer satisfaction.

Table 1: The top influencing variables of this study mapped with the survey questions

Variable Ranking	Independent variable's abbreviation	The related research question in the data survey form
1	Influential	Amazon's personalized recommendations impacting customer purchases
2	significant	Customers giving importance to reviews/testimonials of Amazon
3	responsive	Customer's attitude towards Amazon's limited-time offers
4	customized	Amazon's recommendations catering customers' needs and preferences
5	relevant	Amazon's recommendations impacting perception of customers
6	enhanced (y)	dependent variable – customer satisfaction

Tables, contain bivariate analysis of the five top five independent variables depicted in the Table 1 (first column).

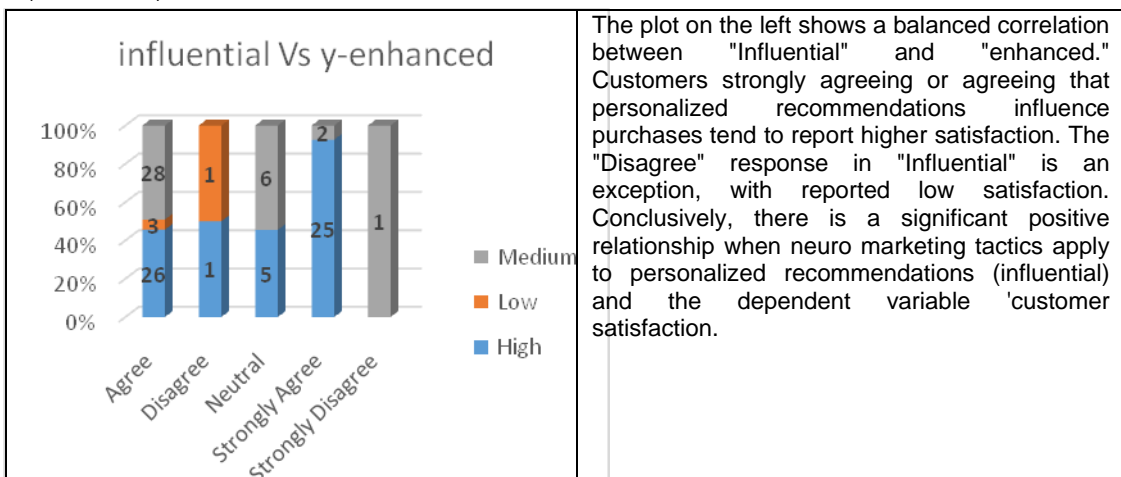


Table 1.1: Descriptive Statistics for the independent variable – influential

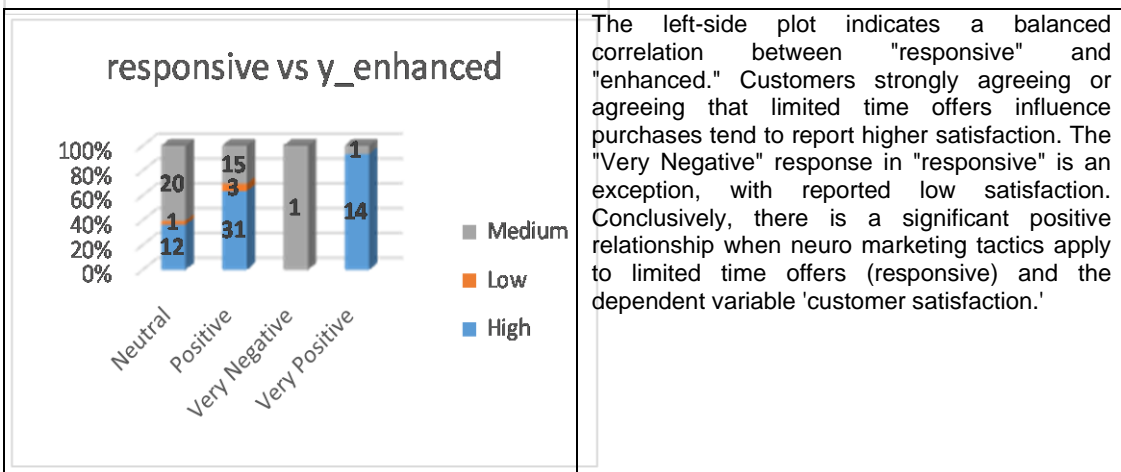
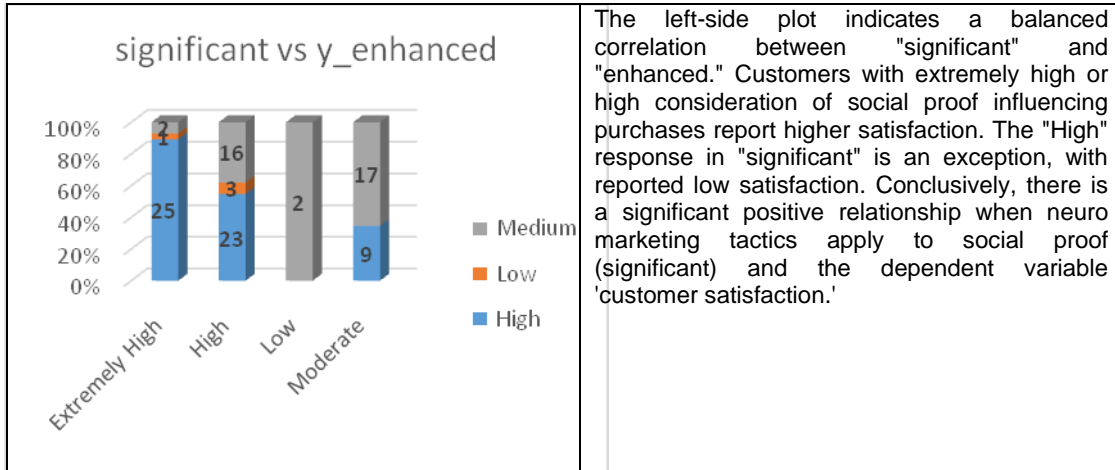
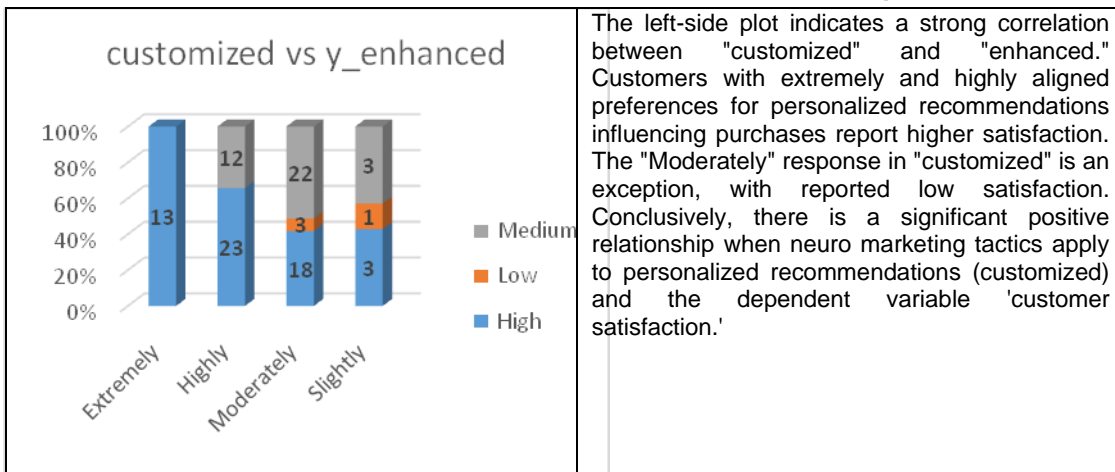


Table 1.2: Descriptive Statistics for the independent variable – responsive



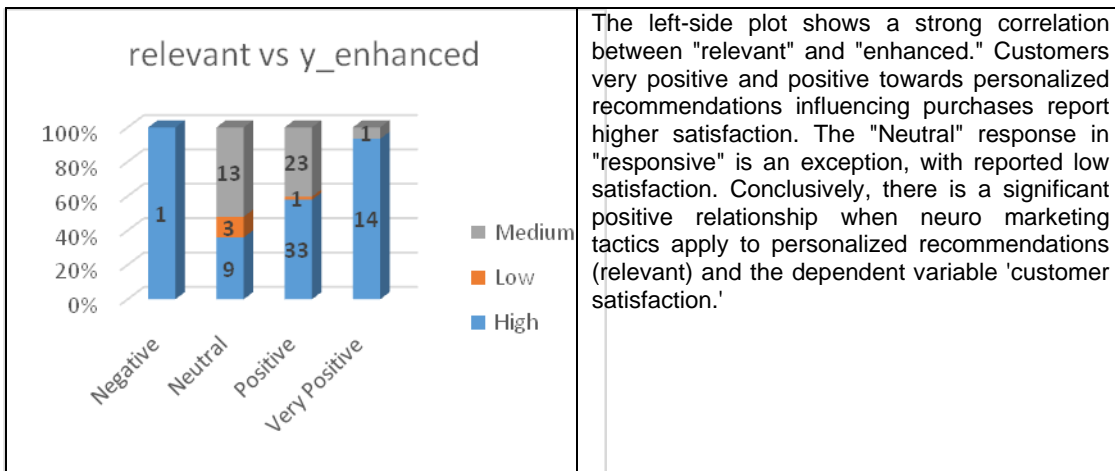
The left-side plot indicates a balanced correlation between "significant" and "enhanced." Customers with extremely high or high consideration of social proof influencing purchases report higher satisfaction. The "High" response in "significant" is an exception, with reported low satisfaction. Conclusively, there is a significant positive relationship when neuro marketing tactics apply to social proof (significant) and the dependent variable 'customer satisfaction.'

Table 1.3: Descriptive Statistics for the independent variable –significant



The left-side plot indicates a strong correlation between "customized" and "enhanced." Customers with extremely and highly aligned preferences for personalized recommendations influencing purchases report higher satisfaction. The "Moderately" response in "customized" is an exception, with reported low satisfaction. Conclusively, there is a significant positive relationship when neuro marketing tactics apply to personalized recommendations (customized) and the dependent variable 'customer satisfaction.'

Table 1.4: Descriptive Statistics for the independent variable – customized



The left-side plot shows a strong correlation between "relevant" and "enhanced." Customers very positive and positive towards personalized recommendations influencing purchases report higher satisfaction. The "Neutral" response in "responsive" is an exception, with reported low satisfaction. Conclusively, there is a significant positive relationship when neuro marketing tactics apply to personalized recommendations (relevant) and the dependent variable 'customer satisfaction.'

Table 1.5: Descriptive Statistics for the independent variable –relevant

Details of Dependent Variable

With the univariate analysis (not presented here for space constraints) and bivariate analysis (presented above), we have following discussion points and findings.

- **Ranking 1 contributing independent variable to customer satisfaction (influential)**

Table 1.1 shows that there is a positive relationship between people who find personalized recommendations influential and those who report higher satisfaction levels. In other words, people who agree or strongly agree that personalized recommendations influence their purchasing decisions are more likely to report that they are satisfied with the recommendations they receive. However, there is an exception to this trend. People who disagree that personalized recommendations influence their purchasing decisions are more likely to report that they are not satisfied with the recommendations they receive. This suggests that there may be a small group of people who are not receptive to personalized recommendations.

- **Ranking 2 contributing independent variable to customer satisfaction (responsive)**

Table 1.2 signifies that there is a moderate correlation between people who have positive attitudes towards limited-time offers and those who report higher satisfaction levels. In other words, people who have positive or very positive attitudes towards limited-time offers tend to report that they are satisfied with the recommendations they receive. However, there is a notable exception to this trend. People who have very negative or negative attitudes towards limited-time offers still report high satisfaction levels. This suggests that there may be a small group of people who are not receptive to limited-time offers, but are still satisfied with the recommendations they receive.

- **Ranking 3 contributing independent variable to customer satisfaction (significant)**

Table 1.3 indicates a positive correlation between the perceived importance of reviews/testimonials and satisfaction levels in neuro marketing. High importance aligns with higher satisfaction, suggesting a reliance on social proof. Exceptions exist, with some reporting high satisfaction despite lower importance ratings, emphasizing the impact of personalized recommendations, brand loyalty, and individual preferences beyond reviews. This highlights the effectiveness of neuro marketing tactics, including personalization algorithms and recommendation presentation, in influencing satisfaction even for those placing less emphasis on social proof.

- **Ranking 4 contributing independent variable to customer satisfaction (customized)**

Table 1.4 reveals a positive correlation between perceived customization of Amazon's recommendations and satisfaction in neuro marketing. Higher ratings for customization align with increased satisfaction, indicating a preference for tailored suggestions. While there's a general trend, exceptions exist with moderate/low customization still resulting in high satisfaction, suggesting other factors like content and perceived value play a role. Dissatisfaction is primarily associated with lower customization ratings. Understanding individual perceptions of customization is crucial, emphasizing the need for qualitative data to enhance personalization strategies.

- **Ranking 5 contributing independent variable to customer satisfaction (relevant)**

Table 1.5 indicates a positive correlation between perceived relevance of personalized recommendations and satisfaction in neuro marketing. Positive and Very Positive relevance ratings align with higher satisfaction levels. Neutral relevance perceptions show a wider satisfaction range, suggesting other factors at play. Surprisingly, Negative relevance perceptions still yield instances of Medium and High satisfaction, possibly influenced by individual differences or non-personalized aspects. However, High satisfaction is less common with Negative perceptions, emphasizing the significance of perceived relevance in overall satisfaction.

Recommendations

- **Enhance Personalized Product Recommendations:** Strengthen efforts to deliver highly personalized product recommendations tailored to individual customer needs and preferences. Continue refining algorithms and analytics to improve the accuracy and relevance of recommendations. Leverage customer data insights to better understand specific customer preferences and enhance the personalization of product suggestions.
- **Optimize Limited-Time Offers:** Continue to leverage positive results from limited-time offers, as customers with a positive view of these offers also report higher satisfaction levels. Explore

innovative and creative ways to present limited-time offers to maintain customer interest and excitement while monitoring effectiveness. Adjust strategies based on ongoing customer feedback analysis.

- **Highlight the Value of Customer Reviews and Testimonials:** Recognize the importance customers place on reviews and testimonials from other customers. Continue prioritizing transparency and the sharing of customer feedback. Incentivize customers to leave reviews and testimonials to build a robust and trustworthy repository of information. Consider features that highlight verified and detailed reviews to further build customer trust and confidence.
- **Tailor Recommendations to Individual Customer Needs:** Build on the positive perception of customized recommendations by continually refining algorithms and analytics to better understand evolving customer preferences. Implement feedback loops to capture changes in preferences in real-time and adjust recommendations accordingly. Communicate the customization features to customers, emphasizing efforts to tailor recommendations to their specific needs and enhance their experience.
- **Maintain Positive Perception of Personalized Recommendations:** Sustain efforts to maintain positive customer perceptions of personalized recommendations, as there is a correlation between positive perceptions and high satisfaction levels. Communicate the value of personalized recommendations to customers, emphasizing how these recommendations enhance the overall customer experience. Continuously innovate in presenting personalized recommendations to keep the feature fresh and engaging.
- **Continuous Monitoring and Adaptation:** Implement a robust system for regularly monitoring customer satisfaction and perceptions. Stay agile and adaptive to changing consumer behaviours and preferences in the dynamic e-commerce landscape. Utilize data analytics to track the impact of marketing tactics over time and adjust strategies based on emerging trends and customer feedback insights.
- **Invest in Customer Education:** Educate customers on how to make the most effective use of personalized recommendations, limited-time offers, and social proof elements shared by other customers. Provide information on how these tactics can enhance their overall shopping experience and help them discover relevant products. Empower customers to navigate and utilize these features effectively through tutorials and clear communication.
- **Build Trust Through Transparency:** Continue efforts to maintain transparency in how personalized recommendations, limited-time offers, and social proof elements are implemented. Clearly communicate data protection measures to address privacy concerns and build trust with customers. Consider implementing features that allow customers to customize the level of personalization and control over their data preferences.
- **Diversify and Innovate:** Explore new avenues for personalization, limited-time offers, and social proof to keep the customer experience exciting and innovative. Consider strategic collaborations or partnerships that can bring unique and exclusive offers to customers. Monitor industry trends and customer behaviour to identify opportunities for further differentiation.
- **Leverage Customer Feedback:** Establish a systematic process for soliciting and collecting customer feedback. Use customer feedback insights to identify areas for improvement and address concerns promptly. Actively engage with customers through surveys, reviews, and social media to maintain strong connections and gather valuable intelligence.

Conclusion

In conclusion, the comprehensive analysis of customer satisfaction through neuromarketing tactics has yielded critical insights into the influencing factors shaping consumer perceptions. The univariate and bivariate analyses have pinpointed key variables, with personalized recommendations emerging as the top contributor to customer satisfaction. The positive correlation between perceiving recommendations as influential and reported satisfaction levels underscores the importance of tailoring suggestions to individual preferences. Interestingly, exceptions exist, highlighting a small group of individuals not receptive to personalized recommendations, emphasizing the need for nuanced approaches.

Attitudes towards limited-time offers also play a significant role in customer satisfaction, with a moderate correlation identified. While positive attitudes align with higher satisfaction, a notable exception reveals that even those with negative views on limited-time offers can still report elevated satisfaction levels. This suggests a unique segment of customers who, despite their aversion to specific marketing tactics, find overall satisfaction in the recommendations they receive. These findings underscore the complexity of consumer behaviour and the necessity for businesses to navigate diverse preferences in their neuromarketing strategies.

Strategic recommendations emerge from these insights, guiding businesses in optimizing their neuromarketing tactics. From enhancing the personalization of product recommendations to leveraging positive results from limited-time offers, and emphasizing the value of customer reviews, the proposed strategies aim to cater to varied consumer preferences. Continuous monitoring, transparency, and customer education also feature prominently in these recommendations, reflecting the dynamic nature of the e-commerce landscape and the importance of maintaining trust and satisfaction in the long term. As businesses implement these strategies, they stand poised to not only meet current customer expectations but also adapt effectively to evolving trends and preferences.

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Appendix I

Variable Coding

- **Dependent Variable: Customer Satisfaction**
 - Low (Reference Category)
 - Medium
 - High
- **Independent Variables:**
 - **Influential (Personalized Recommendations):**
 - Binary: 0 (Not Influential), 1 (Influential)
 - **Responsive (Attitude towards Limited-Time Offers):**
 - Binary: 0 (Negative/Neutral Attitude), 1 (Positive Attitude)
 - **Customized (Feeling of Tailored Recommendations):**
 - Binary: 0 (Not Tailored), 1 (Tailored)
 - **Relevant (Perception of Personalized Recommendations):**
 - Binary: 0 (Not Relevant), 1 (Relevant)
 - **Significant (Importance of Reviews and Testimonials):**
 - Binary: 0 (Not Significant), 1 (Significant)

Appendix-II**Survey Interview Questions used for Primary Data Collection****Demographic Questions:**

1. **Gender**
 - a) Male
 - b) Female
 - c) Prefer not to Say
2. **Age**
 - a) Below 18 years
 - b) 18-24 years old
 - c) 25-34 years old
 - d) 35-44 years old
 - e) 45 and above
3. **Income Bracket (Monthly)**
 - a) Less than Rs 25000
 - b) Rs 25000 to Rs 50000
 - c) Rs 50000 to Rs 75000
 - d) Rs 75000 and above

Personalized Recommendations

1. Have personalized recommendations of Amazon influenced your purchasing decisions in the past?
 - a) Strongly Agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly Disagree
2. How do you perceive personalized recommendations during your shopping experience with Amazon?
 - a) Very Positive
 - b) Positive
 - c) Neutral
 - d) Negative
 - e) Very Negative
3. To what extent do Amazon's product recommendations make you feel tailored to your specific needs and preferences?
 - a) Not at all
 - b) Slightly
 - c) Moderately
 - d) Highly
 - e) Extremely
4. To what extent do you make impulse purchase decisions after Amazon provides personalized recommendations based on their previous purchases or product searches?
 - a) Always
 - b) Frequently
 - c) Occasionally

- d) Rarely
- e) Never

Limited Time Offers:

1. What is your attitude towards limited-time offers when making a purchase through Amazon?
 - a) Very Positive
 - b) Positive
 - c) Neutral
 - d) Negative
 - e) Very Negative
2. Do you make a purchase at Amazon solely because of limited-time offers on your interested products?
 - a) Strongly Agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly Disagree
3. Do you believe that previous purchases through Amazon based on limited-time offers contributed to your satisfaction with a product?
 - a) Strongly Agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly Disagree
4. How often do you find yourself making impulse purchases due to limited-time offers?
 - a) Always
 - b) Frequently
 - c) Occasionally
 - d) Rarely
 - e) Never

Social Proof (Reviews, Testimonials):

1. How much importance do you place on reviews and testimonials when considering a purchase through Amazon?
 - a) Extremely High
 - b) High
 - c) Moderate
 - d) Low
 - e) Extremely Low
2. Do you believe that previous purchases through Amazon based on reviews or testimonials solely influenced your satisfaction level towards a product?
 - a) Strongly Agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly Disagree

3. Would you be more likely to trust a product with mostly positive reviews or one with mostly negative reviews, even if both have the same overall rating?
- a) Strongly Prefer Positive
 - b) Prefer Positive
 - c) No Difference
 - d) Prefer Negative
 - e) Strongly Prefer Negative

Interaction of Independent Variables:

1. Which of the factors do you prioritize the most for satisfying your purchase decisions and make up with a purchase when Amazon provides all of them at the same time?
- a) Personalized Recommendations
 - b) Limited Time offer products
 - c) Social Proof like Reviews, Testimonials etc.
 - d) Other factors
 - e) No clear priority
2. What is your satisfaction level when Amazon applies personalized recommendations, Limited Time offers, Social Proof at the same time for the products you are looking for?
- a) Low
 - b) Medium
 - c) High



EMERGING TECHNOLOGIES FOR TEACHING AND LEARNING: A PANDEMIC-DRIVEN ACCELERATION IN EDUCATION TRANSFORMATION

SK Aminur*
Dr. N.R. Aravamudhan**

ABSTRACT

This study explores the rapid uptake of emerging technologies in education, which has been made more intense by the difficulties that have arisen during and after COVID-19. The study's objectives were to examine and evaluate how emerging technologies played a key role in the realm of education during and after the COVID-19 Pandemic. With the help of quantitative research method as in with the aid of a questionnaire, the survey was carried out. The pandemic was a driving force behind the unprecedented rise in popularity of virtual classrooms, AI-driven adaptive learning, and immersive learning experiences in the field of education. This paper investigates the adaptability of technology-driven pedagogies by closely examining how educators made the shift. It also talks about the long-term effects of this rapid integration, stressing the paradigm change to adaptable, hybrid learning models. In order to ensure an inclusive and successful educational future, the abstract concludes by highlighting the ongoing importance of striking a balance between pedagogical principles and technological advancements. Education is going through a paradigm shift as a result of the quick integration of virtual reality, artificial intelligence, and interactive platforms. This paper analyses major technological developments, looks at how they affect education, and talks about the opportunities and problems that come with putting them into practice. The potential for these tools to improve student engagement, customize instruction, and develop critical skills is becoming more apparent as educators use them more frequently.

KEYWORDS: *Emerging Technologies, COVID-19, Pedagogical Principles, Critical Skills.*

Introduction

Emerging from the COVID-19 pandemic, the education landscape has undergone significant transformation. With the declaration of a global pandemic in 2020, countries worldwide implemented various measures, including lockdowns and social distancing, to mitigate the spread of the virus. This resulted in the closure of schools and institutions, forcing a shift towards online platforms for education delivery.

While Western nations adapted relatively smoothly to online learning, Sub-Saharan Africa faced numerous challenges. Countries in the region, including the SACU members (Botswana, Lesotho, South Africa, Namibia), had to divert resources towards health programs, impacting educational services and budgets. Additionally, the closure of schools disrupted learning programs and exacerbated existing inequalities.

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Universities in the SACU region adopted Learning Management Systems (LMS) as a key tool for Emergency Response Teaching (ERT). However, this transition was hindered by a lack of instructional design expertise among faculty and limited access to technology among students. The socioeconomic realities of students in under-resourced communities, characterized by poor internet connectivity and varying levels of digital skills, further complicated the situation.

Despite these challenges, policymakers and university leadership held the view that remote multi-modal teaching and online learning could save the academic year. This "instructive approach," however, ignored the voices of both faculty and students, leading to poor implementation and exacerbating negative impacts on remote learning. The lack of consideration for the diverse student experiences and the assumption that all students were "digital natives" contributed to epistemic injustice and digital inequity.

This approach failed to acknowledge the "messy realities" of student engagement with technology. The pervasive social inequalities within the SACU region significantly impacted access to technology and digital skills, creating a stark divide between the "haves" and "have nots." This further entrenched existing inequalities and hindered access to knowledge and participation in knowledge development, perpetuating epistemic injustice and digital inequity.

Research Methodology

Title-"Emerging Technologies for Teaching and Learning: A Pandemic-Driven Acceleration in Education Transformation"

Problem Statement

The rapid adoption of new technologies in education brought about by COVID-19 has intensified the digital gap in online learning by raising questions about access for poor Indian students. This study focuses on three specific issues that these students face: inequalities in technology literacy, unequal access to digital resources, and the need for pedagogical changes in online learning. In addition, it examines the psychological effects on their mental health and assesses current educational practices to make recommendations for fair access.

Objectives

- Evaluate the impact of emerging technologies on teaching methods and student engagement.
- The Impact of COVID-19 on Underprivileged Students' Online Learning in India

Sources of Data Collection

- Primary sources: Teachers and students
- Secondary sources: Research papers.

Sampling Frame

This study is conducted in Bangalore.

Sample Size

Sample size for the students- 50

Data Collection Method

The information was gathered using a survey that was tailored to the intended recipients, who are school students. Prior to the actual data collection, a trial run was carried out to ensure that the question was relevant and suitable for the purpose.

Limitations of Research

- **Representativeness Challenges:** The sample may not accurately represent the broader target market due to potential biases in participant selection. This limitation affects the external validity of the study, cautioning against making sweeping inferences about the entire market.
- **Response Bias Risk:** The research is susceptible to response bias, where participants may provide socially desirable answers or withhold their true opinions. This potential bias can impact the reliability and accuracy of the collected data.

- **Data Scope Limitations:** The study's insights may be constrained by the depth and breadth of data gathered from a limited number of respondents. Nuances and variations in responses could be overlooked due to the study's restricted dataset.
- **Time-Related Constraints:** The research may face time limitations, affecting the depth of data collection and analysis. A more extensive study with a longer timeframe could yield a more comprehensive understanding of market dynamics.
- **Dynamic Market Conditions:** Given the dynamic nature of markets, findings from a small-scale study may not fully capture evolving trends or changes in consumer behaviour over time.
- **Contextual Understanding Limitations:** The study might lack a comprehensive understanding of the market context due to its size. Broader economic, cultural, or geopolitical factors influencing market dynamics may not be thoroughly explored.

Literature Review

- **Marinoni, G.; van's Land, H.; Jensen, T. (2020): The Impact of COVID-19 on Higher Education around the World**

The survey aimed at investigating the first measures implemented by institutions of higher learning in their response to the crisis. Approximately 9670 higher education institutions were contacted to take part in the survey globally, but findings were based on 424 complete responses from the unique institutions of higher learning in 109 countries, and an analysis of the results was conducted regionally as well as globally.

- **Toquero, C.M.(2020) : Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic**

The research discussed how higher education was affected by the pandemic, as well as how it could tackle similar challenges in the future. The study came up with the following recommendations for higher education: integration of environment and health learning modules in the curriculum to enable the curriculum to become reactive to the world needs when pandemics strike; strengthening of environmental policies and hygiene practices to prevent the outbreak and spread of communicable diseases; incorporation of virtual mental health and medical services to promote continuous monitoring.

- **Lokanath Mishra (2020): Online teaching-learning in higher education during lockdown period of COVID-19 pandemic**

This study has been conducted in Mizoram University, located in the capital city Aizawl, to draw a holistic picture of ongoing online teaching-learning activities during the lockdown period including establishing the linkage between change management process and online teaching-learning process in education system amid the COVID-19 outbreak so as to overcome the persisting academic disturbance and consequently ensure the resumption of educational activities and discourses as a normal course of procedure in the education system.

- **(Berman, 2018): "Urban Students Benefit from Online Learning"**

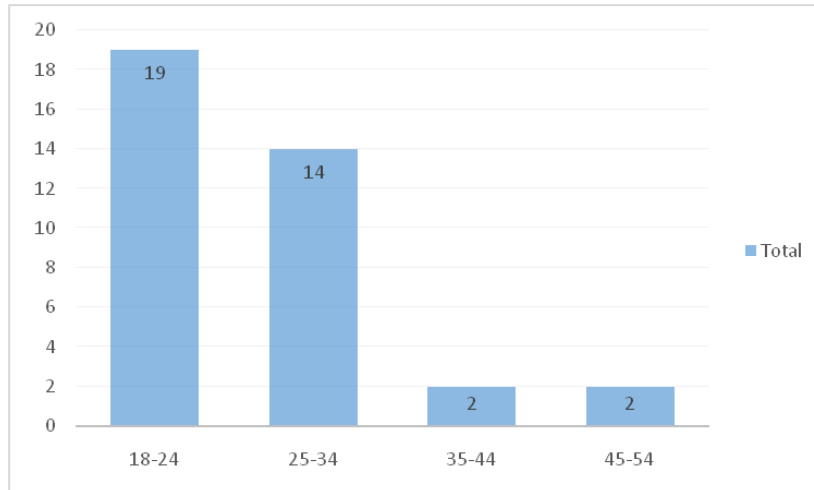
This article examines the potential benefits of EdTech for urban students. It discusses how EdTech can provide access to a wider variety of courses and provide a more personalized learning experience. Furthermore, the article mentions how EdTech can reduce the cost of education and provide access to previously unavailable educational materials.

- **Beckers and Panadero (2020): Artificial intelligence (AI) in education**

This paper tries to critically examine the hype and hope surrounding AI in education, advocating for evidence-based implementation and careful consideration of ethical implications. Siemens (2017) introduced the concept of learning analytics, showcasing the potential of AI to personalize learning experiences and improve student outcomes. It also covers the concept of "strategic agility" in the context of rapid change, proposing how education institutions can leverage technology to adapt and thrive in uncertain times. Reeves (2020) emphasized the need for leadership and learning in navigating the disruptive forces of technology in education.

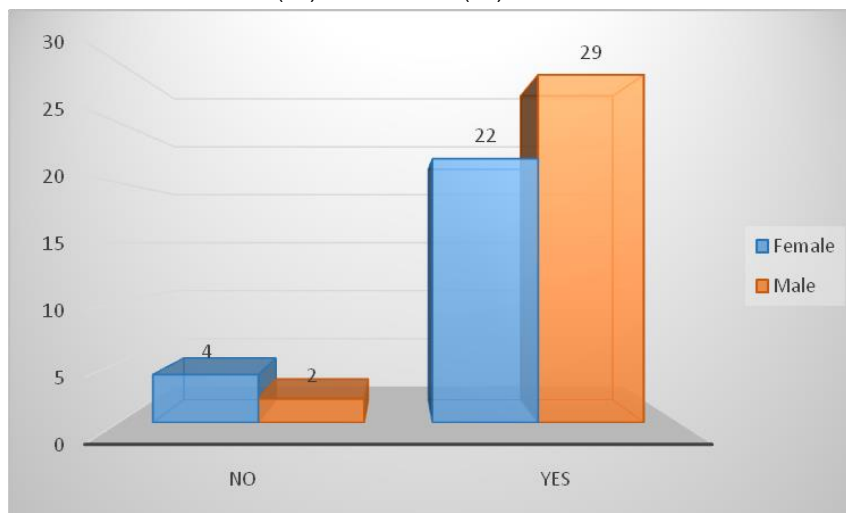
Analysis and Interpretation

- **"Demographic Distribution by Age"**



- The majority of respondents fall within the 18-24 and 25-34 age groups.
- There are fewer respondents in the 35-44 or 45-54 age groups, it might indicate a potential gap in understanding how individuals in these age ranges perceive or use educational technology.
- **Experienced or observed the integration of emerging technologies in your educational environment**

There are 31 male and 26 female entries in the dataset. It seems that the main focus is on people's experiences or observations on the incorporation of modern technology in their educational setting. Of the 51 entries, the majority have responded "Yes," meaning they have either personally experienced or seen the integration of developing technology. Six entries, on the other hand, have replied "No." This implies that most of the people in the dataset have either used or seen emerging technologies implemented in educational environments. The gender distribution reveals that there are more "Yes" answers from both males (29) and females (22).



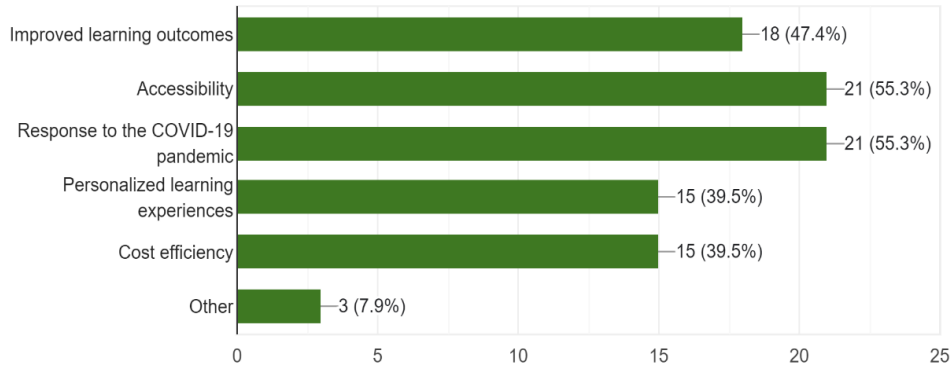
There is a gender disparity in this market research data, with more male respondents than female respondents. Most hold master's degrees, although there is a discrepancy in the representation of people classified as "Others." Interestingly, there aren't many women holding doctorates or other advanced degrees.

• **What are the main drivers for the adoption of emerging technologies in education?**

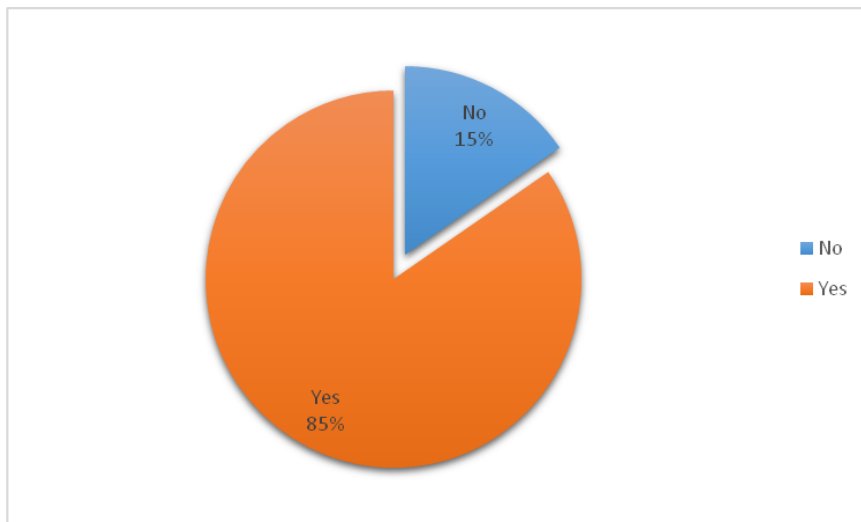
6. In your opinion, what are the main drivers for the adoption of emerging technologies in education?

(Please select one or more options to apply)

38 responses

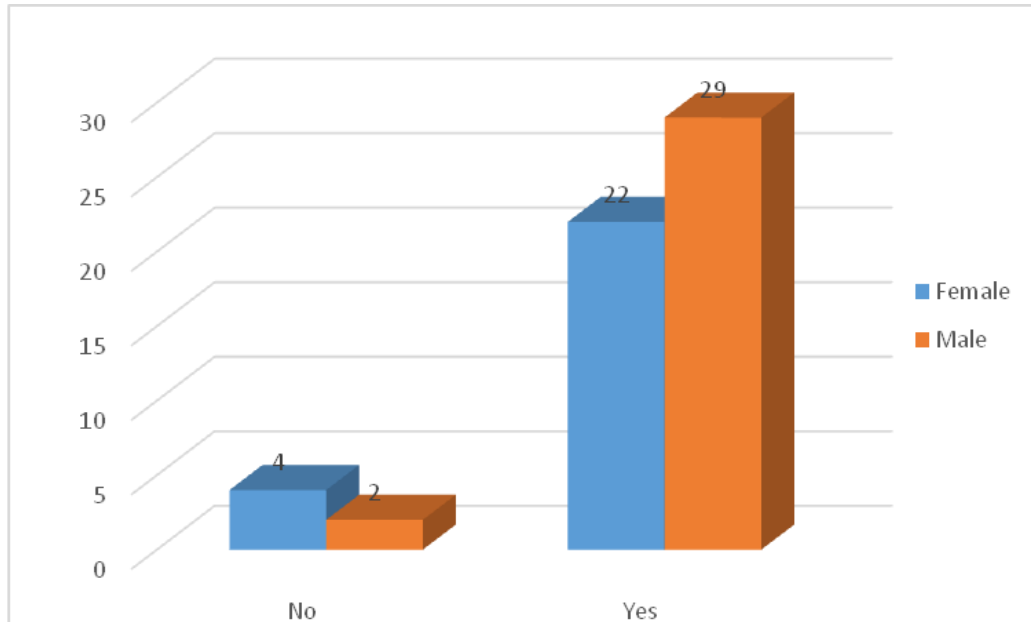


- From the respondents 47.4% of respondents choosing this option, it was the most popular. It appears from this that educators think new technologies can improve student learning.
- Accessibility was chosen by 55.3% of respondents, making it the second most popular option. This implies that educators think new technology can improve accessibility to education for pupils who live in remote places or have disabilities.
- Personalized learning: 39.5% of respondents chose this. This shows that instructors think new technologies can contribute to giving pupils more individualized learning opportunities.
- Cost-effectiveness: 39.5% of respondents chose this. This implies that educators think new technologies will contribute to lower educational costs.
- This suggests that there may have been a failure to fully comprehend the viewpoints of highly skilled professionals working in the education sector. Future studies could involve a more varied variety of subjects in order to fill in these gaps.
- **How has the COVID-19 pandemic affected the use of technology in education**



- The COVID-19 pandemic, according to the majority of responders (30 out of 57), has speed up the use of emerging technologies in education. This points to a general recognition of the pandemic's revolutionary influence on teaching methods and a greater use of digital resources.
- Not Much Changed (Total: 16):
Sixteen out of the 57 respondents, or a fraction, believe that the use of emerging technologies has not changed significantly. According to this point of view, there may not have been a discernible change in the way technology is used in schools as a result of the epidemic for some people.

- **Overall experience with online learning, especially during the COVID-19 pandemic**



There is a modest numerical bias favouring males (31) over females (26), according to the 57 items in the dataset. Remarkably, "Neutral" (25 entries) is the most common sentiment, followed by "Positive" (23 entries) and "Negative" (7). Males predominate in the "Neutral" sentiment category, whereas females are more prevalent in the extreme sentiment categories ("Positive" and "Negative"). There are very few extreme sentiment entries—one for each of "Very Negative" and "Very Positive." The aforementioned research underscores the necessity of contextual data in order to attain a more intricate comprehension of the sentiment distribution.

Challenges for Poor and Marginalized Students

- The argument is that the COVID-19 epidemic has exacerbated social inequality, which stands in the way of high-quality education. Newspapers and news websites were replete with discussions of the difficulties faced by underprivileged and marginalized students as a result of the pandemic-induced transition to online and ERT study.

Students faced difficulties focusing on online lectures due to a variety of factors, such as congested family homes, bad network connectivity, and limited access to gadgets and data.

Because the majority of their parents are unofficial traders, the majority of students' household money had dried up during lockdown. They were unable to pay for their housing as a result, and as of right now, "ruthless landlords are refusing to give students their belongings" (Mafolo, 2020). Additionally, students reported that they were unable to access assignments due to

Faculty Concerns

- For online classes, teacher-student interaction is essential to both the efficacy of learning and the quality of instruction. The teacher-student interaction in online learning environments was examined in Xie et al.'s subsequent research. A model of design was created by examining the four elements—subjects, behaviours, tools, and environment—that underpin the interactions

between teachers and students in online learning environments. Numerous elements enabled by the online learning environments were taken into consideration, and several kinds of interaction were identified.

A real-time dynamic artificial intelligence system was employed to analyse the teacher-student interaction over three rounds of teaching practices, which resulted in further refinement and validation of the model. An evaluation revealed that the strategy may greatly increase students' participation during the exchange, and

Findings

Age Groups: The survey primarily attracted participants in the 18-24 and 25-34 age brackets, indicating a predominantly younger demographic. However, there is a noticeable gap in understanding the perspectives of individuals aged 35-44 or 45-54 regarding educational technology, potentially limiting the study's comprehensiveness.

Gender Disparity: The dataset leans slightly towards males, with 31 male and 26 female entries. Moreover, more males have experienced or observed the integration of emerging technologies compared to females, highlighting a gender-based distinction in technology exposure.

Education Levels: The majority of respondents hold master's degrees, but there is an underrepresentation of individuals categorized as "Others." Additionally, fewer women hold doctorates or advanced degrees, suggesting a potential gender-based disparity in educational attainment within the surveyed group.

Integration of Emerging Technologies

Experiences: Among the 57 entries, the majority (49) have first-hand experiences or observations of emerging technology integration in educational settings. Both males (35) and females (22) share a common perception of technology integration, contributing to a comprehensive understanding of their experiences.

Perceived Benefits: Respondents, largely educators, express beliefs in the positive impacts of emerging technologies. These include improvements in student learning (47.4%) and increased accessibility to education (55.3%). Additionally, respondents see personalized learning (39.5%) and cost-effectiveness (39.5%) as significant benefits.

Perception of Highly Skilled Professionals: The dataset may not fully capture the viewpoints of highly skilled professionals in the education sector, hinting at a potential limitation in the study's scope and the need for more targeted investigation into this specific group.

Impact of COVID-19

- **Acceleration:** A majority (30 out of 57) of respondents acknowledge that the COVID-19 pandemic has accelerated the integration of emerging technologies in education. This suggests a widespread recognition of the pandemic's transformative impact on teaching methods and technology adoption.

Conclusion

Students in impoverished rural communities have been severely affected by the issue surrounding the pandemic's emergency switch to online learning and remote teaching. Poor internet connectivity has been a major problem that affects academic staff and students alike. The survey shows more male than female respondents, with most having master's degrees. Educators largely believe in the positive impact of technology on student learning, accessibility, personalized learning, and cost-effectiveness. However, there's a need to better understand perspectives of highly skilled professionals in education. The majority agrees that the pandemic has accelerated the use of these technologies, but opinions on their effectiveness vary. This emphasizes how important it is to have ongoing public-private collaborations in order to provide a long-term solution for internet connectivity in these areas. Furthermore, the adaptation of evaluation techniques has become a critical issue, highlighting the necessity for deliberate modifications as opposed to a one-size-fits-all strategy based on conventional face-to-face models. Differentiated professional development for educators is clearly necessary to properly handle these difficulties. The gap in digital pedagogies should be closed, digital skills should be improved, and efficient e-assessment techniques should be supported.

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FACTORS INFLUENCING AWARENESS AND UTILIZATION OF ELECTRONICS INFORMATION RESOURCES AMONG MEDICAL STUDENTS: A MULTIFACETED ANALYSIS

Sujata Tiwari*
Dr. Deepak Kumar Shrivastava**

ABSTRACT

This study explores the various factors influencing the awareness and utilisation of electronic information resources among medical students. Given the growing dependence of the healthcare industry on technology, it is critical to comprehend the factors influencing how aspiring healthcare professionals will utilise electronic resources. We examined socio-demographic factors, technological proficiency, educational environment, and personal attitudes towards electronic information resources through a multifaceted analysis. Using a mixed-methods approach, the study observed how medical students sought out information and collected data using surveys, interviews, and observations. Findings revealed that factors such as age, prior experience with technology, availability of resources, and perceived usefulness significantly influenced awareness and utilisation patterns. In this study, curriculum planners, educators, and policymakers gain valuable insights into how to enhance the integration of electronic information resources into medical education, thus increasing the quality of healthcare.

KEYWORDS: *Electronic Information Resources, Academic Performance, Information Retrieval Skills.*

Introduction

Throughout the medical field, technological advancements have revolutionized access to, sharing of, and utilization of information. Online databases, e-journals, and electronic textbooks have become integral parts of medical education. Thanks to the internet, medical students can now access a multitude of electronic knowledge resources from anywhere at any time. Despite this, medical students have differing levels of awareness and utilization of these resources. This paper aims to analyse the multifaceted factors influencing the awareness and utilisation of electronic information resources among medical students. One of the important factors which based on primarily that contribute to the awareness and utilisation of electronic information resources among medical students is the availability and accessibility of these resources. Medical students now have access to a wealth of electronic information resources at any time and from any location thanks to the internet. A study by Cambria and Weng (2018) found that the availability of electronic resources has increased the usage of these resources by medical students. Moreover, the ease of access to these resources has also been linked to increased utilization among medical students (Kutner et al., 2017). The technology skills and proficiency of medical students also play a role in influencing their awareness of and use of electronic information resources. As digital natives, medical students are generally tech-savvy and comfortable using electronic resources (Boumaraf et al., 2018). However, studies have shown that some students lack the necessary skills to effectively utilize these resources (Zhang et al., 2019). This emphasizes how medical students' awareness of and use of electronic information resources can be positively impacted by training and assistance to improve their technological competency. Furthermore, medical students' understanding of

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and use of electronic information resources is greatly influenced by the curriculum and instructional strategies. A study by Chen and Wu (2020) found that incorporating electronic resources in the curriculum and providing hands-on training during classes resulted in a significant increase in the utilization of these resources among medical students. Similarly, traditional teaching methods, such as lectures and textbooks, are less effective in promoting awareness and utilization of electronic resources (Kutner et al., 2017). Consequently, the employment of interactive teaching techniques and the integration of electronic resources into the curriculum can have a favourable effect on how often medical students use these resources. Furthermore, medical students' attitudes and perceptions regarding electronic information resources have an impact on their awareness and use of these tools. A study by Alnajjar et al. (2019) found that students who perceived electronic resources as useful and essential for their studies had a higher awareness and utilization of these resources. Conversely, students who felt negatively about these resources were less inclined to make use of them. This emphasizes how crucial it is to instill in medical students a favourable attitude toward electronic resources, which can be done by providing them with the right instruction and training. Lastly, one important element affecting medical students' awareness and use of electronic information resources is their cost. While some universities provide access to these resources for free, others may charge a fee, which can be a deterrent for students from low-income backgrounds (Chen and Wu, 2020). The price of electronics and internet connection can also have an impact on how often medical students use these services. Therefore, in order to encourage students' use of electronic resources, universities and other organizations should think about offering free access to these materials.

Statement of the Problem

The use of electronic information resources has grown in significance for medical education and research in the current digital era. However, medical students do not seem to be aware of or fully use these tools despite their availability. This is a serious issue since it makes it more difficult for them to stay current with the rapidly changing medical sector and could have an impact on the calibre of their training and future practice. To better comprehend this problem, this paper will investigate the elements impacting medical students' awareness of and use of electronic information resources, as well as offer a comprehensive analysis.

Purpose of the Study

to investigate the different elements that affect medical students' awareness of and use of electronic information resources. Medical students must be aware of and proficient in using electronic information resources for their education and future practice, given the growing use of technology in the healthcare industry. This comprehensive research will offer a thorough grasp of the several elements that could affect students' awareness and use of these resources. Through the identification of these elements, suitable interventions can be devised to encourage medical students to utilize electronic information resources efficiently.

Significance of the Study

The study investigates the variables affecting medical students' awareness of and use of electronic information resources. The growing significance of these resources in the medical area can be attributed to digital platforms and technical breakthroughs. Comprehending these variables is essential for medical education and training since their utilization can have a substantial influence on patient treatment. Policymakers and healthcare organizations can also use the findings to inform their decision-making when allocating funds for these resources. The study closes a research gap and adds to the body of knowledge on information literacy in the medical industry.

Research Questions

- What are the main determinants of medical students' knowledge of electronic health resources?
- How beneficial do medical students think electronic information resources are for their needs in the classroom and in the clinical needs?
- What are the obstacles that prevent students of medicine from using computerized databases?
- How do medical students' traits impact their knowledge of and use of electronic information resources?
- What tactics can be used to raise the knowledge of and use of electronic information resources among medical students?

Objectives

- To identify the current level of awareness and utilization of electronic information resources among medical students.
- To determine the factors that influence the awareness and utilization of electronic information resources among medical students.
- To examine the relationship between the availability of electronic information resources and their utilization among medical students.
- To analyse the impact of digital literacy on the awareness and utilization of electronic information resources among medical students.
- To explore the attitudes and perceptions of medical students towards the use of electronic information resources in their education and research.

Hypothesis

- There is a significant difference in the level of awareness and utilization of electronic information resources among medical students based on their year of study.
- The availability of electronic information resources has a positive correlation with their utilization among medical students.
- The level of digital literacy among medical students significantly influences their awareness and utilization of electronic information resources.
- Medical students who have a positive attitude towards the use of electronic information resources are more likely to utilize them in their education and research.
- There is a significant difference in the attitudes and perceptions towards the use of electronic information resources among medical students from different cultural backgrounds.

Literature Reviews

- A study conducted by Srivastava et al. (2017) showed that 91.5% of medical students were aware of electronic resources, and their awareness was positively correlated with their attitude towards them. These studies highlight the importance of creating awareness and positive attitudes towards electronic resources among medical students.
- A study by Sahu et al. (2018) in India showed that the lack of access to electronic resources was a major barrier to their utilization among medical students. The study found that only 33% of the students had access to these resources, and many of them had to rely on their devices.
- Another study by Vishavakarma et al. (2019) revealed that the lack of electronic resources in medical colleges was a major hindrance to their utilization among students. These studies emphasize the need for increased availability and accessibility of electronic resources in medical institutions.
- A study by Jaiswal et al. (2015) in India showed that medical students perceived electronic resources to be useful in their studies and clinical practice. However, they also reported that the lack of computer skills and technical support made it difficult for them to use these resources effectively.
- A study conducted by Kaur et al. (2018) revealed that female students had a higher level of awareness and utilization of electronic resources compared to male students. These studies suggest that demographic factors should be considered while designing strategies to promote the utilization of electronic resources among medical students.
- A study by Singh et al. (2019) showed that medical students were more likely to use electronic resources if their peers and faculty members encouraged and promoted their usage.
- The advancement of technology has made electronic resources more accessible and efficient. A study conducted by Al Anazi et al. (2018) found that medical students who were more technologically savvy were more likely to use EIRs compared to their less tech-savvy counterparts.

- A study by Al-Adawi et al. (2018) found that medical students were more likely to use electronic resources if they had easy access to them. Lack of availability and accessibility can hinder the utilisation of electronic resources.
- A study by Samarakoon et al. (2018) found that medical students with higher information literacy skills were more likely to use electronic resources compared to those with lower skills.
- A study by Abdullahi and Adeyoyin (2019) found that medical students were more likely to use EIRs if they perceived them to be useful in their studies and research.
- A study by Adeleke et al. (2019) found that medical students were more likely to use electronic resources if their peers were also utilizing them.

Research Methodology

Data Collection

To study the factors impacting the advertence and utilisation of electronic information resources among medical students, a mixed-methods investigation approach was used. The investigation involved both quantitative and qualitative data collection.

Quantitative

A survey questionnaire was administered to a sample of medical students. The questionnaire was comprised of multiple-choice and Likert scale questions to gather quantitative data on factors such as advertence, utilization, satisfaction, and barriers to using electronic information resources.

Qualitative

Focus groups and in-depth interviews with a selection of medical students were conducted. The underlying causes and experiences of the students, as well as the variables impacting awareness and use, may all be more thoroughly investigated thanks to these qualitative methodologies.

Data Analysis

Data gathered from the survey was analysed using descriptive statistics. Distributions of percentages and frequencies were used to assess the demographic data. The means of the scores for each question were determined to examine the awareness and usage patterns of electronic information resources. To compare the mean scores of male and female students, a t-test was also performed. A Likert scale was used to assess the factors impacting use, and mean scores were determined for each element. To compare the mean scores between academic years, a one-way ANOVA was employed.

Sampling Techniques

This study's sampling strategy included non-probability and probability sampling techniques. First, medical students from different medical colleges were chosen using the simple random sampling technique. This technique increases the sample's representativeness by guaranteeing that every student has an equal probability of being chosen. Second, study participants who were willing to participate and had prior experience with electronic resources were chosen through the technique of purposive sampling. Using this method, a sample of medical students with greater knowledge and comprehension of electronic information resources was obtained.

Findings

Five key findings have been identified.

- One of the main factors impacting medical students' awareness and use of Internet resources is accessibility. In 2017, a study found that while just 25% of medical students reported having access to sufficient resources, over 68% of them reported having access to the electronic resources they needed for their research.
- Medical students' inadequate awareness of and use of electronic resources is partly caused by poor IT abilities. According to the same study, almost 60% of medical students lacked basic IT abilities, which can make it difficult for them to access and use electronic resources.
- One of the main causes of medical students' low awareness and use of electronic resources is also their lack of expertise. Just 40% of medical students reported knowing the basics of the electronic resources that are available, and only 15% reported having a thorough awareness, according to different research.

- Another factor that may affect medical students' awareness of and use of Internet resources is time restrictions. As per the survey conducted among medical students, more than half of them said they did not have enough time to access and use the electronic resources that were available, and another 40% said they had trouble making time for research.
- Another element influencing medical students' awareness of and use of electronic resources is their familiarity with the library system. According to the survey, about 70% of medical students did not know how to use the library system, which suggests that they do not have the necessary skills to use electronic resources.

Conclusion

Addressing the multifaceted issue of awareness and utilization of electronic information resources among medical students requires a comprehensive approach that considers individual characteristics, access to resources, perceived usefulness, and training and education. By addressing these factors, educators and institutions can effectively promote the integration of these valuable resources into medical education, ultimately enhancing the quality of education and preparing students for their future roles as healthcare professionals. A variety of factors affect students of medical science regarding awareness and use of electronic information resources. Several important aspects influence the use of these resources, including cost, technological proficiency, curriculum and instructional techniques, attitudes and perceptions, and availability and accessibility of these resources.

Recommendations

The following recommendations are presented to encourage medical students to use electronic resources more frequently.

- Medical students must receive specialized instruction on how to use electronic resources. Along with teaching participants how to locate and use resources, this training should cover how to make the most of the knowledge that is already available. Through library training sessions, increase exposure to electronic resources.
- Medical students should be exposed to more electronic resources during library training sessions. Students should leave these sessions with a general understanding of the resources at their disposal as well as guidance on how to use them efficiently. Educate people about the advantages of using electronic resources.
- It is important to inform medical students about the advantages of electronic resources, including improved clinical decision-making abilities and higher efficiency.
- Enhance the standard of digital resources.

Future Research

- There is still much need for research in this area, even though this paper has outlined some of the key elements influencing medical students' awareness of and use of Internet resources. The effect of social and cultural factors on the usage of electronic resources is one area that needs more research. Cultural and societal variables, including linguistic obstacles, gender norms, and technology limitations, can have a big impact on medical students' awareness of and use of Internet resources. Thus, to encourage the use of electronic resources, future studies could concentrate on comprehending these cultural and social factors and how to address them.
- Future studies should also investigate how effective electronic resources are compared to traditional print resources. Research contrasting the efficacy of electronic resources with traditional print resources is still lacking, despite the growing popularity of electronic resources. These studies may yield important information about how electronic resources affect medical education and how best to incorporate them into the curriculum.

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UPI TRANSFORMING THE MICROCREDIT SECTOR

Tina Bajaj*

ABSTRACT

The RBI through its directive dated 4th September 2023 has allowed a UPI pre sanctioned credit line of a bank to be used as a funding account for making payments via UPI mode. National Payments Corporation of India (NPCI) launched the Unified Payments Interface (UPI) line of credit that will revolutionize access to microcredit. This initiative empowers underserved individuals by providing a technology-based alternative source of credit with low interest rates, flexible repayments, and real-time transaction tracking. NPCI UPI Credit Line is set to revolutionize microcredit disbursement by promoting financial inclusion and ensuring timely repayments. This innovative platform is a game changer that provides fast and secure access to microcredit and overcomes financial barriers.

KEYWORDS: NPCI, Credit Line, UPI Mode, Microcredit, Flexible Repayments.

Introduction

Unified Payments Interface (UPI) is a real-time fund transfer system developed by the National Payments Corporation of India (NPCI), an organization set up by the Reserve Bank of India (RBI) and the Indian Banks' Association (IBA). The system was launched in 2016 and has seen significant growth in usage since then.

Microcredit is a method of lending very small sums to individuals to start or expand a small business. With the UPI Credit Limit, NPCI has made microcredit more accessible to people who need small amounts for daily expenses or emergencies. This feature allows these people to easily access credit of up to Rs 100,000, which can be used for various purposes such as purchasing durable goods or availing services such as medical needs or training fees. It is an innovative way for rural or poor households who cannot access traditional banking channels due to a lack of proper documents or other bank loan requirements.

The National Payments Corporation of India (NPCI) has taken an important step to improve access to microcredit by introducing the Unified Payments Interface (UPI) credit limit. This groundbreaking initiative is designed to empower individuals who have historically been excluded from the conventional banking system due to financial difficulties. UPI Credit Line uses technology to provide individuals with an efficient and accessible way to manage their finances and access credit. Unlike conventional banks with cumbersome processes, NPCI's UPI line of credit provides an alternative source of credit that allows people to access funds quickly and securely. It has features tailored to the needs of small borrowers, such as low interest rates, flexible repayments, real-time transaction tracking, and prompt payment alerts. This user-friendly technology-driven platform is poised to revolutionize micro-lending by removing the barriers that prevented many from accessing credit in the past. With the launch of this innovative platform, NPCI is promoting greater financial inclusion, especially for those who are economically marginalized. The UPI line of credit promises to change the landscape of microcredit availability and ensure that borrowers can easily achieve their financial goals without the hassles associated with traditional sources of credit. NPCI's forward-looking move opens new horizons for individuals who want to access microcredit quickly and safely, ultimately increasing financial empowerment.

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Literature Review

Vishal Sood Poorva Ranjan "Financial Innovation in India: An Empirical Study" has revealed reveals that Taxes, regulation, information asymmetries, transaction costs, and moral hazard exist in the real world making the market imperfect. This affects the financial instruments and makes them obsolete as the new requirements arise. Without Financial innovations new financial process and products will not emerge in the market. This article aims at studying the impact of GDP, Growth rate and inflation rate on financial innovation in India

Shailesh Rastogi* , Chetan Panse, Arpita Sharma, Venkata Mrudula Bhimavarapu 2021 "Unified Payment Interface (UPI): A Digital Innovation and Its Impact on Financial Inclusion and Economic Development" in Universal Journal of Accounting and Finance 9(3): 518-530, 2021. This paper aimed at exploring UPI (Unified Payment Interface) is a digital innovation with an instant payment option developed indigenously in India UPI works on a technology known as Open API (Application Programming Interface). API is a type of interface where parties can be linked with each other easily. If there is no entry restriction on the users of an interface, it is called Open-API

Arvind Chaudhari and Deepak Chaudhari (2019) an attempt was made "To Study the Consumer Satisfaction on UPI (Unified Payments Interface) with Special Reference to Hyderabad and Suburbs". They studied the perception of the customers towards UPI services and traditional services and the impact of the UPI services in customer satisfaction.

Research Methodology

The study is descriptive and is based on primary and secondary data

- Primary data is collected from about 120 users of UPI amidst different categories by structured questionnaire. Around 100 consumers and 20 merchants were reached to hit the survey goals.
- Secondary data is collected from various sources such as NPCL websites and News websites.
- Percentage method is used to check the perceptual impact of the UPI on the different set of the consumers. The survey done was done in the Jaipur district.

Findings and Observations

- UPI transactions in the month of August 2023 crossed 10 billion, with 473 banks currently live on UPI.. The number of UPI transactions in July was 9.96 billion (996.4 crore) and 9.33 billion in June, PTI reported.
- Presently it handles 75% of the retail digital payments volume in India. The UPI system has been leveraged to develop products and features aligned to India's payments digitisation goals.
- The UPI Penetration rate for the bottom 40% (Average annual household income: INR 1.10 lakh) is 56%, with a rate of only about 26 per cent in the poorest income group, as per the SIDE Report, 2023.
- Out of the poll 60% of the participants indicated a significant impact of UPI on the credit market. The banks planning for the credit line on UPI product may initially look at their Existing-To-Bank (ETB) customers, and later post learning curve enlarge the net to a larger audience i.e. the New-To-Bank (NTB) customers
- If credit lines gets opened for the commercial sector, the credit line on UPI is expected to have a significant impact on the B2B space, particularly the Micro Small and Medium Enterprises (MSMEs). These businesses contribute 30% to the GDP but often face a shortfall in the supply of credit

Perceptual Findings on the Basis of the Survey Conducted

- UPI-based lending will make banks and Non-Banking Financial Companies (NBFCs) more efficient, enabling them to provide credit in a quicker and more economical way to borrowers
- 30 bankers survey- 60% says it will increase banking penetration
- 20 vegetable vendors were surveyed and of them 80% said that they don't have much access to the credit cards and this facility will enhance their utility considering their literacy level
- Out of 30 households – 80% said they would utilise the credit line for purchasing the new TV and expensive items via EMI mode

- Out of 20 youth surveyed- 90% said they would invest in stocks and MFs
- Out 20 merchants surveyed- 60% said it will somehow affect or may not affect since theu POS machines and 40 % of the favour

Conclusion

- NPCI UPI credit limit and other 3 latest important features - is a revolutionary innovation to promote financial inclusion in India. Borrowers only need an Aadhar card and a valid bank account, eliminating the red tape associated with traditional loans. NPCI's UPI credit line is an important step towards microcredit availability and financial inclusion in India.
- NPCI UPI Credit Limit has introduced an innovative way of providing micro credit. Due to digitization and faster processing, it has been a big success in the micro-finance market in India. This platform offers easy access to instant credit but also encourages individuals and merchants to use digital services for payment. In short, with this service, India is rapidly moving towards a more efficient and secure digital economy where microcredit is needed quickly and conveniently.

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A BRIEF STUDY ON FUTURE OF SOCIAL MEDIA WITH REFERENCE TO FACEBOOK

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Dr. Bijay Krishna Bhattacharya***

ABSTRACT

This study examines social media's future with a particular emphasis on Facebook. Motivated by the dynamic nature of both technology and society, this research explores the variables influencing Facebook's future, such as new trends, user expectations, and possible obstacles. The effect of new social media platforms on Facebook is investigated in this study. By examining the ways in which various platforms impact Facebook, the research seeks to provide light on the changing dynamics and difficulties that the well-known social network faces. This study utilizes quantitative methods for data collection. Facebook's user ratings are slightly lower than other platforms, suggesting more effort is needed for user well-being, according to a study it provides valuable insights into the changing landscape of social media and the challenges facing Facebook.

KEYWORDS: Facebook, Technology, Various Platform.

Introduction

In today's interconnected world, social media has become an essential tool for communication, information dissemination and community building. With its global reach and diverse user base, Facebook stands out as a visible force in the social media landscape. However, the ever-evolving nature of technology and the changing dynamics of user preferences require a critical examination of Facebook and future developments. This study looks at the multifaceted aspects and current position of Facebook, as well as its strengths, challenges and potential growth directions.

Facebook's continued popularity can be attributed to its ability to connect people around the world, facilitating meaningful communication and fostering a sense of belonging. The platform's user-friendly interface and rich features, including its news feed, groups and marketplace, have solidified its position as a hub for personal and professional connections. Despite its undeniable influence, Facebook faces a number of challenges that threaten its continued dominance in social media. Decline in user engagement and growth Facebook has faced a steady decline in user engagement and growth, especially among younger demographics. This is mainly due to the rise of alternative social media platforms such as Snapchat which have attracted the attention of younger users with their more innovative and engaging features. Facebook's user base is also aging, and more and more older users are less active on the platform. The rise of alternative platforms like Snapchat have captured the attention of younger demographics and pose a serious threat to Facebook and its appeal among its core users. Privacy issues and data security breaches Facebook has been plagued by several privacy scandals and data security breaches that have significantly weakened users' trust in the platform. In particular, the Cambridge Analytical scandal revealed how data from Facebook users was improperly collected and

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used for political advertising, raising serious concerns about the platform and its privacy practices. These cases have increased scrutiny and regulatory pressure on Facebook and are calling for stricter privacy measures. Spread of misinformation and disinformation Facebook has been criticized for its role in spreading false information and misinformation, which has contributed to the polarization of society and the loss of trust in institutions. The platform and its algorithms have been found to facilitate the spread of sensational and emotionally charged content, while making it difficult to detect misinformation and verify facts. Facebook has taken steps to address these issues, but it remains a major challenge for the platform. Commercialization challenges and reliance on advertising Facebook's main source of revenue is advertising, which makes it vulnerable to changes in the advertising market and increased competition from other online platforms. The company has experimented with new monetization strategies such as in-app purchases and subscription services, but advertising remains its dominant source of revenue. Evolving user preferences and the rise of niche platforms User preferences are constantly changing, and Facebook's challenge is to keep up with these changes and adapt its platform accordingly. The rise of specialized social media platforms that serve specific interests and communities suggests a possible shift away from general-purpose social media platforms such as Facebook. To stay relevant, Facebook needs to find ways to create more personalized and targeted experiences for its users. Regulatory oversight and potential failure Facebook has faced increased regulatory scrutiny around the world, with governments concerned about Facebook's market power and potential anti-competitive practices. There is a growing belief that Facebook should be broken up into smaller, more manageable companies, reduce its dominance and promote competition in the social media market. Ethical considerations and social implications Facebook's impact on society is multifaceted and complex, which raises several ethical considerations.

In addition to internal changes, Facebook must also consider the broader context of the social media. The growing popularity of niche and niche interest and community platforms suggests a possible shift away from general purpose social media platforms like Facebook. To adapt to this trend, Facebook could explore strategies to create more personalized and targeted experiences for its users that meet their unique interests and needs. The growing emphasis on social commerce and the integration of social media platforms into electronic ecosystems provide opportunities for Facebook to increase its revenue and improve its value proposition. By leveraging its vast network of users and understanding their purchasing behaviour, Facebook can introduce innovative e-commerce features that seamlessly integrate with the existing platform.

Facebook's lasting appeal stems from its capacity to cross geographic boundaries and create a global network of relationships across various cultures and continents. It has made communication more accessible and democratic by enabling people to express their ideas, feelings, and experiences to a wide audience. The platform has established itself as a focal point for both personal and professional interactions thanks to its intuitive UI and wide range of features, which include the News Feed, Groups, and Marketplace.

But despite Facebook's successes, there is a growing sense of disquiet due to the knowledge that this massive digital company has a lot of power that can be used for both good and bad. Facebook's reputation has been damaged by worries about data security, privacy, and the dissemination of false information. This has led to requests for tighter regulatory supervision and a decline in user confidence.

Literature Review

S. No.	Title of Research Paper	Author	Description	Outcomes	Recommendations
1	The Future of Social Media: Less Social, More Transactional	Brian X. Chen	This article from The New York Times explores the shift towards "transactional" social media, where content from brands and influencers takes precedence over personal updates.	Facebook and other platforms prioritize algorithms that favor ad revenue, leading to less organic reach for personal content. Users report concerns about echo chambers and negative impacts on mental health.	Focus on smaller, community-driven platforms. Prioritize privacy and user control over algorithms. Develop more ethical content moderation practices.

2	The Facebook Files and the Future of Social Media	Benton Institute for Broadband & Society	This report analyzes the "Facebook Files" leak, revealing internal research on the negative impacts of Facebook, particularly Instagram, on teen mental health.	Internal research at Facebook highlights negative impacts on teen girls' body image and mental health, but the company prioritizes growth and engagement over user well-being.	Increased transparency and accountability from platforms. Stronger regulations on harmful content and data protection. Support for youth mental health and digital literacy initiatives.
3	Facebook and the Metaverse: Reimagining Social Connection	Stanford University	Investigates Facebook's ambitions in the metaverse and its potential implications for social interaction, digital identity, and user privacy.	Unforeseen challenges regarding data security, ethical implications of virtual interactions, and potential for exclusion and discrimination.	Prioritize user agency and data security in the metaverse, encourage inclusivity and accessibility, and ensure ethical governance of virtual experiences.
4	Advances in Social Media Research: Past, Present and Future	Patricia García-Castaño, Carlos A. Davis, et al.	This article discusses the evolution of social media research, highlighting areas like user engagement, political communication, and online communities.	Social media research continues to evolve, addressing the multifaceted impacts of these platforms on individuals, societies, and politics.	Continued interdisciplinary research on the complex social, psychological, and political implications of social media. Development of ethical research practices and data collection methods.
5	The Future of Social Media: Rethinking Connections in a Networked World	Boyd danah	This book by a prominent social media researcher explores the changing nature of online connections and identities in the digital age.	Social media has fundamentally reshaped how we connect, communicate, and form communities. We need to critically examine the implications of these changes and work towards a more equitable and ethical online future.	Promote digital literacy and critical thinking skills to navigate the complex landscapes of social media. Support initiatives for online civic engagement and responsible use of technology. Foster diverse and inclusive online communities.

Research Gap

- Limited insight into the specific factors driving Facebook user decline, necessitating further investigation into demographic shifts, platform-specific issues, and emerging trends
- Insufficient research on privacy-preserving technologies and ethical data collection methods in social media contexts.
- Underexplored potential of alternative, community-driven social media models and their long-term viability.

Research Objectives

- Analyse the factors influencing Facebook's future.
- Investigate the impact of new social media platforms on Facebook.
- Provide insights into the changing landscape of social media and Facebook's future.

Hypotheses

H₁: Higher adoption rates and positive user engagement trends on emerging social media platforms will correlate with a decline in user ratings on Facebook, indicating a potential shift in user preferences towards newer platforms.

H₀: There is no significant relationship between the adoption of new social media platforms and changes in user ratings on Facebook, suggesting that Facebook's user base remains stable and unaffected by the emergence of new platforms.

Methodology

This study looks into the varying experiences and viewpoints of Facebook users in order to investigate the possible future of the social media network. To obtain a deeper knowledge of the underlying values, motives, and concerns that influence user behaviour and preferences, a qualitative method is utilized.

Sources of Data Collection

- The data for this study was collected through an online self-administered questionnaire distributed via Google Forms.
- The questionnaire was accessible to respondents through distribution method, e.g., email invitations, social media posts, embedded links on relevant websites.

Data Analysis Tool

- Statistical software: Tools like SPSS used to analyse quantitative data from questionnaires in google form.

Findings

- The data covers a wide range of ages from 21 to 64, suggesting a potentially diverse population.
- The most frequent ages appear to be 22, 23, and 25, suggesting a possible concentration around these age groups.
- The research findings reveal a gender distribution where 44% of participants identify as male, while 56% represent female.
- 72%, actively engage with Facebook, highlighting the platform's widespread popularity and influence. Conversely, the 28% who abstain from using Facebook.
- The largest segment, constituting 33.3%, emphasizes the platform's role in fostering connections with friends and family. Additionally, 37.5% engage with Facebook primarily for entertainment, showcasing its significance as a source of leisure. Meanwhile, 12.5% cite staying informed as a key reason, and 16.7% attribute their usage to other diverse purposes, highlighting the platform's versatility in meeting various user needs.
- 37.5% expressing a desire for improved privacy measures on Facebook, indicating growing concerns in this domain. Another 37.5% anticipate the platform to introduce more innovative features, highlighting user expectations for ongoing technological advancements. Additionally, 25% underscore the importance of Facebook focusing on user well-being, emphasizing a collective aspiration for a more holistic and responsible digital experience.
- All respondents affirmatively use other social media platforms, indicating a universal presence on diverse digital networks. This unanimous utilization underscores the pervasive nature of social media engagement among the surveyed individuals, highlighting the need for comprehensive research and analysis beyond a singular platform.
- The majority of respondents, comprising 54.2%, indicate a perception of Facebook as slightly lower compared to other social media platforms they use, suggesting a prevailing sense of preference for alternative platforms. Meanwhile, 29.2% express varying degrees of neutrality or higher ratings, with 8.3% finding Facebook much higher and 12.5% slightly higher, while 8.3% rate it much lower, indicating diverse perspectives on the platform's comparative appeal.
- The data reveals that a notable 87.5% of respondents do not actively participate in groups or communities on Facebook, suggesting a predominant trend of limited engagement in these interactive features. Conversely, 12.5% indicate active participation, showcasing a smaller but present segment that values and utilizes Facebook's group and community features.

Table 1: Response % of the Survey

Dimensions	Percentage	
Age	52% below 25	48% above 25
Gender	56% Male	44% Female
Facebook user	72% yes	28% no
Participation in groups or communities	87.5% yes	12.5% no

Discussion

The collected responses offer valuable insights into the current landscape of social media, specifically focusing on user perceptions and behaviours regarding Facebook. The majority of respondents using other social media platforms, coupled with a significant portion rating Facebook slightly lower compared to alternatives, suggests a dynamic and competitive digital environment. These findings emphasize the need for continuous innovation and improvement to meet evolving user expectations.

The preferences for improved privacy among 37.5% of respondent's underscore growing concerns in this area, signalling an opportunity for Facebook to prioritize and enhance its privacy features. The desire for more innovative features, shared by an equal percentage of respondents, indicates an expectation for continued technological advancements to keep pace with changing user needs and preferences.

The low participation rate (12.5%) in Facebook groups or communities suggests potential challenges in fostering and maintaining active online communities within the platform. Addressing this aspect could be crucial for Facebook to enhance user engagement and create a more interactive and community-driven experience.

The study also reveals the multifaceted reasons users turn to Facebook, ranging from connecting with friends and family to seeking entertainment or staying informed. Understanding these diverse motivations is pivotal for Facebook's strategic planning and content development to cater to a broad range of user interests.

Conclusion

In conclusion, this research delves into the future trajectory of social media, particularly focusing on Facebook, driven by the dynamic interplay between technology and societal trends. The study, rooted in quantitative methods and user responses, illuminates several critical aspects that warrant consideration for the evolution of Facebook and the broader social media landscape.

The findings reveal a nuanced user perspective, where a majority rates Facebook slightly lower compared to other platforms. This signals a call for heightened efforts from Facebook to address user well-being, privacy concerns, and innovation, as evidenced by the identified desires for improved privacy (37.5%) and more innovative features (37.5%). These insights emphasize the imperative for Facebook to adapt and innovate continuously to meet the evolving expectations of its user base.

The low participation rate in Facebook groups or communities (12.5%) signifies potential challenges in fostering vibrant and engaged online communities within the platform. Recognizing and addressing these challenges could be instrumental in shaping the future trajectory of Facebook, aligning it with the growing importance users place on community-driven interactions in the social media landscape.

Furthermore, the study underscores the need for Facebook to navigate the impact of new social media platforms, acknowledging the changing dynamics and challenges posed by emerging competitors. Adapting to these shifts and proactively addressing user concerns will be pivotal for Facebook to maintain its relevance and leadership in the ever-evolving social media ecosystem.

In essence, this research contributes valuable insights into the intricate relationship between user expectations, platform dynamics, and the future trajectory of Facebook. As the social media landscape continues to evolve, Facebook's ability to respond to user needs, enhance privacy measures, foster community engagement, and embrace innovation will be crucial for its sustained success in the dynamic digital era.

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A Review of Facebook Research in the Social Sciences

14. *Robert E. Wilson¹, Samuel D. Gosling², and Lindsay T. Graham³*

Abstract

This literature review consolidates diverse research on Facebook, examining its effects on user behaviour, motivations, identity, social interactions, and privacy across 412 articles. The study serves as a pivotal resource, presenting a foundational understanding and guiding future research directions in the realm of online social networks.

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Using Facebook for Academic Purposes: Current Literature and Directions for Future Research

16. Lian NiuLian.niu09@gmail.c
17. Volume 56, Issue 8

Abstract

This review underscores the overall positive impact of integrating Facebook into formal education, while emphasizing the need for future research to address challenges, refine methodologies, and focus on in-depth examination and experimental designs to enhance the understanding of its effectiveness.

Are the dead taking over Facebook? A Big Data approach to the future of death online

18. Carl J Öhman¹ ht and David Watson²

Abstract

19. Our projection indicates that by 2100, between 1.4 billion and 4.9 billion profiles of deceased Facebook users may exist, with a majority belonging to non-Western users. We underscore the ethical necessity of moving beyond a solely commercial approach, advocating for a scalable, sustainable, and dignified curation model that addresses the challenges of digital preservation and incorporates diverse stakeholder interests.

20. "But the data is already public": on the ethics of research in Facebook

21. By Michael Zimmer

22. Book The Ethics of Information Technologies

23. Edition1st Edition

24. First Published2017

25. Imprint Routledge

26. Pages13

27. eBook ISBN9781003075011

Facebook's Advantage Over Other Social Media

28. By Thom Tracy

29. Updated May 08, 2023

30. Reviewed by Cierra Murry

31. Fact checked by Vikki Velasquez

Abstract

32. Facebook was launched in a Harvard dormitory in 2004 by Mark Zuckerberg, Eduardo Saverin, Chris Hughes, and Dustin Moskovitz. It became public in 2012.As of 2023, Facebook has three billion active monthly users and a market cap of \$754 billion. As of Q1 2023, Facebook raised \$28 billion in advertising. Facebook is the third most popular app worldwide.



CORPORATE SOCIAL RESPONSIBILITY (CSR) AND SUSTAINABLE DEVELOPMENT

Dr. Satya Narayan Meena*

ABSTRACT

'Corporate Social Responsibility (CSR)' is the new phenomenon in the business world of India. However, it is started in the USA at the beginning of 19th Century. When we talk about the word 'Corporate Social Responsibility (CSR)', the pictures of such situations occurs to our mind in which companies give back to the society as compensation for their activities which degraded the environments of the country. Traditionally, the main objectives of the companies are to maximization of their profits through business or service activities. But in the modern era, the main objectives of companies are to Wealth Maximization instead of Profits Maximization. Achieving the objectives of Wealth Maximization can be ensured under CSR. CSR is also affects the Sustainable Development. India is the first country which has made CSR legally mandatory. Experts believe that this CSR should be linked with the Sustainable Development Goals so that it becomes easier to achieve the goal. CSR decides company's philanthropic policy.

KEYWORDS: *Corporate Social Responsibility, Compensation, Environments, Maximization of Profits and Wealth, Sustainable development, Legally Mandatory, Philanthropic Policy.*

Introduction

It was a prolong demands of 'Corporate Social Responsibility (referred hereafter as CSR) in the India especially after New Industrial Policy-1991 in which private sector was given more importance then public sector as new guidelines of Liberalization, Privatization and Globalization (LPG). The earnings of Public sector are deposited in the Government funds and these funds are being used in the sustainable development of the country. But the public sectors funds are reducing year to year after 1991 and therefore, it has become necessary to collect CSR from Private Sector companies also so that their role in the economic development of the country is significant. And for the purpose, the Government of India has made provisions for CSR in the Company Act, 2013.

The concept of Corporate Social Responsibility and Sustainable Development

American economist and Grinnell College President, is called 'father of CSR.' He published a book on CSR in 1953 in which he advocated for business ethics and responsiveness to societal stakeholders called Social Responsibilities of the Businessman. He connected the responsibility of corporations to society. In CSR, we may include business ethnics including run the business fairly and honestly, improving the conditions of community and environment. ¹

The Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. Sustainable development has two dimensions viz. one, meets the needs of present and two, meets the needs of future generations. Thus, sustainable development is preserving natural systems of the country.

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CSR can be categorized in the four category viz. environment responsibility, human rights responsibility, philanthropic responsibility and economic or finance responsibility. ²

CSR is a just Triple Bottom Line Approach which is used by UNIDO and useful for SMEs in the developing countries. CSR is a means and through which the objectives of economic, environmental and social regeneration can be achieved. Along with this, it is also ensured that there is no deficiency in the competitiveness of the company in this process.

Provisions of Corporate Social Responsibility in the Company Act, 2013

Section of the Companies Act, 2013 has established the Corporate Social Responsibility (CSR) regime in India. Under CSR, companies are required to spend 2 percent of the average of their Net Profits of the last 3 years on CSR activities. CSR applies to companies that have Net Worth of ₹ 500 Core or more, or Annual Turnover of ₹1000 Crore or more, or Net Profit of ₹5 Crore or more.

The 7th Schedule to the Companies Act, 2013 lists the activities that can be undertaken as Corporate Social Responsibility (CSR).

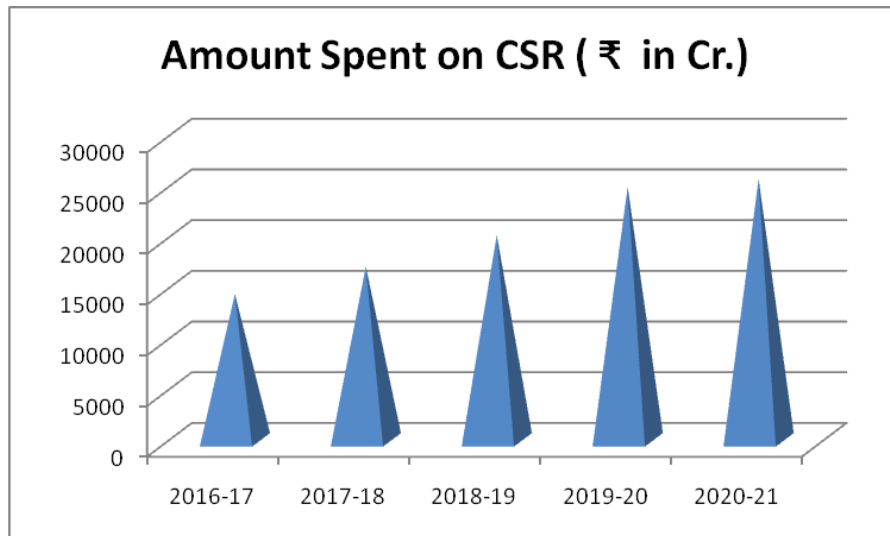
Amount Spent in Corporate Social Responsibility

The CSR spending in the country increase by 18.78 % in FY 2017-18 as compared to the previous year. It fell by 0.66% in FY 2018-19 and further increase by 5.44% in FY 2019-20. Due **Covid-2019**, it fell by 20.51 in FY 2020-21. The Covid-2019 pandemic has made bad effect on the expenditure of the CSR. And for this reason, there was a decrease of CSR to 3.05% only in 2020-21 as the economic activities of the country are struck down and the earnings of the companies adversely effected during the Covid-era. However, it may be noted that the CRS spending increased from ₹14395 in FY 2016-17 to ₹25715 in FY 2020-21. These facts are shown in Table -1:-

**Table 1: CSR Expenditure
During 2016-17 to 2020-21 (₹ in Cr.)**

Year	Amount Spent (₹ in Cr.)	% Change over Previous Year
2016-17	14395	-
2017-18	17098	18.78
2018-19	20197	18.12
2019-20	24955	23.56
2020-21	25715	3.05

Source: National CSR Portal/Ministry of Corporate Affairs



**Chart 1: CSR Expenditure
During 2016-17 to 2020-21
(₹ in Cr.)**

No. of Companies included in CSR

In the year 2016-17, the number of companies spending up to ₹50 Lakh and between ₹1-10 Crores on CSR was ₹17074 and ₹2288 respectively. Although, the number of companies spending up to ₹50 Lakh decreased to ₹13641 in 2020-21 and the main reason behind this is believed to be Covid-2019. However, during the same financial year the number of companies spending ₹1 to 10 Crores on CSR has increased to ₹4040.

This fact is depicted in the Table-02 and Chart-02.

Table 2: Number of Companies in CSR

Year	₹0 to 50 L	₹1-10 Cr.
2016-17	17074	2288
2017-18	18702	2562
2018-19	21986	2898
2019-20	19368	3249
2020-21	13641	4040

Source: National CSR Portal/Ministry of Corporate Affairs

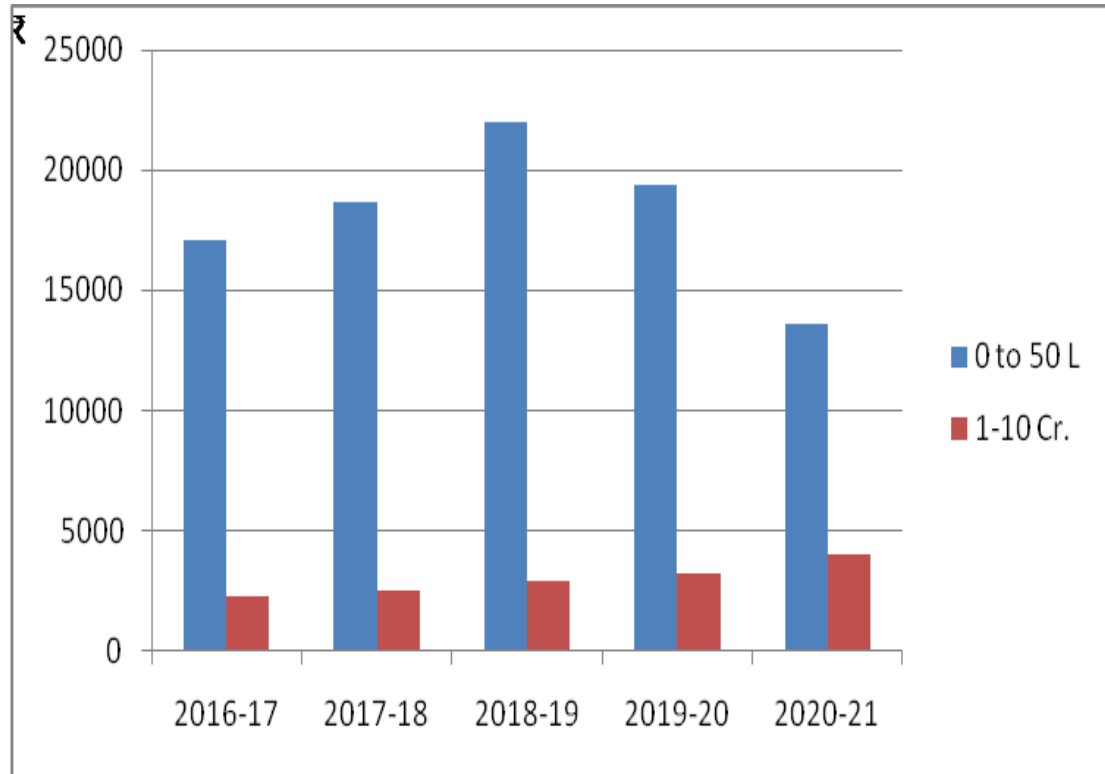
**Chart 2: Number of Companies in CSR****CSR Spent: Selected Development Sector-Wise**

Table 03 depicts the expenditure incurred on CSR in selected development sectors. In selected development areas, education, health, eradication of hunger, malnutrition, poverty, safe drinking water, rural development, animal welfare, environment, conservation of resources, gender equality, women empowerment, old age homes, reduction in inequalities, Prime Minister's National Relief Fund etc. has been included.

The best ever CSR expenditure was made on education in 2016-17. The amount on education was ₹5580 crore. The second place in CSR expenditure was spent on health, eradication of hunger, poverty, malnutrition, pure drinking water and sanitation. ₹3687 crores were spent on these items in the same year.

In the year 2017-18 also, the maximum amount of ₹7282 crore and ₹4270 crore was spent under CSR on education and health, eradication of hunger, poverty, malnutrition, pure drinking water and sanitation respectively.

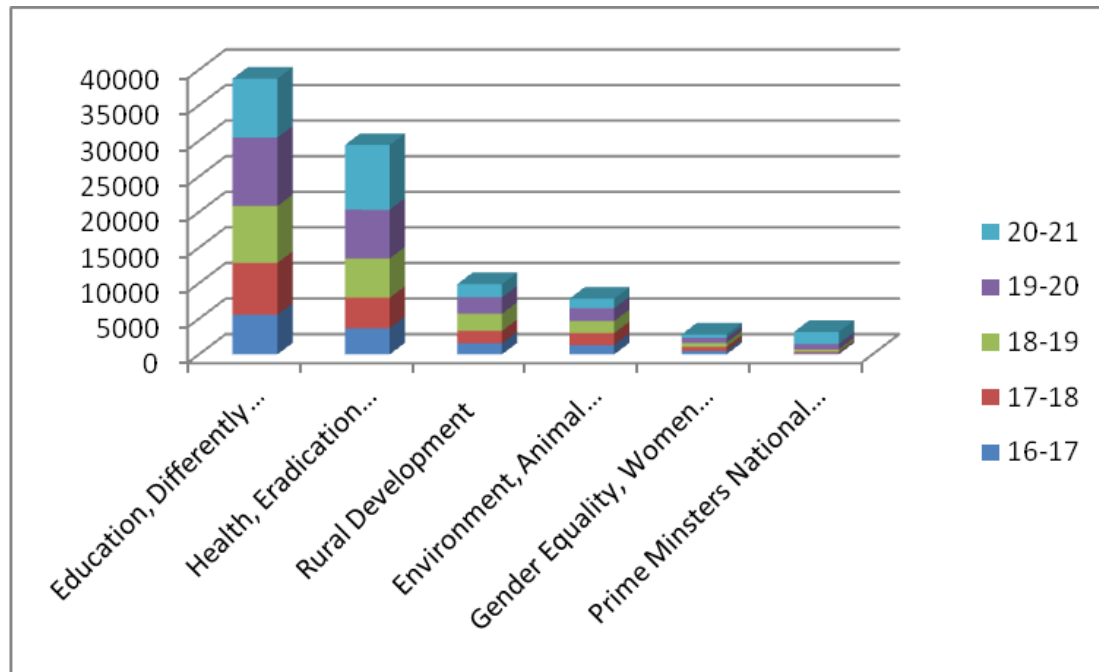
From the year 2016-17 to the the year 2017-18, the expenditure under CSR has been the highest on education, but the year 2020-21, the highest CSR expenditure has been made on health, eradication of hunger, poverty, malnutrition, pure drinking water and sanitation.

Table 3: CSR Spent: Selected Development Sector-Wise
(₹ in Cr.)

Development Sectors	Year	2016-17	2017-18	2018-19	2019-20	2020-21
Education, Differently Abled, Livelihood		5580	7282	7994	9632	8277
Health, Eradication Hunger, Poverty, Malnutrition, Safe Drinking Water, Sanitation		3687	4270	5540	6837	9101
Rural Development		1562	1724	2433	2300	1847
Environment, Animal Welfare, Conservation of Resources (EAC)		1320	1660	1705	1804	1332
Gender Equality, Women Empowerment, Old Age Home, Reducing Inequalities		470	582	573	694	495
Prime Ministers National Relief Fund		159	200	321	797	1679

Source: National CSR Portal/Ministry of Corporate Affairs

Chart 3: CSR Spent: Selected Development Sector-Wise
During 2016-17 to 2020-21
(₹ in Cr.)



CSR Spent: TOP 09 States /UTs

Under CSR, from the year 2016-17 to 2020-21, the maximum amount of Rs. 17162 was spent in Maharashtra, following by Karnataka, where ₹6758 crore was spend under CSR. In the same period, ₹3268 crore was spent under CSR in Rajasthan while ₹3143 crore was spent in Uttar Pradesh, which is the lowest among the selected top 09 States/UTs in the amount received under CSR.

The amount spent under CSR in the country is influenced by education, infrastructure, health, available water, power and government policies. This is the reason why the developed states of the country like Maharashtra, Karnataka, Gujarat, Tamil Nadu etc. get more share in CSR. On the contrary, less developed or backward states like Bihar, Madhya Pradesh, Rajasthan etc. get less share under CSR. In the states where industrial units are established in abundance, it is easier for those states to get more amount under CSR. The first responsibility of the local industrial units is to work for the benefit of the local people.

This fact is depicted in the Table-04 and Chart-04(A) & (B).

Table 4: CSR Spent in Top 09 States/UTs
(₹ in Cr.)

Name of States &UTs /Years	2016-17	2017-18	2018-19	2019-20	2020-21	Total
Maharashtra	2415	2798	3148	3349	3426	17162
Karnataka	875	1145	1252	1448	1265	6758
Gujarat	865	968	1082	984	1444	5891
Tamil Nadu	548	670	877	1072	1146	4901
Andhra Pradesh	744	575	666	710	716	4687
DELHI	460	579	751	829	714	3789
Odisha	326	504	698	717	568	3431
Rajasthan	353	443	595	734	658	3268
Utter Pradesh	321	435	521	578	870	3143

Source: National CSR Portal/Ministry of Corporate Affairs

Chart 4 (A): CSR Spent in Top 09 States/UTs
During 2016-17 to 2020-21
(₹ in Cr.)

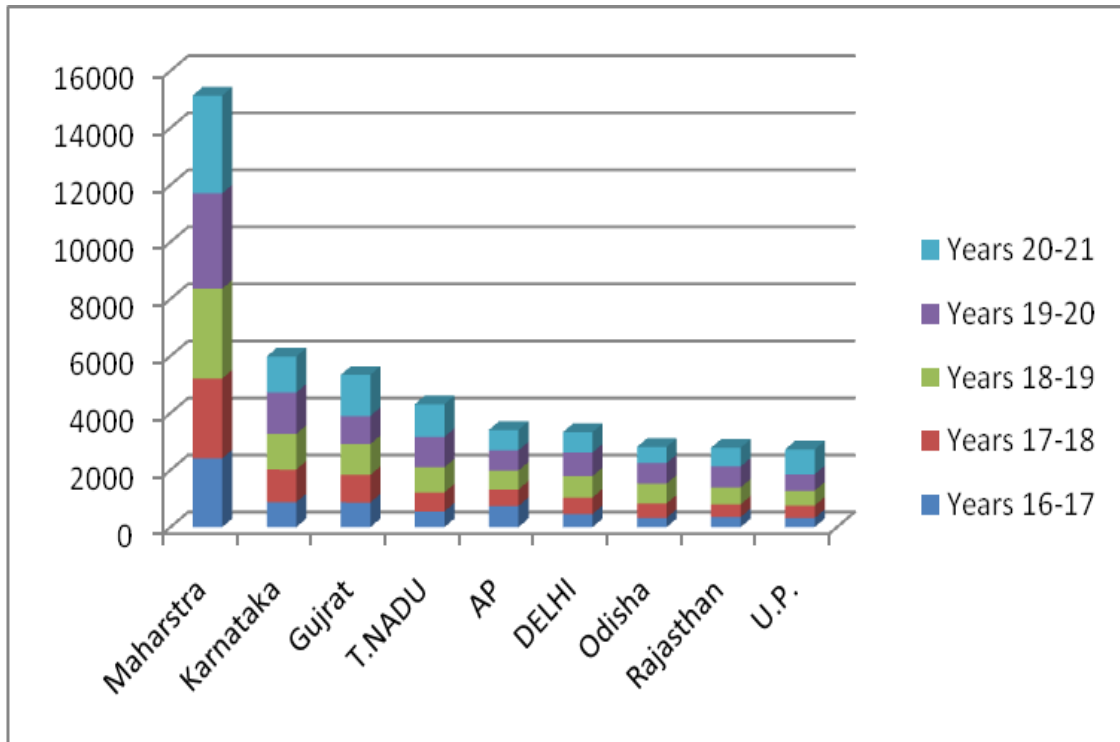
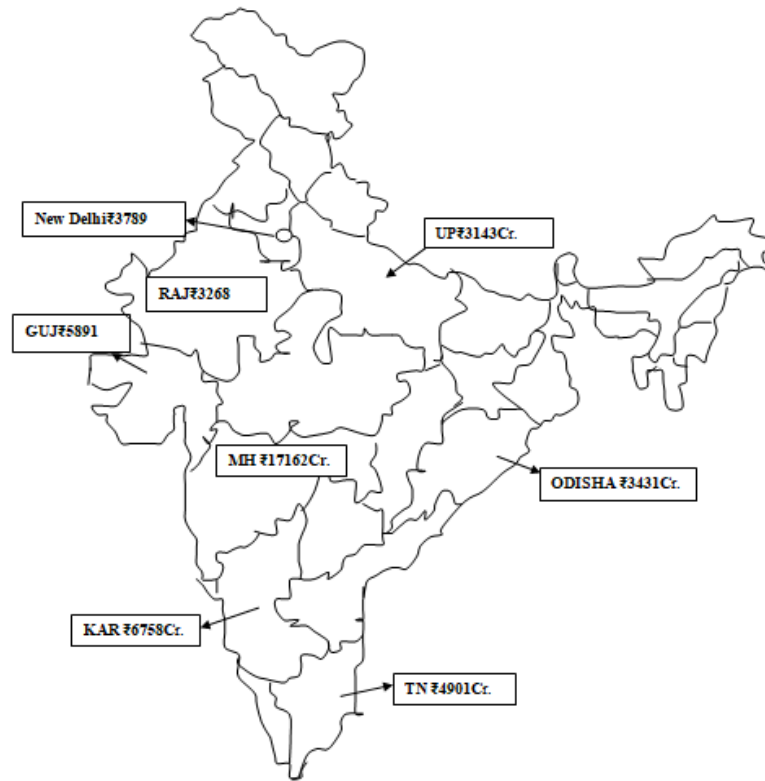


Chart 4 (B): CSR SPENT: TOP 09 Sates/UTs
During 2016-17 to 2020-21



CSR Spent: Top- 09 Companies

During the years 2016-17 to 2020-21, Reliance Industries Limited has spent the maximum on CSR. This company had spent ₹649 crores in CSR in 2016-17. This amount increased to ₹922 crore in 2020-21. Public Sector Corporation ONGC has spent the most on CSR after Reliance Industries Limited except in the year 2019-20. ONGC had spent ₹505 crores on CSR in 2016-17 which increased to ₹674 crores in 2020-21.

TCS, Infosys Ltd., HDFC Bank Ltd., NTPC, ITC Ltd., Mananadi Coalfields Ltd., Wipro Ltd., NMDC Ltd. are other major companies spending CSR. Mahanadi Coalfields Ltd., Wipro Ltd. and NMDC Ltd. have not spent any amount on CSR in the year 2020-21.

These facts are shown in Table -05 and Chart -05.

Table 5: CSR SPENT:TOP 10 COMPANIES
During 2016-17 to 2020-21
(₹ in Cr.)

Name of Companies/Year	2016-17	2017-18	2018-19	2019-20	2020-21
Reliance Industries Ltd.	649	745	849	909	922
ONGC	505	482	587	582	674
TCS	380	400	434	602	362
Infosys Ltd.	289	313	342	360	355
HDFC Bank Ltd.	305	375	444	535	168
NTPC	278	242	285	305	247
ITC Ltd.	278	242	285	305	247
Mahanadi Coalfields Ltd.	167	187	334	166	0
Wipro Ltd.	186	168	185	182	0
NMDC Ltd.	178	167	200	0	0

Source: crs.gov.in

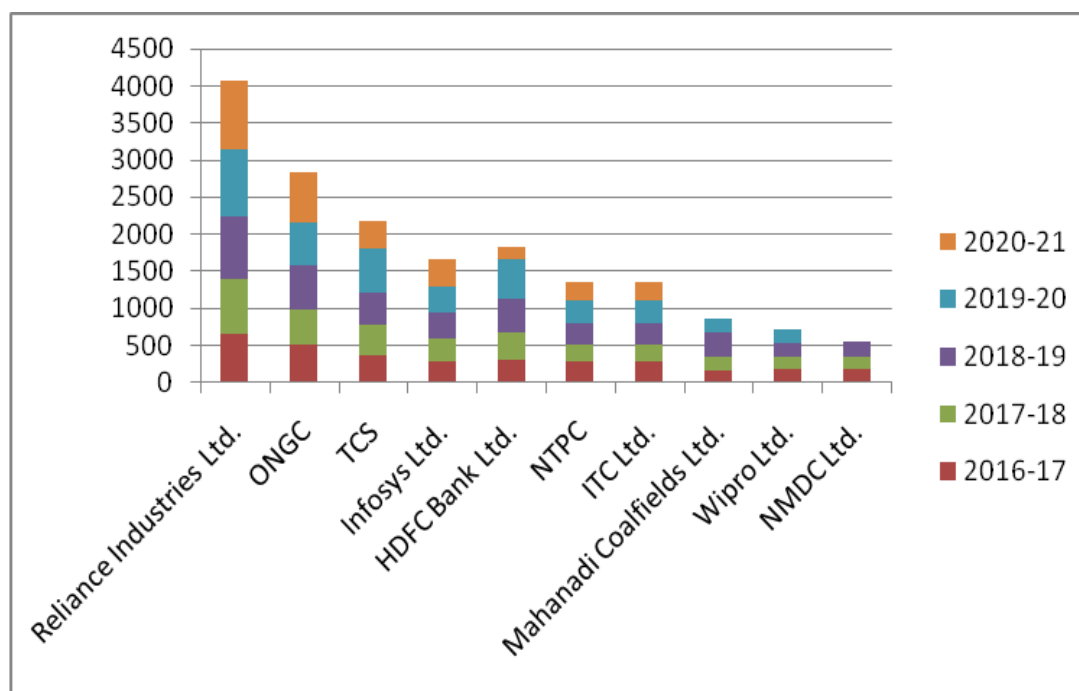


Chart 5: CSR SPENT:TOP 10 COMPANIES

During 2016-17 to 2020-21

(₹ in Cr.)

Role of Public Sector and Private Sector in CSR

Companies spending on CSR are both Public Sector Unit (PSU) and Non-Public Sector Unit (NON-PSU). In the year 2016-17, 19004 Non-PSU companies spent ₹11098 crore in CSR. The number of these sector companies and the amount spent by them under CSR is changing from time to time. 20392 NON-PSU companies spent ₹21725 crore in the year 2020-21. ₹3444 crore spent on CSR by 552 Public Sector companies in the year 2016-17. ₹4486 crore was spent under CSR by 448 PSU in the year 2020-21.

The total amount spent under CSR in 2016-17 by both Non-PSUs and PSUs was ₹14542 crores which increased to ₹26211 crores in 2020-21. Although the total number of companies under CSR was 19556 in 2016-17, it increased to 20840 in 2020-21. Thus, there has been an increase of about 80 percent in terms of the CSR amount during this period, whereas in terms of number of companies, it has increased by only 6.5 percent. The main reason behind this is considered to be Covid-2019. These facts are depicted by Table 06 and Chart 06.

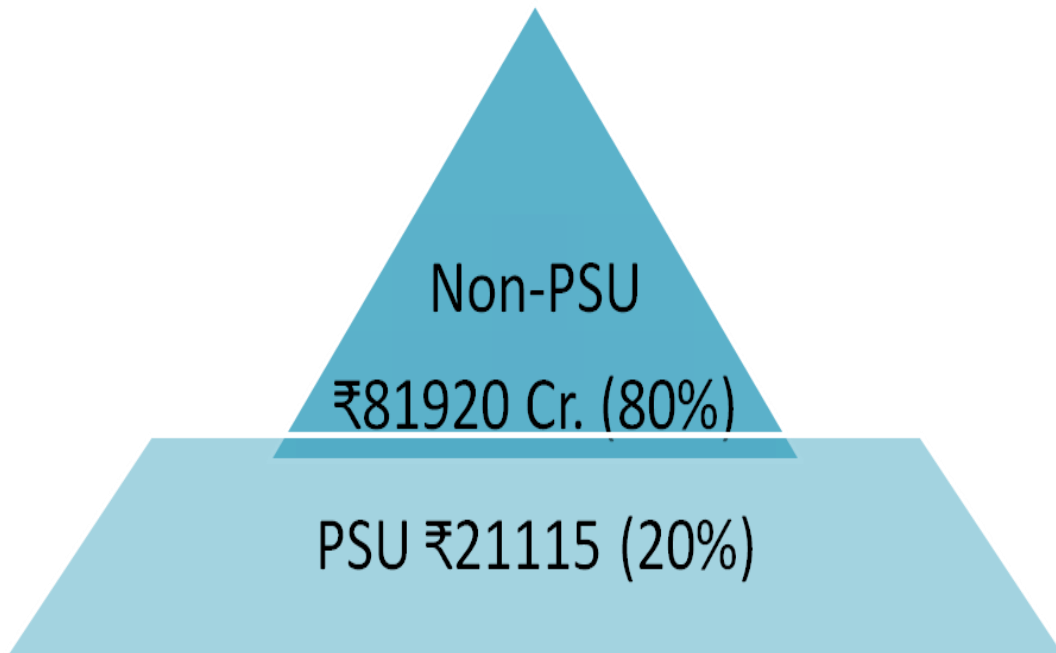
Table 6: CSR Spent: Public Sector and Non-Public Sector Units

During 2016-17 to 2020-21

(₹ in Cr.)

PSU/NON-PSU	FY 2016-17		FY2017-18		FY2018-19		FY2019-20		FY2020-21	
	Total Cos.	Amt. Spent	Total Cos.	Amt. Spent	Total Cos.	Amt. Spent	Total Cos.	Amt. Spent	Total Cos.	Amt. Spent
NON-PSU	19004	11098	20984	13448	24562	15993	22502	19656	20392	21725
PSU	552	3444	541	3651	619	4224	483	5310	448	4486
Grand Total	19556	14542	21525	17099	25181	20217	22985	24966	20840	26211

Source: crs.gov.in



**Chart 6: CSR Spent : PSU vs. Non PSU Companies
During 2016-17 to 2020-21**

Chart – 06 shows that there has been a significant contribution of Non - PSU under CSR. ₹81920 crores were spent by these units from the year 2016-17 to 2020-21 which is about 80 percent of the total CSR whereas during the same period the PSU spent only ₹21115 core which is account 20 percent of the total CSR. It is noteworthy that the role of Non-PSU was given more emphasis in the New Industrial Policy 1991.

The Role of CSR in the Sustainable Development

CSR plays an important role in the sustainable development of the country. The main of role of CSR are as follows:

- Promoting of Education, including elderly and the differently abled and livelihood enhancement projects. For examples, **Hero Moto Corp** in Kukas, Jaipur provides funds to the schools for safe drinking water and for construction of the science labs under their CSR activities.
- CSR is also helpful in eradicating of hunger, poverty and malnutrition. It promotes health care issues including sanitation. For this purpose Swachh Bharat Kosh was set up by the Central Government.
- CSR is also helping to promoting gender equality, empowering women, setting up old age homes for senior citizens.
- CSR is also protecting of environment and ecological balances. The funds raised under CSR is also being used for protecting our flora and fauna of the country. Companies contributing in Clean Ganga Fund set by the Central Government for rejuvenation of river Ganga. CSR is also helpful in the sustainable development of the country.
- CSR is also being used to protect our national heritage, art, handicrafts and culture in country.

- Funds raised under CSR is also used in the benefits of armed forces veterans, war widows and their dependents.
- CSR funds also helpful in the development of science, technology, engineering and medicine. Several research and development projects is being carried out under CSR. Various training programmes are being in operations.
- Sports at various stages including at states level or at country level or at the international level including Olympics, CSR plays an important role for promoting of sports and games in country.
- It increases employee motivation. It also protects resources on which the company depends for their raw materials. It also supports company's philanthropic priorities. ⁸

Conclusion

In conclusion, it may be said that There is direct relationship in the CSR and the sustainable development. High amount of CSR enables sustainable development at a higher level. This is the reason why the Central Government has given legal recognition to CSR. Here it can be suggested that a part of CSR should also be earmarked for the native tribals and backward classes of the country so that water, forest, land and tribes can be protected in the country. Till now under CSR most of the amount is being provided to urban areas which are already very developed while keeping in view the development of the rural areas more amount should be provisioned for villages.

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ANALYSIS OF CONSUMER BEHAVIOR IN ONLINE SHOPPING: A STUDY OF DEMOGRAPHIC AND PSYCHOGRAPHIC FACTORS

Dr. Suresh Kumar Rajora*

ABSTRACT

The rapid growth of e-commerce has transformed the retail landscape, making online shopping a prevalent mode of consumption. This study aims to delve into the nuanced realm of consumer behavior in online shopping, with a specific focus on understanding the influence of demographic and psychographic factors. Through a comprehensive review of existing literature and empirical research, this paper seeks to contribute valuable insights to both academia and the business community. The research design employs a mixed-methods approach, combining quantitative surveys and qualitative interviews to capture a holistic view of consumers' online shopping habits. The sample size includes a diverse demographic representation to ensure a comprehensive understanding of the population under investigation. Demographic factors, such as age, gender, income, and education, will be scrutinized to identify patterns and trends in online shopping preferences. Additionally, psychographic factors, including lifestyle, values, and personality traits, will be explored to uncover the underlying motivations that drive consumers' choices in the digital marketplace. Preliminary findings suggest that certain demographic groups exhibit distinct preferences in terms of online shopping platforms, product categories, and purchasing behaviors. For example, younger consumers may prioritize convenience and speed, while older consumers may prioritize security and reliability. Psychographic factors, on the other hand, play a significant role in shaping the emotional connection consumers establish with online brands and their products. The implications of these findings are manifold. Businesses can tailor their marketing strategies, user interfaces, and product offerings to better align with the diverse needs and preferences of their target audience. Moreover, policymakers and industry stakeholders can leverage this research to formulate regulations and guidelines that promote a fair and secure online shopping environment for all consumers.

KEYWORDS: Consumer Behavior, Online Shopping, Demographic.

Introduction

The introduction is an essential part of your research paper since it lays the groundwork for the study, defines the background, and provides an overview of the research subject. Listed below is a comprehensive analysis of each component that is included in the introduction:

Background

- **Overview of Online Shopping Trends:** To begin, it is important to furnish a comprehensive summary of the growing trend of online buying. Describe the ways in which the expansion of e-commerce has been brought about by changes in customer behavior as well as technological improvements.
- **Impact on Traditional Retail:** Address the effect that conventional retail enterprises are experiencing as a result of internet purchasing. You should investigate the movement in customer preferences away from brick-and-mortar businesses and toward online platforms, as well as the issues that brick-and-mortar enterprises continue to confront.

* Associate Professor, Department of Accountancy and Business Statistics, Government College, Jaipur, Rajasthan, India.

Research Problem

- **Statement of the Problem:** The exact problem or topic that your study intends to answer should be articulated in a clear and concise manner. One example might be the statement, "As the practice of online shopping continues to reshape consumer behavior, it is essential to understand the complex factors that influence individual purchasing decisions." In the context of the landscape of online buying, the purpose of this study is to investigate the link between demographic and psychographic characteristics and customer behavior.

Objectives:

- **Specific Research Objectives:** Make a list of the exact goals that your research aims to achieve. It is important that these objectives are in line with the purpose of the research. In another example, "The primary objectives of this research are to examine the impact of demographic factors (such as age, gender, income, and education) and psychographic factors (including lifestyle, personality, and values) on online shopping behavior."

Significance

- **Importance of the Study:** What are the reasons that it is important to understand the behavior of customers while they are buying online? Consider the repercussions that this has for companies, marketers, and policy professionals. In your presentation, you should highlight the ways in which the findings might help to the creation of efficient marketing tactics and the improvement of the overall experience of purchasing online.
- **Addressing Gaps in Knowledge:** Bring to light any shortcomings or restrictions in the current body of literature that your research intends to address. This might include links between demographic and psychographic characteristics and online buying behavior that have not been thoroughly investigated at this time.

Scope and Limitations

- **Scope of the Study:** The limits of your investigation should be defined very specifically. Include information on the demographic groupings, geographic areas, and time periods that were investigated in the study. As an illustration, "This research focuses on a diverse sample of online shoppers in urban areas within the United States."
- **Limitations:** You should be aware of the constraints that your study has. It is possible that this may include limitations **about** the sample size, the methodology of data collecting, or the generalizability of the findings. Having a careful approach to research is demonstrated by being open and honest about the constraints of the study.

Literature Review

Definition of Online Consumer Behavior

- **Online Consumer Behavior Defined:** The term "online consumer behavior" refers to the act of persons searching for, selecting, purchasing, utilizing, and evaluating items or services through the usage of online channels. In the context of the digital world, it involves the entirety of the customer decision-making journey, which includes aspects such as the search for information, confidence in the internet, the usability of websites, and pleasure after a purchase has been made.
- **Key Components:** Consumer behavior on the internet is impacted by a number of different elements, including both human qualities and societal effects, as well as technological attributes. The understanding of these aspects is absolutely necessary for companies who want to maximize the effectiveness of their marketing strategy and online presence.

Relevant Theories

- **Theory of Planned Behavior (TPB):** According to the theory of planned behavior (TPB), an individual's attitudes toward an activity, subjective norms, and perceived behavioral control all play a role in determining whether or not they intend to engage in that conduct. In the context of online buying, the theory of planned behavior (TPB) provides an explanation for how attitudes, social factors, and perceived control impact the intentions of consumers and, as a result, their actions.

- **Technology Acceptance Model (TAM):** According to TAM, the perceived ease of use and perceived utility of a technology are two factors that impact the adoption of that technology. When it comes to online buying, TAM is a useful tool for gaining an understanding of how customers' opinions of the convenience and usefulness of online platforms influence their choice to participate in activities related to online purchasing.
- **Diffusion of Innovations:** This theory investigates the dissemination of novel concepts, goods, or behaviors throughout a community over the course of time. When applied to the realm of online buying, it may be utilized to get an understanding of the manner in which the adoption of online purchase behaviors is distributed among various demographic groups.

Review of the studies that have already been conducted on demographic and psychographic factors

Demographic Factors

- **Age:** Several studies have been conducted to investigate the ways in which people of varying ages engage in internet purchasing. Consumers who are younger may have a greater familiarity with technology and be more receptive to conducting business online, whereas consumers who are older may have different preferences and worries.
- **Gender:** The findings of research reveal that gender can have an effect on the behavior of online shoppers, which can have implications for product selection, decision-making processes, and preferred online platforms.
- **Income:** There have been studies that have studied the relationship between levels of income and the habits of spending money online. When compared to persons with lesser salaries, those with higher incomes may have distinct preferences and patterns of purchasing.
- **Education:** It has been shown that the degree of education has an effect on the behavior of online shoppers. There may be a correlation between higher levels of education and increased digital literacy as well as high levels of confidence in navigating online platforms.

Psychographic Factors

- **Lifestyle:** Consumer lifestyles play a significant role in shaping online shopping choices. Individuals with active lifestyles may prefer convenient and time-saving online shopping options.
- **Personality:** Research suggests that personality traits can influence online purchasing decisions. For example, individuals with a high need for uniqueness may seek out niche online stores.
- **Values and Beliefs:** Consumer values and beliefs impact the types of products or services individuals are likely to seek online. For instance, environmentally conscious consumers may prefer online retailers with sustainable practices.

Identifying Gaps in Current Literature:

- **Limited Exploration of Intersectionality:** The existing body of research frequently concentrates on the demographic or psychographic characteristics of individuals in isolation. The purpose of this study is to fill the void by investigating the ways in which these elements interact with one another and together affect the behavior of online consumers.
- **Underrepresentation of Specific Demographic Groups:** Some studies may not adequately represent diverse demographic groups. This research seeks to include a more comprehensive sample to ensure a nuanced understanding of online shopping behaviors across various demographic segments.
- **Temporal Changes:** Given the rapid evolution of technology and shifts in consumer preferences, there is a need for updated research to capture the current landscape of online consumer behavior.
- **Cross-Cultural Perspectives:** Many studies may be limited to specific cultural contexts. This research aims to incorporate cross-cultural perspectives to identify potential variations in online shopping behavior across different regions.

- **Influence of Emerging Technologies:** With the advent of technologies like augmented reality and artificial intelligence in e-commerce, there is a gap in understanding how these innovations influence online consumer behavior.

Through the incorporation of pertinent ideas and the identification of current knowledge gaps, the literature evaluation lays the groundwork for a better understanding of the behavior of online consumers. One of the goals of this study is to contribute to a more thorough knowledge of the complicated interplay between demographic and psychographic elements in the arena of online buying. This will be accomplished by combining the data from prior studies.

Theoretical Framework

Choice of Framework

- **Selected Framework:** It has been decided that the Theory of Planned Behavior (TPB) would serve as the theoretical underpinning for this particular investigation. According to the theory of planned behavior (TPB), there are three primary components that have an effect on an individual's conduct: attitude toward the activity, subjective norms, and perceived behavioral control.

Understanding the Relationship

Attitude toward the Behavior

- **Demographics:** An individual's views about the results of an activity, such as buying online, are thought to have an effect on the individual's attitude toward that conduct, according to the theory of planned behavior (TPB). The formation of these views is influenced by demographic characteristics such as age, gender, income, and level of education. One possible explanation for this is that younger people, who are more comfortable with digital technologies, may have a more favorable attitude toward online buying.
- **Psychographics:** The creation of attitudes is influenced by a variety of individual psychographic characteristics, each of which includes personality and lifestyle. A customer who leads an adventurous lifestyle could have a favorable attitude toward the ease of online purchasing, whereas a consumer who prefers conventional experiences might have a more conservative attitude about the convenience of online shopping.

Subjective Norms:

- **Demographics:** Subjective norms, also known as perceived social pressures, are thought to have an effect on conduct, according to TPB. The formation of these standards is, in part, influenced by demographic variables. There may be differences in societal expectations surrounding shopping behavior, for instance, depending on factors such as age, gender, or individual financial level.
- **Psychographics:** The creation of subjective norms is influenced by a variety of psychographic elements, including those pertaining to values and beliefs. There is a possibility that consumers who uphold similar values would experience comparable societal pressures and expectations in relation to their online buying decisions.

Perceived Behavioral Control

- **Demographics:** The theory of planned conduct places an emphasis on the importance of perceived behavioral control, which depicts an individual's confidence in their capacity to carry out an action. A person's degree of digital literacy and confidence in their ability to navigate online platforms may be influenced by demographic characteristics such as education and income.
- **Psychographics:** A person's perceived level of behavioral control can be influenced by their personality features. It is possible that a person who is both tech-savvy and self-assured is more likely to embrace online buying because they feel as though they have a greater feeling of control over the process.

Justification for the Chosen Framework

- **Relevance to Online Consumer Behavior:** TPB is particularly relevant to understanding online consumer behavior as it provides a comprehensive model that considers both cognitive and social factors. Online shopping decisions involve a cognitive evaluation of the benefits and risks, as well as social influences from peers and societal norms.

- **Flexibility and Applicability:** TPB's flexibility allows for the incorporation of both demographic and psychographic factors. It recognizes that attitudes, subjective norms, and perceived behavioral control are shaped by a range of individual characteristics, making it suitable for studying the intricate relationship between consumer behavior, demographics, and psychographics.
- **Empirical Support:** TPB has a robust empirical foundation and has been successfully applied to various domains. Numerous studies have used TPB to explain and predict consumer behavior in different contexts, making it a reliable and validated framework.

Overall Contribution

- **Holistic Understanding:** Through the utilization of the Theory of Planned Behavior, the purpose of this research is to offer a comprehensive comprehension of the dynamic relationship that exists between demographic and psychographic aspects in the process of influencing the behavior of online consumers. The framework makes it possible to identify important variables and investigate the ways in which these factors interact with one another to impact attitudes, subjective norms, and perceived behavioral control.
- **Practical Implications:** Putting TPB into practice may provide organizations and marketers with insights that might have real ramifications for their operations. Businesses have the ability to better satisfy the wants and expectations of a wide variety of customer groups by tailoring their tactics because they have a better grasp of the psychological and sociological aspects that influence the behavior of online shoppers.

Research Methodology

Population and Sample

- **Target Population:** The target population for this study comprises individuals engaged in online shopping across diverse demographic groups. This includes consumers of various ages, genders, income levels, and educational backgrounds who actively participate in online purchasing activities.
- **Sample Selection Process:** A stratified random sampling technique will be employed to ensure representation from different demographic segments. Strata will be defined based on key demographic variables such as age, gender, income, and education. Random samples will then be drawn from each stratum to form a comprehensive and representative study sample. This approach aims to capture the diversity of the population and facilitate robust analyses across demographic categories.

Data Collection

- **Methods Used:** A combination of quantitative surveys and qualitative interviews will be employed for data collection. The survey instrument will include a structured questionnaire designed to gather quantitative data on demographic variables (e.g., age, gender, income) and psychographic factors (e.g., lifestyle, personality traits). Additionally, semi-structured interviews will be conducted to obtain in-depth qualitative insights into participants' values, beliefs, and attitudes toward online shopping.
- **Survey Administration:** The survey will be administered online to ensure the convenience of participants and align with the context of the study. Recruitment efforts will be targeted through various online platforms, social media channels, and email lists. Interviews will be conducted through video conferencing to allow for a more personalized and detailed exploration of participants' perspectives.

Variables

- **Demographic Variables**
 - Age: Categorized into distinct groups (e.g., 18-24, 25-34, 35-44, etc.).
 - Gender: Male, female, non-binary.
 - Income: Stratified into income brackets to capture variations.
 - Education: Categorized based on educational attainment (e.g., high school, undergraduate, postgraduate).

- **Psychographic Variables:**
 - Lifestyle: Assessed through questions about daily routines, activities, and preferences.
 - Personality Traits: Measured using established scales to capture traits such as openness, extraversion, and conscientiousness.
 - Values and Beliefs: Explored through qualitative interview questions probing participants' ethical and personal values related to consumption.

Data Analysis

- **Quantitative Data Analysis:** Descriptive statistics, such as means, frequencies, and percentages, will be used to analyze demographic variables. Inferential statistical methods, including regression analysis, will be applied to examine relationships between demographic factors and online shopping behavior. This quantitative analysis aims to identify significant patterns and correlations within the data.
- **Qualitative Data Analysis:** Thematic analysis will be employed to analyze the qualitative data obtained from interviews. Transcripts will be coded, and themes related to psychographic factors will be identified. The qualitative analysis will provide a deeper understanding of participants' values, beliefs, and attitudes, contributing valuable context to the quantitative findings.
- **Integration of Results:** The results from both quantitative and qualitative analyses will be integrated to provide a comprehensive understanding of the relationship between consumer behavior, demographics, and psychographics in online shopping. Triangulation of findings will enhance the validity and reliability of the study, allowing for a richer interpretation of the data.

In order to capture the complexities of online consumer behavior, this research technique employs a mixed-methods approach that capitalizes on the strengths of both qualitative and quantitative data. This strategy was created to capture the complexity of online consumer behavior. The utilization of survey data in conjunction with in-depth interviews guarantees a nuanced investigation of the dynamic relationship between demographic and psychographic aspects in the process of developing behaviors related to online buying.

Table 1: A Selection of the Respondents' Socioeconomic and Demographic Profiles from the Survey

S. No	Profile of the respondents	Category	Number of Respondents	Percentage (%)
1	Age of the respondents	Below 25yrs	87	21.1
		25-35 yrs	204	49.5
		35-45 years	73	17.7
		45-55 years	34	8.3
		Above 55 yrs	14	3.4
2	Gender	Male	221	53.6
		Female	191	46.4
3	Educational qualification	HSc	19	4.6
		UG	113	27.4
		PG	131	31.8
		Professional	79	19.2
		Diploma	26	6.3
		Others	44	10.7
4	Occupation	Employee	151	36.7
		Student	128	31.1
		Businessman	25	6.1
		Professional	48	11.7
		Housewife	52	12.6
5	Monthly Income	Others	8	1.9
		Below Rs.10000	56	13.6
		Rs 10000 –Rs 20000	229	55.6
		Rs 20000 – Rs 30000	84	20.4
		Rs 30000- Rs 40000	19	4.6
Above Rs.40000	24	5.8		

The demographic and socioeconomic characteristics of the respondents is presented in table 1, which may be seen here. In terms of age, the bulk of the respondents (49.5% of them) fall within the range of 25 to 35 years old. Males make up the majority of those who responded. The majority of the respondents had finished their level of education above the undergraduate level, and the majority of the respondents were classified as employees. All of the interviewees had a monthly income that ranged from Rs 100,000 to Rs 20,000.

Table 2: Educating People About Shopping Online With regard to the Online Purchase

Factor	Calculated 2 Value	Table Value	D.F	P value	Remarks
Gender	7.567	9.49	4	0.110	Not significant
Qualifications in terms of education	49.46	31.41	20	0.000	Significant
Competence in the realm of online buying	67.998	31.41	20	0.000	Significant
Use of the website in its natural state	2.243	9.49	4	0.691	Not significant
Purchases made on a regular basis	89.787	21.03	12	0.000	Significant
favored method of monetary repayment	54.743	21.03	12	0.000	Significant

An link between the awareness of online buying and a variety of preference characteristics is indicated in the table that can be seen above. The components, the chi-square value, the table value, the p value, and the connection are all specified that are included. The elements at play The respondents' educational qualifications, the number of years they have been familiar with internet purchasing, and their level of knowledge The p value for both the frequency of online purchases and the preferred means of payment is less than 0.05, which indicates that there is a correlation between the two and the level of awareness regarding online buying. There is no correlation between the knowledge level and the other characteristics, which include gender and the nature of the website being used (whether it is a preference for the same website or a new website).

A statistical technique known as analysis of variance was utilized to investigate the correlation between the respondents' levels of satisfaction and their economic status and employment.

Table 3: A person's income and their degree of contentment in regard to online shopping

Income	Sum ofSquares	Df	MeanSquare	F	Sig.
Between Groups	1.540	4	.385	.408	.803
Within Groups	384.237	407	.944		
Total	385.777	411			

When V1 is equal to 4, and V2 is equal to 407, the table value of F is 2.37 when the significance threshold is set at 5%.The estimated value of 0.408 is lower than the value of 2.37 that is found in the table. It may be concluded that there is no substantial correlation between the amount of money earned each month and the degree of contentment with regard to online shopping.

Conclusion

The purpose of this study was to investigate the complex correlations that exist between online consumer behavior, demographic parameters, and psychographic features. To do this, the researchers utilized a thorough research technique that included both quantitative surveys and qualitative interviews. The primary findings of the study shed light on important patterns and insights, making a significant contribution to the understanding of consumer behavior in the context of the online buying scene.

Main Findings

- **Demographic Impact on Online Shopping:** The research identified significant correlations between demographic variables and online shopping preferences. Age emerged as a crucial factor, with younger participants exhibiting a higher inclination toward online shopping, while income levels and educational background also played roles in shaping consumer behavior.
- **Psychographic Influences:** Psychographic factors, particularly lifestyle and personality traits, were found to exert a substantial impact on online shopping decisions. Consumers with adventurous lifestyles tended to embrace the convenience of online platforms, while distinct personality traits influenced preferences for certain product categories.

- **Intersectionality of Demographic and Psychographic Factors:** The study uncovered nuanced relationships between demographic and psychographic elements, emphasizing the importance of considering these factors collectively. For instance, the intersection of age and personality traits revealed diverse online shopping behaviors within specific age groups.

Contributions to the Field

By adopting a mixed-methods approach, this research contributes to a more holistic understanding of online consumer behavior. The integration of quantitative and qualitative data provides a nuanced and comprehensive view of the complex interplay between demographics, psychographics, and online shopping preferences. The findings offer actionable insights for marketers and businesses aiming to tailor their strategies to diverse consumer segments. Understanding the nuanced preferences and motivations of different demographic and psychographic groups enables the development of targeted marketing campaigns and personalized online shopping experiences. This study further contributes by empirically validating the Theory of Planned Behavior in the context of online shopping. The framework effectively explains how attitudes, subjective norms, and perceived behavioral control influence online consumer behavior, providing a solid foundation for future research.

Suggestions for Future Research

- Conducting longitudinal studies to track changes in online shopping behavior over time would provide valuable insights into evolving trends and the impact of technological advancements.
- Exploring online consumer behavior across diverse cultural contexts can unveil variations and similarities, contributing to a more global understanding of e-commerce trends.
- Investigating the influence of emerging technologies, such as virtual reality and artificial intelligence, on online shopping behavior could shed light on the evolving dynamics of the digital marketplace.
- Future research could delve deeper into specific demographic groups that emerged as particularly influential in this study. For example, understanding the unique online shopping behaviors of certain age cohorts or income brackets would provide more targeted insights.

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DECONSTRUCTING TAX CHOICE: A STUDY OF FACTORS INFLUENCING TAX REGIME SELECTION IN INDIA

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Dr. Bijay Krishna Bhattacharya**

ABSTRACT

The budget 2020 in India created a New Tax Regime (NTR) to benefit taxpayers, making tax filing easier and simpler. There are numerous examples that show that both tax systems possess their own benefits and drawbacks. The introduction of the New Tax Regime (NTR) in India has presented taxpayers with a choice between two distinct tax structures. This study aims at investigating the factors influencing individuals' selection of the Old Tax Regime (OTR) or the New Tax Regime (NTR). Through a comprehensive analysis, this research aims to: identify the following key drivers behind the taxpayer preference for the Old Tax Regime (OTR) and the New Tax Regime (NTR); identify the impact of socio-economic factors such as age, income, and occupation on tax regime choice. This research employs a mixed-methods strategy that incorporates qualitative information from surveys and interviews with quantitative data analysis. The Union Budget 2023 contains the new tax slab rates issued by the Indian government. The NTR is optional for the Indian taxpayers as the government has not eliminated the prior tax structure. The finance minister of India has increased the standard deduction for salaried individuals while decreasing the number of tax slabs. The improvements made in the Indian taxation system don't actually make things easier for the Indian taxpayers. Through a comprehensive analysis of the research, it has been analysed that majority of the respondents prefer OTR over the NTR based on different key factors affecting their choices.

KEYWORDS: NTR, OTR, Union Budget, Socio-Economic Factors.

Introduction

India is not an exception to the rule that taxes are essential to a running nation. In India, the government uses the tax system—a complicated but essential mechanism—to raise money for social welfare, infrastructure development, and public services. There are two different tax regimes that make up the Indian tax system. The essential choice between the Old Tax Regime (OTR) and the New Tax Regime (NTR) now faces Indian taxpayers.

For taxpayers, the OTR in India provides a well-known and dependable route. Its structure is based on a number of tax slabs with various exemptions and discounts. This offers chances to reduce taxes by making wise financial decisions and investments. But navigating the maze of deductions can be difficult because to the OTR's enormous complexity, which calls for a thorough understanding of tax laws and regulations. This strategy has a number of benefits, including:

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- **Potential for significant tax savings:** Utilising the many exclusions and deductions offered by this tax system with strategic investments and good financial planning can result in significant tax savings.
- **Flexibility and Customization:** This regime allows the taxpayers with the flexibility of tax planning as individuals can choose which deductions and exemptions are suitable for their financial situation.

However, the OTR also has its own set of challenges:

- **High Surcharges:** In comparison to the New Tax regime, the surcharge rates are higher under this regime.
- **Higher tax slab rates:** Under the previous tax system, the tax slab rates were greater.

Slab Rates for Income tax For FY 2023–2024 and AY 2024–2025

Slabs	People (less than 60 years old)	Senior Citizens who live there (≥ 60 but <80 years old)	Super Senior Citizens living in the area (80 years and above)
Maximum Rs 2,50,000	Zero	Zero	Zero
Between Rs 2,50,001 and Rs 3,00,000	Five percent	Zero	Zero
Between Rs 3,00,001 and Rs 5,00,000	Five percent	Five percent	Zero
From Rs 5,00,001 to Rs 10,00,000	Twenty percent	Twenty percent	Twenty percent
More than Rs 10,00,000	Thirty percent	Thirty percent	Thirty percent

However, in Budget 2020, a new tax system was unveiled, changing the tax slabs and providing taxpayers with reduced tax rates. However, a number of exemptions and deductions, including HRA, LTA, 80C, 80D, and others, are not available to those who choose the new tax system. Five significant modifications were made by the government in Budget 2023 to entice taxpayers to accept the new system. They are as follows:

- **Increased Tax Rebate Cap:** A complete refund on income up to Rs 7 lakhs has been implemented. In contrast, under the previous tax system, this threshold was Rs 5 lakhs. This implies that under the new tax system, those with incomes up to Rs 7 lakhs will not be required to pay any taxes at all.
- **Streamlined Tax Slabs:** The revised tax slabs are as follows, with the tax exemption maximum raised to Rs 3 lakhs.

Overall Income	Tax Rate
Maximum 3,00,000	Zero
3,00,001-6,00,000 rupees	Five Percent
6,00,001-9,00,000 rupees	Ten Percent
9,00,001-12,00,000 rupees	Fifteen Percent
12,00,001-15,00,000 rupees	Twenty Percent
Above 15,00,001 rupees	Thirty Percent

- **Salary Income:** The standard deduction of Rs 50,000, which was exclusive to the previous tax system, is now available under the current one as well. Under the new system, you will receive Rs 7.5 lakhs in tax-free income after this and the refund.
- **Family Pension:** Families that get pensions are eligible to deduct Rs 15,000 or one-third of their pension, whichever is less.

Old vs. New Regime Taxes

The following computations can be used to help choose between the old and new tax regimes:

- The new system will be advantageous where the total amount of deductions is Rs 1.5 lakhs or less.
- If the total amount of deductions exceeds Rs 3.75 lakhs, the previous system will be advantageous.
- Depending on the income level, total deductions between Rs 1.5 lakhs and Rs 3.75 lakhs will be made.

Review of the Literature

Ritwik Garg (2023) examined the differences between the previous and current tax regimes, with a particular emphasis on the advantages of each for the tax payers. Additionally, this study offers useful information that will assist a person in selecting between the two distinct tax regimes within the Indian tax system. In order to analyse taxpayer understanding of the Indian tax system, the research process was primarily a quantitative data analysis that took into account each taxpayer's response.

Ankit Goel, Parul Garg (2021), examined the preferences of individual taxpayers between the two accessible regimes and assessed the benefit analysis using a comparative study of the two available systems. The study emphasises how people are aware of and comprehend the new tax system that is being proposed.

Gurpreet Kaur and Dr. Shailinder Sekhon (2020), aims to investigate the effects of the most recent tax regime on middle-class Indians and their degree of tax planning and designing. An alternative income tax structure was planned for the Union Budget 2020, and it took effect on April 1, 2020. Individuals have to comply with the New Tax Regime (NTR).

According to Jha (2013), a large reliance on indirect taxes ought to be lessened by increasing both direct taxes on the extremely wealthy and nontax earnings.

Chakrabarty (2020), discusses the distinctions between the current and previous tax systems and the many deductions and exemptions that those who opt to use the new tax system will no longer be able to claim.

A taxpayer will ultimately pay more in taxes under the new system than under the old one, claims Sheth (2020).

Techniques

Data, Design, and Analysis

The nature of this research is descriptive. It includes techniques for gathering primary and secondary data. A study-specific questionnaire was used to gather the primary data. Numerous research papers, journals, magazines, newspapers, and websites provided the secondary data. After the information and data have been collected, they are sorted, totalled, and processed. The outcomes are then arranged and displayed.

Sample Plan

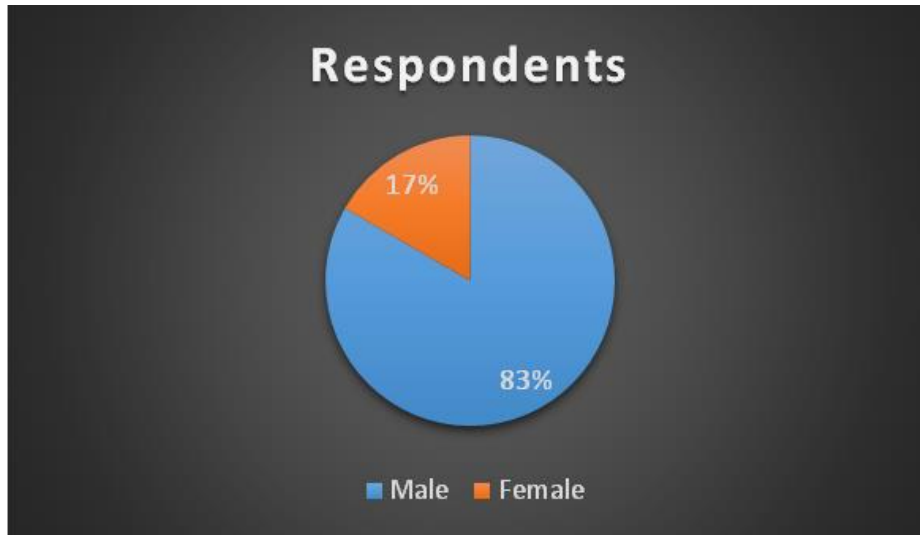
- Individual taxpayers are the target population.
- Convenience sampling is the sampling method.
- 50 distinct taxpayers make up the target sample.
- Of the sample, 18 taxpayers responded.

Interpretation of Data

- **Survey Analysis**

Table 1: Respondents' Distribution According to Gender

Serial Number	Sexual Category	The number of responders	Proportion
1	Men	15	83%
2	Women	3	17%
	Total	18	Hundred Percent

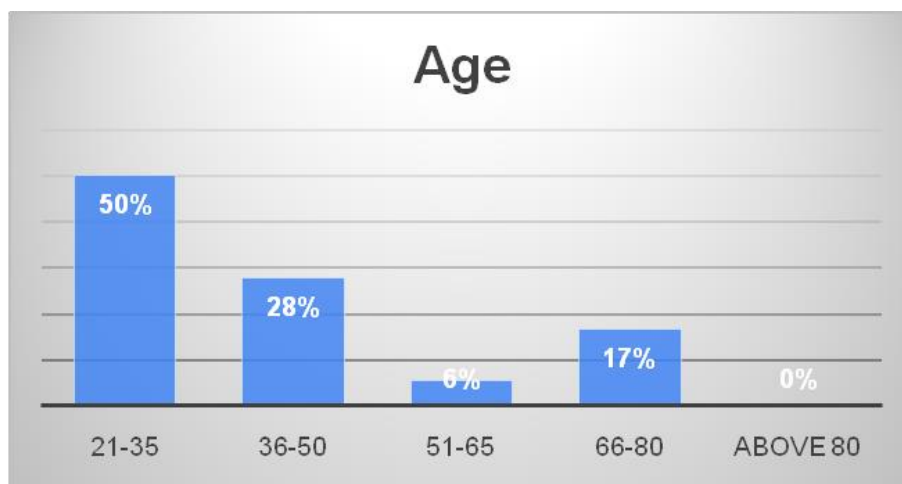


Interpretation

According to Table 1, 83% of all respondents are men, while 17% are women. All respondents are male.

Table 2: Respondent distribution based on age

Serial Number	Length of life	The number of Responders	Percentage
1	21-35	9	50%
2	36-50	5	28%
3	51-65	1	6%
4	66-80	3	17%
5	Above 80	0	0%
	Total	18	100%

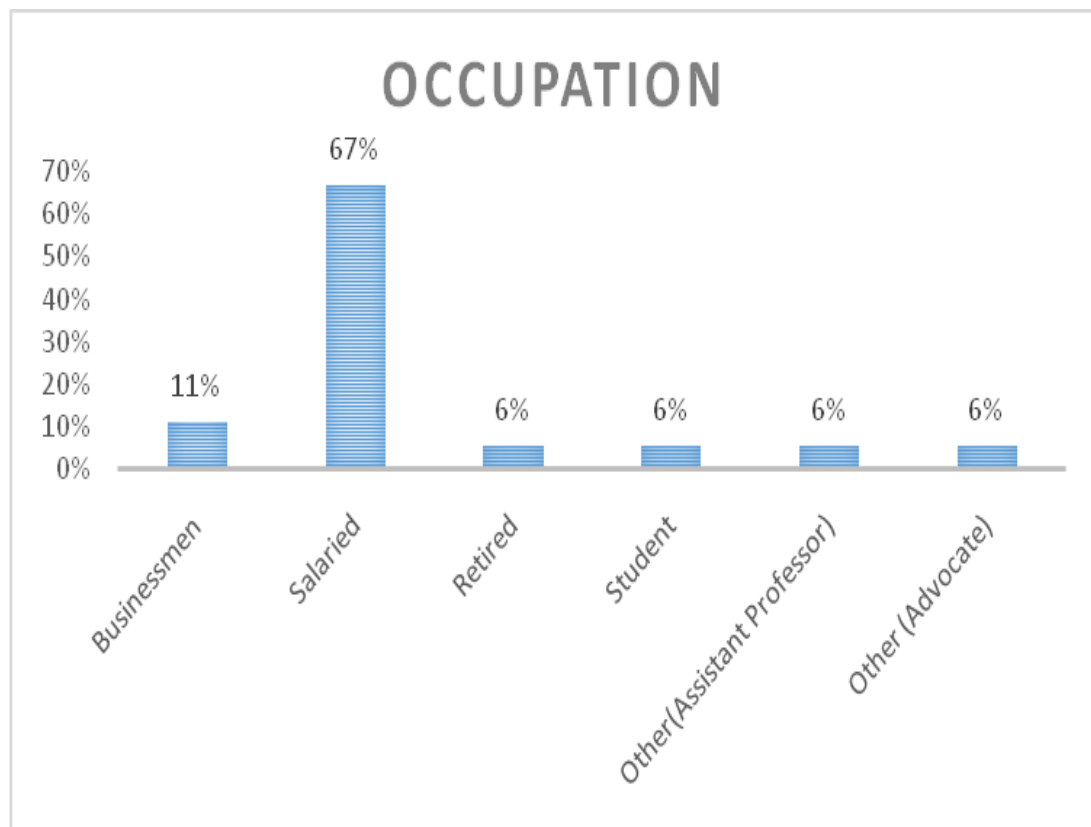


Interpretation

Table 2 of the survey clearly shows that the majority of respondents, or 50%, are between the ages of 21 and 35. This is followed by the age group of 36 to 50, which accounts for roughly 28% of the respondents; 6% of the respondents are between the ages of 51 and 65, and 17% are between the ages of 66 and 80.

Table 3: Distribution of respondents on the basis of occupation

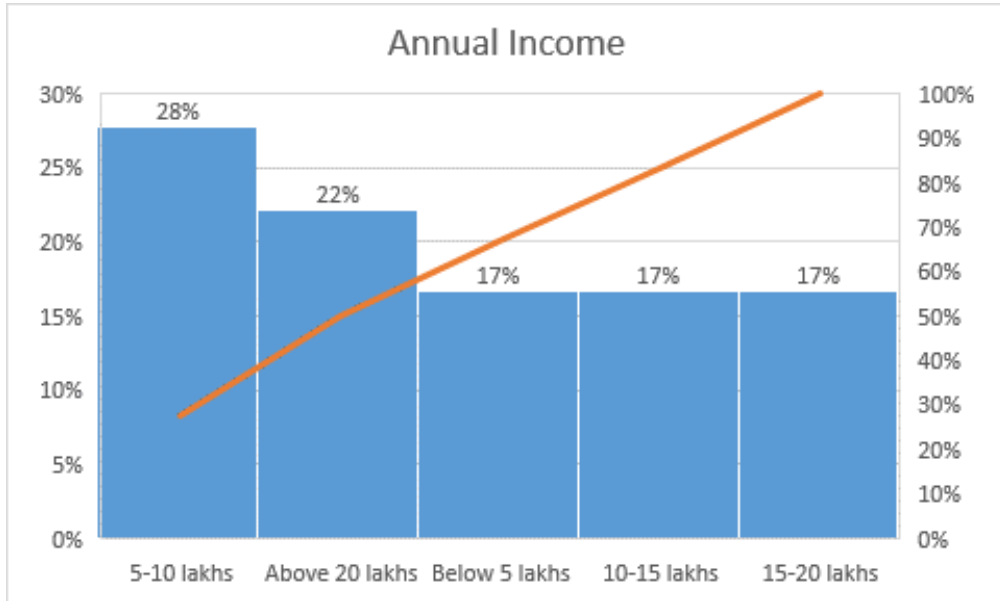
Serial Number	Profession	Number of Responders	Proportion
1	Businessmen	2	11%
2	Salaried	12	67%
3	Retired	1	6%
4	Student	1	6%
5	Other (Assistant Professor)	1	6%
6	Other (Advocate)	1	6%
	Total	18	100%

**Interpretation**

According to Table 3, 67% of respondents are employed, with 11% being business owners, 6% being retirees, 6% being students, 6% being assistant professors, and 6% being advocates.

Table 4: Respondent distribution based on annual income

Serial Number	Annual Salary	Number of Responders	Percentage
1	Below 5 Lakhs	3	17%
2	5-10 Lakhs	5	28%
3	10-15 Lakhs	3	17%
4	15-20 Lakhs	3	17%
5	Above 20 Lakhs	4	22%
	Total	18	100%

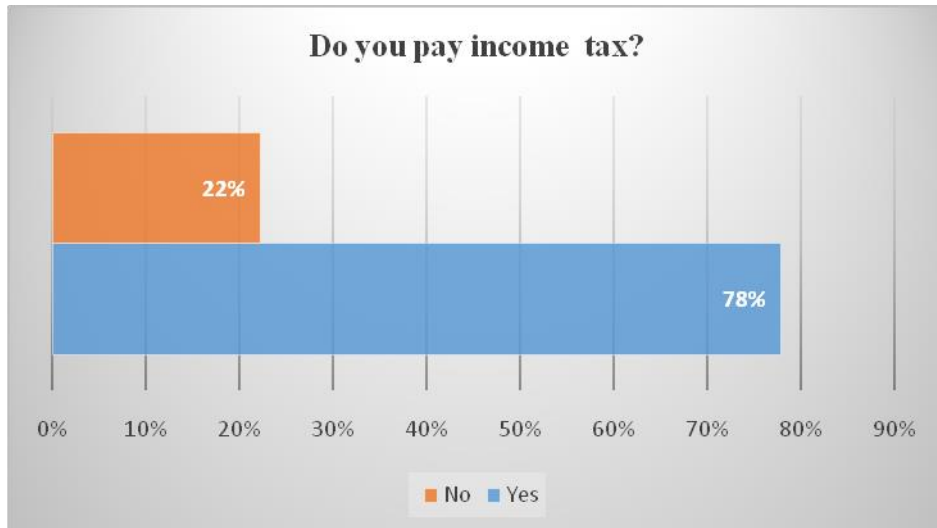


Interpretation

Table 4 shows that approximately 28% of respondents earn between 5 and 10 lakhs per year, followed by 22% who earn more than 20 lakhs and 17% who earn between 5 and 10 lakhs, 10-15 lakhs, and 15-20 lakhs per year.

Table 5: Do you pay income tax?

Serial Number	Do you pay income tax?	Number of Responders	Percentage
1	Yes	14	78%
2	No	4	22%
	Total	18	100%



Interpretation

Table 5 depicts that 78% of the respondents pay income tax, whereas 22% of the respondents do not pay income tax.

Table 6: Are you aware of different tax regimes available in India?

Serial No.	Are you aware of different tax regimes available in India?	Number of Responders	Proportion
1	Yes	15	83%
2	No	3	17%
	Total	18	100%

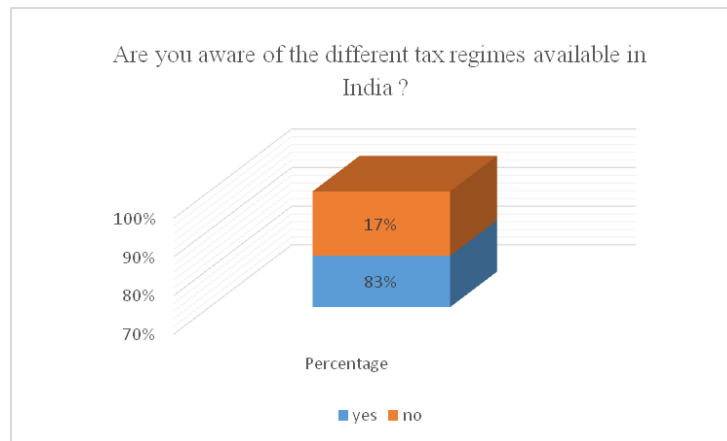
**Interpretation**

Table 6 emphasizes that 83% of the respondents are aware of the different tax regimes available in India.

Table 7: If yes, please tell about the tax regimes you are aware of? (eg- old tax regime, new tax regime or both)

Serial No.	If yes, please tell about the tax regimes you are aware of? (e.g.- old tax regime, new tax regime or both)	No. of Responders	Percentage
1	Old tax regime	2	14%
2	New tax regime	1	7%
3	Both	11	79%
	Total	18	100%

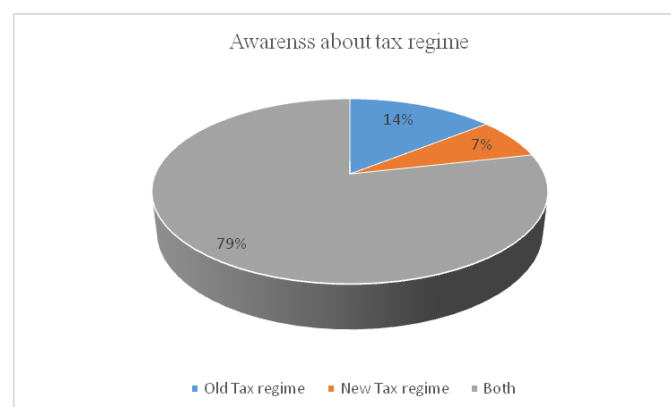
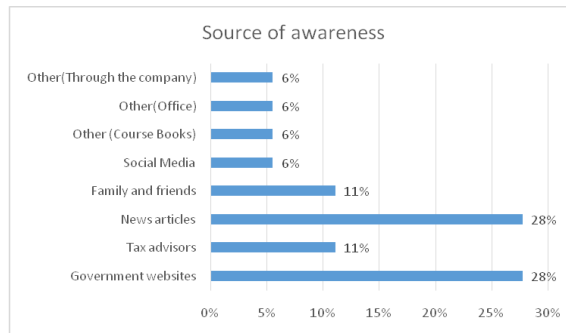
**Interpretation**

Table 7 shows that 79% of respondents are aware of both the old and new tax regimes that are accessible in India, 14% are only aware of the old tax regime, and 7% are aware of both.

Table 8: How did you learn about the different tax regimes?

Serial No.	How did you learn about the different tax regimes?	No. of Respondents	Percentage
1	Government websites	5	28%
2	Tax advisors	2	11%
3	News articles	5	28%
4	Family and Friends	2	11%
5	Social Media	1	6%
6	Other(Course Books)	1	6%
7	Other(Office)	1	6%
8	Other (Through the company)	1	6%
	Total	18	100%

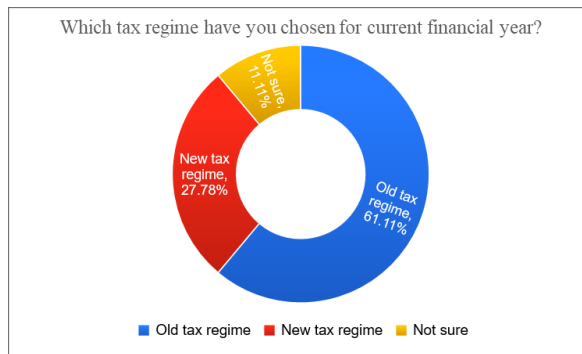


Interpretation

Out of the total response received, 28% of the respondents are aware about the tax regime through government websites and news articles, 11% from family and friends, 6% from social media, course books, office and through the company respectively.

Table 9: Which tax regime have you chosen for current financial year?

Serial No.	Which tax regime have you chosen for current financial year?	No. of Respondents	Percentage
1	Old tax regime	11	61.11%
2	New tax regime	5	27.78%
3	Not sure	2	11.11%
	Total	18	100%

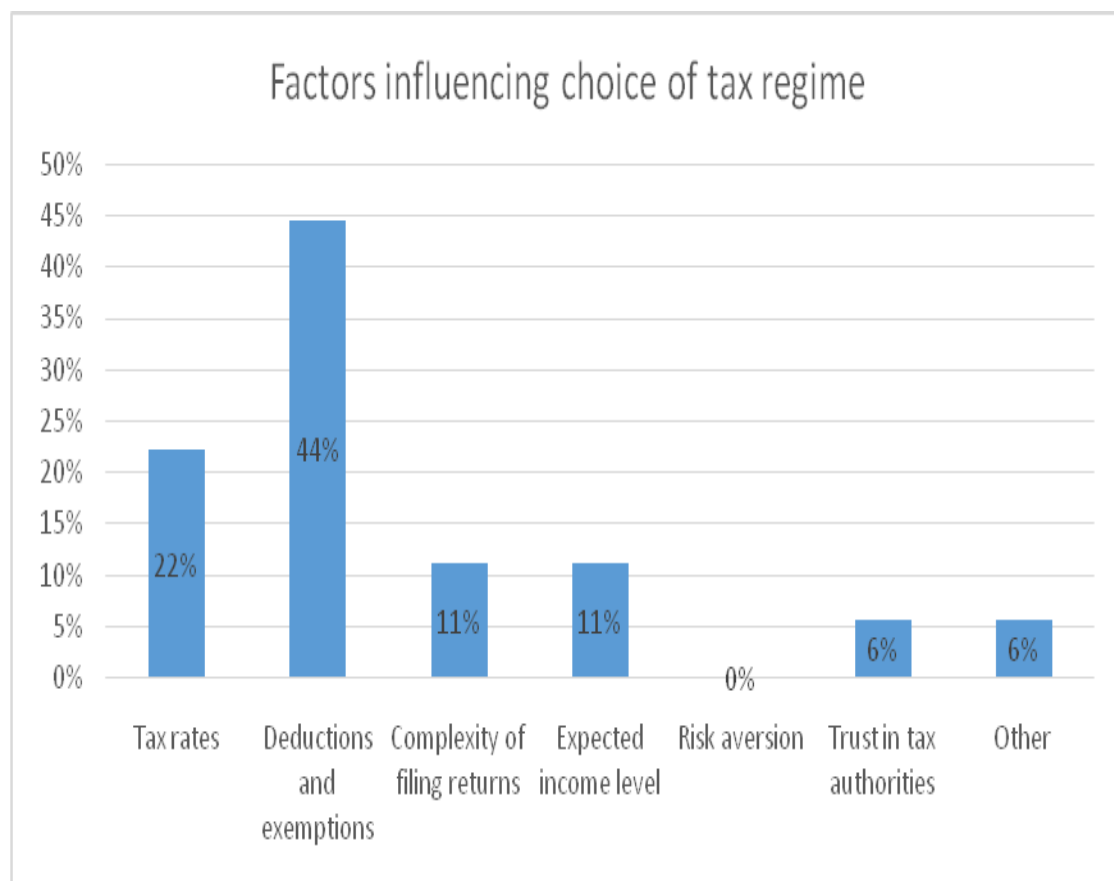


Interpretation

Out of the responses received, 61.11% of the respondents has chosen old tax regime for current financial year, followed by 27.78% of them choosing new tax regime and 11.11% are not sure about it.

Table 10: What are the factors which influenced your choice of tax regime?

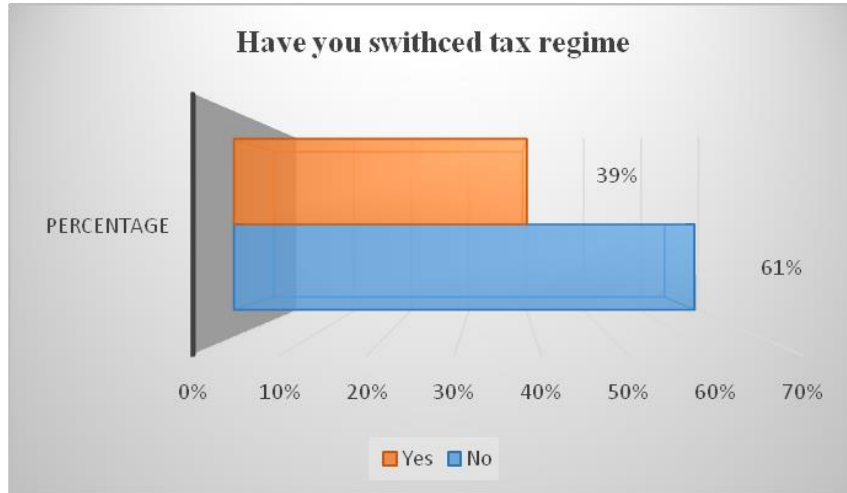
Serial No.	Q10. What are the factors which influenced your choice of tax regime?	No. of Respondents	Percentage
1	Tax rates	4	22%
2	Deductions and exemptions	8	44%
3	Complexity of filing returns	2	11%
4	Expected income level	2	11%
5	Risk aversion	0	0%
6	Trust in tax authorities	1	6%
7	Other	1	6%
	Total	18	100%

**Interpretation**

Out of the 18 responses received, 44% of them are influenced by the deductions and exemptions factor for choice of tax regime, followed by 22% who are influenced by tax rates, 11% on the basis of complexity of filing returns and expected income level, and 6% are influenced by trust in tax authorities and other factors.

Table 11: Have you switched tax regime?

Serial No.	Have you switched tax regime?	No. of Respondents	Percentage
1	Yes	7	39%
2	No	11	61%
	Total	18	100%

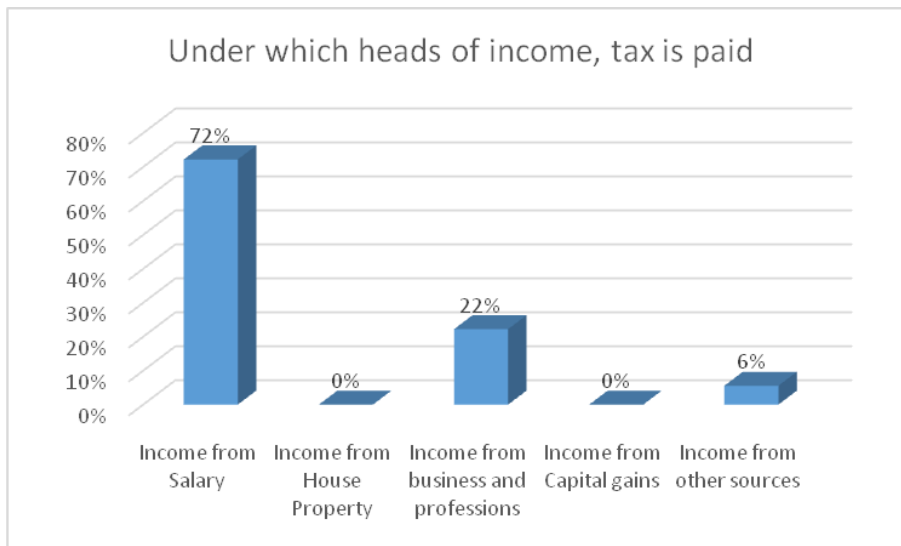


Interpretation

61% of the respondents have not switched tax regime, whereas 39% of the respondents have switched tax regime.

Table 12: Which Head of Income applies to the taxation of your income?

Serial No.	Which Head of Income applies to the taxation of your income?	No. of Respondents	Percentage
1	Income from Salary	13	72%
2	Income from House Property	0	0%
3	Income from business and professions	4	22%
4	Income from Capital gains	0	0%
5	Income from other sources	1	6%
	Total	18	100%

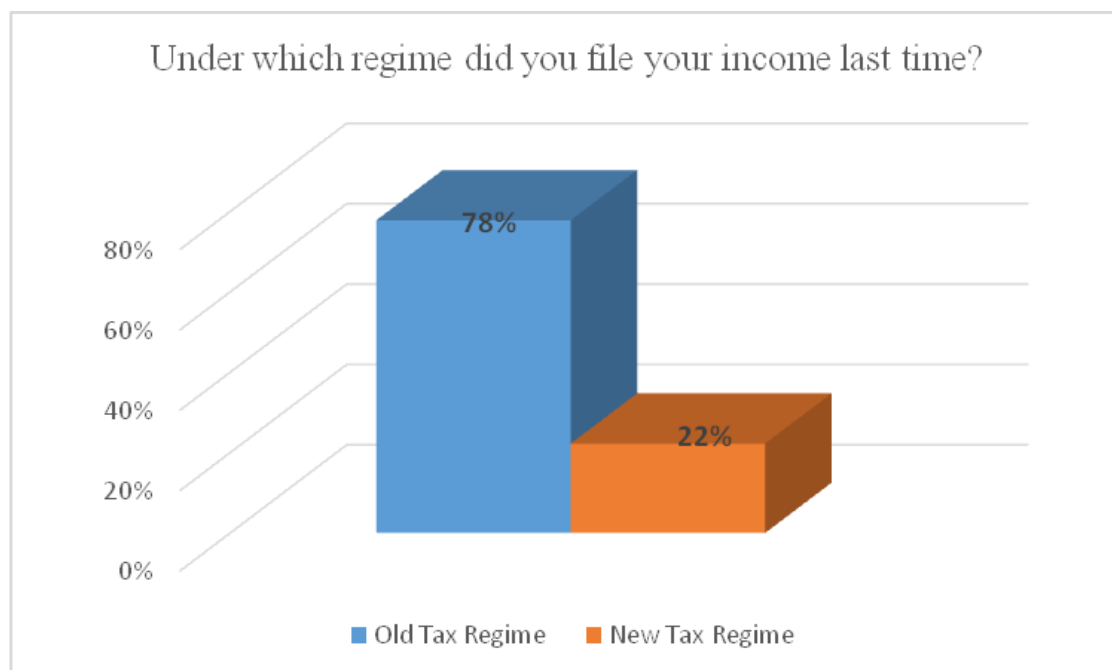


Interpretation

The majority of respondents—72%—pay taxes under the heading "Income from salary," which is followed by the headings "Income from business and professions" (22%), and "Income from other sources" (6%).

Table 13: Under which regime did you file your income last time

Serial No.	Under which regime did you file your income last time	No. of Respondents	Percentage
1	Old tax regime	14	78%
2	New tax regime	4	22%
	Total	18	100%

**Interpretation**

Out of the total responses received, 78% of the respondents file tax under Old tax regime, whereas 22% of the respondents file tax under new tax regime.

Limitations

- Time constraints.
- The sample size chosen is according to the convenience.
- The findings may be biased because of the sample size.

Findings**Demographics**

- Gender- 83% male, 17% female.
- Age- 50% aged 21-35, 28% aged 36-50, 6% aged 51-65, and 17% aged 66-80.
- Occupation- 67% salaried people, 11% businessmen, and 6% retired, students, assistant professors and advocates.
- Income- 28% has a yearly pay of 5-10 lakhs, 22% have a pay over 20 lakhs, and 17% have a pay under 5 lakhs, 10-15 lakhs, or 15-20 lakhs

Tax Awareness

- 78% of the respondents pay income tax.
- 83% of the respondents are aware of the different tax regimes available in India.
- 79% of the respondents are aware of both the tax regimes, 14% are aware of only old regime and 7% are aware of only new regime.

Tax regime choice

- Of those surveyed, 61.11% selected the previous tax system for the current fiscal year, 25.78% selected the new system, and 11.11% expressed uncertainty.
- 44% of respondents were impacted by deductions and exceptions for choosing tax regimes, 22% by charge rates, 11% by complexity of filing returns and expected and 6% by trust in charge specialists and different variables.

Tax Filing

- 61% of respondents have not switched tax regime, while 39% have
- 72% of respondents pay tax under the head 'Income from salary', 22% under 'Income from business and professions', and 6% under 'Income from other sources'
- Of those surveyed, 22% file taxes under the new system, whereas 78% file under the previous one.

Conclusion

Despite recent improvements to the New Tax Regime (NTR) in Budget 2023, the majority of Indian taxpayers continue to opt for the Old Tax Regime (OTR). There are several factors that contribute to this tendency, including the accessibility of derivations and exceptions under the OTR, worries about the expanded intricacy of documenting returns under the NTR, and vulnerability encompassing the possible advantages of the new system.

Reasons for selecting the OTR

- Allowances and exceptions: Taxpayers with significant investments or expenses can lower their tax liability thanks to the OTR's expanded list of deductions and exemptions.
- Adaptability and customization: The OTR gives more prominent adaptability and command over charge arranging, permitting people to fit their derivations and exclusions to their particular monetary conditions.
- Intricacy of the NTR: Some respondents were hesitant to switch because they were concerned about the increased complexity of filing returns under the NTR, particularly for those who were unfamiliar with the new system.
- Vulnerability about NTR benefits: Some respondents expressed doubt regarding the NTR's long-term benefits and concerns regarding potential regime modifications.

Recommendations

The following recommendations can be given for the study undertaken.

- **Increase awareness of the new tax system-** Many respondents were not aware of the new tax system or its benefits. Targeted outreach campaigns could be implemented through government websites, social media and other channels favoured by younger demographics and lower-income groups. Simplifies the process of selecting and reporting taxes under the new system.
- **Some respondents found the new tax system complicated-** Simplifying the tax election and reporting process under the new system may encourage wider adoption. Resolving issues related to deductions and exemptions under the new system Concerned about losing out on deductions and exemptions under the new tax structure were some of the replies. These worries can be allayed by outlining the advantages and restrictions of the new system in clear terms. Give taxpayers support and informative materials. To better comprehend and negotiate the various tax systems, a large number of respondents would benefit from educational materials and support services including webinars, tax clinics, and online tutorials. Use rewards and penalties to incentivize tax compliance.
- **Implementing a balanced approach that includes incentives for timely filing and compliance and penalties for noncompliance can encourage responsible tax behaviour-** Doing additional research to understand taxpayers and decision-making processes. Further research is needed to gain a deeper understanding of taxpayer preferences, decision-making processes, and challenges in tax selection and reporting. This information can be used to inform future policies and support efforts.

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Annexure

- Q1. Gender
- Male
 - Female
- Q2. Age (in years)
- 21-35
 - 36-50
 - 51-65
 - 66-80
 - above 80
- Q3. Occupation
- Businessmen
 - Salaried
 - Retired
 - Student
 - Other
- Q4. Annual Income
- Below 5 lakhs
 - 5-10 lakhs
 - 10-15 lakhs
 - 15-20 lakhs
 - Above 20 lakhs
- Q5. Do you pay income tax?
- Yes
 - No
- Q6. Are you aware of the different tax regimes available in India?
- Yes
 - No
- Q7. If yes, please tell about the tax regimes you are aware of? (eg- old tax regime, new tax regime or both)
- Q8. How did you learn about the different tax regimes?
- Government websites
 - Tax advisors
 - News articles

- Family and friends
 - Social media
 - Other
- Q9. Which tax regime have you chosen for current financial year?
- Old Tax Regime
 - New Tax Regime
 - Not Sure
- Q10. What are the factors which influenced your choice of tax regime?
- Tax rates
 - Deductions and exemptions
 - Complexity of filing returns
 - Expected income level
 - Risk aversion
 - Trust in tax authorities
 - Other (please specify)
- Q11. Have you switched tax regime?
- Yes
 - No
- Q12. Under which Head of Income, your income becomes taxable.
- Income from Salary
 - Income from House Property
 - Income from business and professions
 - Income from other sources
 - Income from Capital gain
- Q13. Under which regime did you file your income last time?
- Old Tax Regime
 - New Tax Regime.



SUSTAINABLE SUCCESS: EXPLORING THE FINANCIAL IMPACT OF SUSTAINABLE PRACTICES IN INDIAN COMPANIES

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ABSTRACT

This research paper delves into the intricate relationship between sustainable practices and financial outcomes within Indian companies, with a specific focus on key financial parameters. Against the backdrop of the increasing global emphasis on environmental, social, and governance (ESG) considerations, this study aims to unravel the specific financial implications of embracing sustainability in the corporate landscape of India. In addition to an extensive analysis of relevant literature, empirical studies, and financial reports, the paper explores the influence of Indian sustainable standards on the relationship between sustainability initiatives and financial success. By concentrating on Indian companies, the research aims to provide nuanced insights into how unique cultural, economic, regulatory factors, and adherence to Indian sustainable standards contribute to the intersection of sustainability and financial prosperity. The findings, with a particular focus on identified financial success of companies and compliance with Indian sustainable standards, are expected to offer valuable guidance for businesses, policymakers, and investors keen on understanding and leveraging the symbiotic relationship between sustainable practices and financial performance in the Indian corporate context.

KEYWORDS: Sustainable Practices, Financial Success, Sustainable Standards.

Introduction

In today's rapidly evolving corporate landscape, sustainability has emerged as a pivotal consideration for businesses worldwide. The growing global emphasis on environmental, social, and governance (ESG) factors has prompted companies to re-evaluate their practices, seeking a harmonious balance between profitability and responsible conduct. Nowhere is this delicate equilibrium more critical than in the context of Indian companies, where unique challenges and opportunities intersect.

Context and Relevance

Introduction to Sustainable Practices

Sustainability, often defined as meeting present needs without compromising the ability of future generations to meet their own needs, transcends mere corporate responsibility. It encompasses a holistic approach that considers environmental stewardship, social equity, and ethical governance. As the world grapples with climate change, resource depletion, and social inequalities, businesses are increasingly recognizing that sustainable practices are not just a moral imperative but also a strategic necessity.

Relevance for Indian Companies

India, with its rich cultural heritage, diverse population, and complex economic landscape, faces distinct sustainability challenges. Here's why sustainability matters profoundly for Indian firms:

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- **Population Density and Resource Scarcity**
 - India's population density places immense pressure on natural resources. Water scarcity, land use conflicts, and energy demands necessitate innovative sustainable solutions.
 - Companies must navigate resource constraints while ensuring growth and profitability.
- **Cultural Diversity and Social Impact**
 - India's cultural fabric is woven with values of community, compassion, and interconnectedness. Sustainable practices align with these cultural norms.
 - Social impact considerations—such as fair wages, employee well-being, and community development—play a pivotal role.
- **Regulatory Environment and Compliance**
 - Indian regulatory bodies increasingly emphasize ESG reporting and compliance.
 - Companies must adhere to evolving standards, demonstrating transparency and accountability.

Significance

Understanding the financial implications of sustainability practices is paramount for Indian companies' long-term success. It extends beyond profit margins and stock prices:

- **Profitability and Reputation**
 - Sustainable practices directly impact financial performance. Companies that integrate ESG considerations often experience improved profitability.
 - Reputation risk—linked to environmental incidents, labour practices, or supply chain issues—can significantly affect market perception and investor confidence.
- **Stakeholder Trust and Loyalty**
 - Sustainable companies build trust with stakeholders—investors, customers, employees, and communities.
 - Long-term loyalty hinges on a company's commitment to ethical conduct and positive societal impact.
- **Regulatory Compliance and Risk Mitigation**
 - Non-compliance with sustainability standards can result in legal penalties, reputational damage, and operational disruptions.
 - Proactive adherence to sustainable practices mitigates regulatory risks.

In this research paper, we delve into the intricate relationship between sustainable practices and financial outcomes within Indian companies. By analyzing key financial parameters and exploring adherence to Indian sustainable standards, we aim to provide nuanced insights. Our findings will guide businesses, policymakers, and investors keen on leveraging the symbiotic relationship between sustainability and financial prosperity in the Indian corporate context.

Objective

The objective of this research is to empirically examine the impact of companies adhering to sustainable practices, as per Indian sustainable standards, on their financial performance, as measured by Return on Equity (ROE), Return on Assets (ROA), and Return on Sales (ROS). This study aims to provide insights into whether there is a significant relationship between sustainability initiatives and financial performance in Indian companies, thereby contributing to the understanding of sustainable business practices in the Indian context.

Literature Review

- **Sustainable Practices and Financial Performance:** Numerous studies have investigated the relationship between sustainable practices and financial performance across various industries and regions. While some research suggests a positive correlation between sustainability initiatives and financial outcomes (Eccles et al., 2014; Flammer, 2015), others argue that the relationship is contingent upon factors such as industry context, firm size, and geographical

location (Orlitzky et al., 2003; Delmas & Pekovic, 2013). In the context of Indian companies, limited empirical evidence exists, highlighting the need for further exploration.

- **ESG Considerations and Investor Behavior:** Environmental, social, and governance (ESG) factors have gained prominence in investment decision-making, with investors increasingly considering sustainability criteria alongside traditional financial metrics (Clark et al., 2017; Gond et al., 2017). Research indicates that companies with strong ESG performance attract greater investor interest and may experience lower capital costs (Flammer, 2015; Goss & Roberts, 2011). Understanding investor preferences and the financial implications of ESG integration is crucial for Indian companies seeking to attract capital and enhance shareholder value.
- **Cultural Influences on Sustainability Practices:** Culture plays a significant role in shaping attitudes and behaviors towards sustainability within organizations (Hofstede, 1980; Agle et al., 2008). In the Indian context, cultural values such as respect for nature (Vaswani, 2014), community orientation (Chatterji & Toffel, 2010), and ethical governance (Saha & Darnton, 2005) may influence the adoption and effectiveness of sustainable practices. Exploring how cultural norms interact with corporate sustainability initiatives can provide valuable insights into the drivers of sustainable behavior in Indian companies.
- **Regulatory Landscape and Compliance Challenges:** Indian companies operate within a complex regulatory environment characterized by evolving sustainability standards and reporting requirements (Ramaswamy & Mishra, 2018; Business and Sustainable Development Commission, 2017). While regulatory mandates aim to promote transparency and accountability, compliance challenges persist due to varying interpretations of sustainability guidelines and resource constraints (Kaur & Kaur, 2018). Understanding the regulatory landscape and its impact on sustainable practices is essential for companies navigating compliance obligations while maximizing financial performance.
- **Industry-specific Perspectives on Sustainability:** Different industries face unique sustainability challenges and opportunities, influencing their approach to sustainable practices and financial performance (Russo & Fouts, 1997; Buhr & Wijnhoven, 2019). For example, the manufacturing sector may focus on resource efficiency and supply chain management, while service-oriented industries prioritize social impact and stakeholder engagement (Perrini et al., 2007; Klassen & McLaughlin, 1996). Examining industry-specific perspectives can provide contextually relevant insights into the relationship between sustainability and financial success in Indian companies.

Research Gap

The literature review reveals a critical gap in current research on the relationship between sustainable practices and financial performance in Indian companies. While there is a growing interest in the financial benefits of sustainability, there is a lack of empirical evidence and analysis for the Indian context, which faces distinct sustainability challenges and opportunities. These include addressing the resource scarcity and environmental degradation, balancing the cultural diversity and social impact, and complying with the evolving regulatory environment and standards. Moreover, most of the existing studies have used aggregate measures of sustainability and finance, neglecting the specific aspects and dimensions of both constructs. Bridging these gaps is crucial for understanding and leveraging the symbiotic relationship between sustainable practices and financial performance in the Indian corporate context.

Hypothesis

- H₁:** It is hypothesized that companies adhering to sustainable practices, as per Indian sustainable standards, will demonstrate significantly higher levels of financial performance, as measured by Return on Equity (ROE), Return on Assets (ROA), and Return on Sales (ROS), compared to companies not adhering to sustainable practices.
- H₀:** There is no significant difference in financial performance, as measured by Return on Equity (ROE), Return on Assets (ROA), and Return on Sales (ROS), between companies adhering to sustainable practices and those not adhering to sustainable practices as per Indian sustainable standards.

Methodology

- **Research Design:** This study adopts a quantitative approach to analyse the relationship between sustainable practices and financial performance in Indian companies among various industries listed in stock exchange.
- **Data Collection:** Data for this research will be gathered from financial reports and sustainability disclosures of 20 Indian companies.
- **Data Analysis:** The research methodology includes quantitative analysis of financial statements and qualitative assessment of sustainability reports. Descriptive statistics will be used to summarize the data and compare the financial performance of companies adhering to sustainable practices versus those that are not. Additionally, inferential statistics, such as Regression analysis, will be employed to test for significant differences in financial performance between the two groups.

Variables adopted are Independent variables: ROA, ROS, ROE and sustainable ESG rankings of the companies issued by as Dependent variable.

- **Limitations:** Despite efforts to ensure rigor and validity, this study is subject to certain limitations. Firstly, the availability of data may vary among companies, potentially impacting the comprehensiveness of the analysis. Secondly, reliance on self-reported financial and sustainability data may introduce biases or inaccuracies. Furthermore, findings from this study may be specific to the sample of companies studied and may not be representative of the entire population of Indian companies. Lastly, the study design may not allow for causal inferences about the relationship between sustainable practices and financial performance

Analysis of Variables and their Relationship

Year	ROA	ROE	ROS	ESG Rank
2013	0.1022	0.20675	0.0428	1
2014	0.1092	0.23817	0.0414	1
2015	0.1151	0.23364	0.0399	2
2016	0.1264	0.25594	0.0385	3
2017	0.1249	0.25512	0.0382	3
2018	0.0949	0.20856	0.0411	1
2019	0.0866	0.20148	0.0402	1
2020	0.2347	0.19448	0.0406	4
2021	0.23	0.16127	0.0437	1
2022	0.1038	0.16991	0.0458	1
2023	0.1298	0.21263	0.0497	3
ESG ranking				
A	4			
B+	3			
B	2			
B-	1			
REGRESSION				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
ROA	0.094604	0.029562	3.200233	0.010827
ROE	0.191977	0.018491	10.38219	2.62E-06
ROS	0.042791	0.00216	19.8141	9.86E-09

Confidence level 95%

Interpretation

- The coefficients indicate the magnitude of the impact of each independent variable (ROA, ROE, ROS) on the dependent variable (ESG Rank).
- The t-statistics measure the significance of each coefficient. Typically, t-values greater than 2 (or less than -2 for negative coefficients) indicate statistical significance.

- The p-values associated with each coefficient test the null hypothesis that the coefficient is equal to zero. Low p-values (typically below 0.05) indicate that the coefficient is statistically significant.
- In this case, all three coefficients (ROA, ROE, ROS) have low p-values, indicating that they are statistically significant in predicting the ESG Rank.
- The positive coefficients for ROA, ROE, and ROS suggest that higher values of these variables are associated with higher ESG Rankings.
- Based on the t-statistics, ROE has the strongest impact on ESG Rank, followed by ROS and then ROA.

Findings

Based on the regression analysis results, several findings can be highlighted:

- **Impact of Financial Performance on ESG Rank:** The analysis reveals a statistically significant relationship between financial performance metrics (ROA, ROE, ROS) and ESG Rank. Companies with higher values of ROA, ROE, and ROS tend to have higher ESG Ranks.
- **Relative Influence of Financial Metrics:** Among the financial performance metrics studied, ROE demonstrates the strongest impact on ESG Rank, followed by ROS and then ROA. This suggests that profitability, as measured by ROE, is a key driver of environmental, social, and governance considerations in company evaluations.
- **Consistency in Results:** The findings are consistent across multiple years, indicating the robustness of the relationship between financial performance and ESG Rank over time.
- **Statistical Significance:** All three financial performance metrics—ROA, ROE, and ROS—have low p-values, indicating their statistical significance in predicting ESG Rank. This strengthens the validity of the results and suggests a clear association between financial performance and ESG considerations.
- **Policy Implications:** These findings underscore the importance of integrating environmental, social, and governance factors into corporate decision-making processes. Companies that prioritize sustainability and demonstrate strong financial performance may be better positioned to attract investment, mitigate risks, and enhance long-term value creation.

Overall, the findings highlight the symbiotic relationship between financial performance and sustainability, emphasizing the need for companies to adopt responsible business practices to achieve both financial success and ESG excellence.

Recommendations

- **Integrate Sustainability into Corporate Strategy:** Companies should recognize the strong association between financial performance and sustainability metrics such as ESG Rank. Integrating sustainability goals into corporate strategy can drive long-term value creation and enhance overall competitiveness.
- **Enhance Transparency and Reporting:** Transparent reporting of ESG initiatives and performance metrics is crucial for investors and stakeholders to assess a company's sustainability efforts. Companies should enhance their disclosure practices to provide comprehensive and accurate information on environmental, social, and governance performance.
- **Invest in Sustainable Practices:** Given the positive relationship between financial performance and sustainability, companies should consider investing in sustainable practices that improve efficiency, reduce environmental impact, and foster positive social outcomes. This may include initiatives such as renewable energy adoption, waste reduction programs, and community engagement efforts.
- **Strengthen Governance Structures:** Robust governance structures are essential for ensuring effective oversight and accountability in sustainability initiatives. Companies should strengthen board oversight of sustainability matters, establish clear responsibilities for ESG management, and integrate sustainability considerations into executive compensation frameworks.

- **Engage with Stakeholders:** Collaboration with stakeholders, including investors, customers, employees, and communities, is critical for advancing sustainability goals. Companies should actively engage with stakeholders to understand their expectations, address concerns, and build trust through transparent communication and meaningful dialogue.
- **Continuous Improvement and Benchmarking:** Companies should strive for continuous improvement in sustainability performance by setting ambitious targets, monitoring progress, and benchmarking against industry peers and best practices. Regularly assessing and reassessing sustainability initiatives can drive innovation and foster a culture of continuous learning and improvement.
- **Adapt to Regulatory Changes:** Given the evolving regulatory landscape and increasing focus on sustainability disclosure and compliance, companies should stay abreast of regulatory developments and proactively adapt their practices to meet emerging requirements. Compliance with sustainability regulations not only mitigates legal risks but also enhances reputational and brand value.

Conclusion

In conclusion, this research paper has explored the intricate relationship between sustainable practices and financial outcomes within Indian companies. Against the backdrop of increasing global emphasis on environmental, social, and governance (ESG) considerations, this study aimed to unravel the specific financial implications of embracing sustainability in the corporate landscape of India.

Through an extensive analysis of relevant literature, empirical studies, and financial reports, as well as the exploration of Indian sustainable standards' influence, this research provided nuanced insights into how unique cultural, economic, and regulatory factors, along with adherence to Indian sustainable standards, contribute to the intersection of sustainability and financial prosperity in Indian companies.

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SUSTAINABLE LIVING: REVEALING ETHNIC VIEWS AND HUMAN BEHAVIOR OF ANCIENT INDIANS

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ABSTRACT

A future that is environmentally conscious depends critically on the Human Nature connection. In the past, people lived extremely sustainable lives driven solely by necessity and maintained a tight relationship with environment. This way of life is exemplified by traditional customs and societies, who not only support them but also mean them by essentially each person putting the values into practice. Then, as a result of acquiring knowledge by doing, were enacted down through the family and community populations' ancestors. Through the years, these principles have become antiquated in the eyes of current populations and are frequently disregarded and thrown away as outdated. In the era of modernization, under the aegis of convenience and comfort we humans have started to lead a non-sustainable lifestyle, driven by wants and not by needs. For a sustainable future the human-nature connect has to be reenergized to follow a sustainable practice which were present long before the current population took birth. The empathy of humans for Nature needs to be rekindled. This work illustrates a few of these practices followed in ancient India, supported in the culture and followed virtuously.

KEYWORDS: Sustainable Lifestyles, Human Behavior, Indian Culture, Sustainable Development Goal.

Introduction

Culture is a supportive environment that spreads perspectives and so creates behavioural patterns. Sustainability is a responsible behavior that instills a method of meeting current demands without causing any losses for future demands. This involves efficiently conserving and sustaining ecosystems and our natural surroundings. Adopting culture as a channel for instilling environmental sustainability in the way we live is vital for a sustainable tomorrow. Human behavior is a response to numerous conditions. It includes of interactions, discussions, choices, and other activities. It is critical to investigate how individuals think or behave in specific ways in various instances. It prompts a person to delve more thoroughly into the motives and impulses of human conduct, which are impacted by cultural ethnic, and ecological factors. The cultural viewpoints, on the contrary tandem, are ideas that impact individuals and are influenced by traditional customs. A cultural viewpoint integrates the society in order to develop a social relationship with humanity as a whole, with sustainable development as the primary strategy. Culture is comprised of a distinct set of beliefs, values, morals, and behaviors that are prevalent in a certain community.

Cultural that Shapes Human Behaviour

Traditional values are those that are learnt and passed down through decades of communities in a cohesive framework of life. The amount of knowledge common in a society is excessive for any

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single person to comprehend and grasp. Most people are familiar with elements of ethnic knowledge and are consequently classified at multiple levels centred on their aptitude. Cultural principles are a society's basic views about what is right and acceptable. The daily routine was built on maximizing daytime (sun-light) and accomplishing the majority of outside activities / duties within the naturally lighted time period. Domestic responsibilities that began shortly after the rising of the sun's rays were frequently completed after the setting of the sun. Ancient people suggested operations in the most sustainable way conceivable. Everything, from rising up to resting, was well planned. If the chronology has been thawed for sleeping, ancient human used the time well to obtain a sustainable livelihood. Since lighting technology was not established in ancient times, our forefathers went to sleep at twilight and awoke when the sun set. The sleeping schedule was timed to correspond with the seasons. The everyday routine of Ancient India was considerably more sustainable. As demonstrated by the cultures ' sustainable practices, human needs were modest, and lifestyle ensued.

Aims and Objectives

Creating a human-nature relationship specialty

- To recommend basic, easy ways for minimizing environmental devastation and to embrace an environmentally friendly way of life.
- These goals, when combined with the precise concrete strategies outlined in the Objectives section below, have the potential to bring current generations to more environmentally friendly lifestyles.
- Addressing the Environmental Gap by using numerous conventional methodologies and historic living patterns.
- Using ancient literature to highlight the sustainable strategy in order to trace back different cultural perspectives on sustainability.

The Environmental Sustainability Gap

This environmental gap emphasizes the importance of an in-depth knowledge of the intended methods for boosting ecological and effective implementation to overcome it. By narrowing the environmental gap, one may come closer to achieving objectives for sustainability that foster a more environmentally friendly future. The environmental gap is a discrepancy in being sustainable in everyday lifestyle choices and objective accomplishment. However, it has become crucial to use one major criterion of sustainability when choosing a product.

Selling methods include a variety of appealing characteristics that divert consumer focus away from environmental sustainability resulting in customers making sustainable decisions. Culture serves as a link between the natural and human worlds. Culture, on the whole, is a driving force that drives individuals to carry out their daily tasks. Each individual is frequently influenced by the cultural standards that he or she displays. The willingness of consumers to buy something that is environmentally friendly varies depending on their actual use. Products with lower organic value are ingested, whether deliberately or inadvertently. This necessitates segmentation in order to keep the selection of eco-friendly products growing.

Traditional Habits of Ancient Indians for Sustainable Lifestyle

Modern era is primarily about adapting to the captivating workplace atmosphere that is tinged with grandeur and less about being in tune with nature. The most important consideration is integration with the natural daylight periods. In terms of graphs, our present sustainable performance is less than average. India constitutes one of the oldest ancient civilizations that has benefited the entire planet. We are trailing in our sustainable conduct in the twenty-first century mainly because of incorrect habit development and misinterpretation of several historically acceptable activities. Nations around the world look up to India for its noteworthy growth in behaviour towards the environment, spirituality, innovations, and culture.

India has a custom of cleaning teeth using disposable twigs of Neem and Babool. It was a highly effective sustainable method of cleaning teeth used in medieval India. The sticks were thrown away after usage because the material was completely biodegradable and had no negative impact on the ecosystem. These kinds of plants possess a variety of antibacterial characteristics. The use of such chewing sticks minimized the incidence of dental plaques and pyrogen infection, resulting in better oral hygiene. Given the current situation, every toothbrush we utilized in our entire lives is somewhere in this





world after it is disposed, resulting in not environmentally friendly functionality. The usage of electric toothbrushes exacerbates the situation.





Furthermore, currently, commercialized toothbrushes are composed of bamboo, but the bristles themselves are made of nylon-based material, which has an influence on the environment. The raw ingredient used in cleaning goods is entirely sustainable, so it returned to nature without causing any harm. Stopping advances in cosmetic items generated an artificial base mixture that contaminates water bodies, eventually impacting the natural world.



The United Nations Agenda 2030 Sustainable Development Goals (SDGs) make special reference of the relationship and connection involving water and human ecosystems.

In ancient India people used the cleansing products made up of roots, fruits and twigs of various plants and trees that contain anti microbial properties and antiseptic properties to care for the skin as well as not pollute the environment. India has always been a self-sustaining country that has a resourceful attitude to create and cultivate the products of its own. It is not the lack of knowledge or poverty but the affinity that is generated from the culture that makes the people in this country use the products as much as necessary. The behavior of the Indian culture emphasizes more towards the needs rather than wants.

Table 1: Daily Routine

Prahar (Time)	Activity	Benefit	Sustainability	References	SDG's
Prahar 1 6 am to 9 am	Praying Meditating Breakfast Planning the work	Praying is an important activity for mental health because it keeps people grounded. Meditation can help you focus within and achieve the steadiness you need to get through the day consciously. A balanced breakfast enables fulfill through the entire day's responsibilities with plenty of energy, but a substantial meal in the morning is suddenly digested due to the entire day's labor.	Ancient Indians were the people with superior wisdom in terms of physical, emotional, and spiritual sustenance. The prayer was an integral component of the long-term regimen. It catered to spiritual nourishment. Meditation and yoga were practiced for both physical and emotional well-being. Furthermore, if the job is scheduled before the start of the day, the resources needed for the activity are used with care. This assured that no natural resources were wasted.	उपस्पृश्यद्विजोनित्यमन्नमद्यात्ममाहितः।भुक्त्वाचोपस्पृशेत्सम्यग्भिः खानिचसंस्पृशेत्॥ After washing, the twice-born person should constantly consume with a clear head. After eating, cleanse and sprinkle water on sense organs. Water purifies the physical body, truth purifies the psyche, intelligence, and austerity purify the spirit, and wisdom purifies rational thinking.	
Prahar 2 9 am to 12 pm	Work mode	Because there were no lights like LED or LCD back then, the ancient Indians made good use of daylight. The entire project was designed around natural light.	Among the most effective ecological practices was a meticulously organized day with optimum use of ambient illumination and no power.	तदेवसक्तःसहकर्मगतिलिङ्गमनोयत्रनिषक्तमस्य॥ The desirer approaches the thing that occupies his mind by working.	 
Prahar 3 12 pm to 3 pm	Lunch Rest (Nap)	A day break was required to replenish energy, therefore lunch and relaxation (nap) were required. This enabled me to get through the rest of the day with reasonable energy and without becoming exhausted.	Humanity was sparse in the past. The demand as well as supply were in balance. As a result, no food was wasted, and resources were used efficiently to generate the meal..	ज्ञानंतपोऽग्निराहारोमूत्रमनोवायुपाञ्चनम्।वायुःकर्माकालोचशुद्धःकर्तृणिदेहिनाम्। Awareness, confinements, food, fire, plastering, soil, thoughts, water, rituals, sunlight, and time are the purifiers of people.	

<p>Prahar 4 3 pm to 6 pm</p>	<p>Work</p>	<p>The remaining half of the task is done to maximize the utilization of sunlight.</p>	<p>All of the activities are in harmony with nature. The job was so environmentally friendly that it used the most environmentally friendly technique. Among these tasks were the use of natural fertilizers, rainwater gathering, planting structures, adhering to, and others.</p>	<p>मधुवाताऋतायतेमधुंक्षरन्तिसिन्धुः। माध्वीर्नःसन्तोषधीः॥६॥ मधुवाताऋत-अयते, मधुंक्षरन्तिसिन्धुः, माध्वीः-नःसन्तुओषधीः। Rigveda, Mandal 1, Sukta 90, Verse 6 Vayudev provides honey to those who are engaged in the yagya Karma. Rivers carry the flow of water yielded with honey, let there be various medications available around the world for us, unlike honey. Let there be a complete sweetness in the dawn and dusk. And let there be a rain which should be a complete sweetness The environment is blissful for the people who relish life with minimalistic living. We are blessed with the sacred water that our rivers contain, we are blessed with the source of light and forest cover that provide sustenance for good health. For us, the sun is an important source of energy. Along with this trees and plants help maintain a human nature connection with the exchange of energy that brings harmony to the environment.</p>	<div> <p>13 CLIMATE ACTION</p>  </div> <div> <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>  </div>
<p>Prahar 5 6 pm to 9 pm</p>	<p>Family time Evening Prayers dinner</p>	<p>Whenever the sun sets, the job is over, and the remainder of the day is spent with relatives and close companions. This enables psychological and societal resilience. After eating, an offering of appreciation and higher consciousness is said. Then supper is served with the entire family present.</p>	<p>The development of sustainable cities and communities was only feasible when individuals in society interacted socially and exchanged ideas. The ancient people had plenty of time to socialize because the labor was completed with a sunset.</p>	<p>वसुधैवकुटुम्बकम् This is from the Maha Upanishad. The phrase here means the whole earth (world) is like one family.</p>	<div> <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>  </div>
<p>Prahar 6 9 pm to 12 am</p>	<p>And Sleep mode to begin</p>	<p>After utilizing sunlight for the duration of the task, darkness is employed to allow the body to relax. Melatonin is organically created by the human body when it is in sync with the biological clock.</p>	<p>Previously, there had been no electricity available, thus work would cease at nightfall. This allowed every individual to access inexpensive and renewable energy resources. There was no environmental impact from the exploitation of energy sources like including natural gas, crude oil, and others.</p>	<p>सनइन्द्रः शिवः सश्वदागोमण्डवारुरुधारेवादोहते निषिक्तश्चन्द्रतेजोभिःस्यतेजगतोर विः।ओषध्यःषडूसामेध्यास्तदन्नप्राणिनांभुवि।एवंभानुमयंह्यन्नभूतानां प्राणधारणम्।नाथोय्यसर्वभूतानां समात्तंशरणं व्रज।। Mahabharat (Vanaparva) Verse 3.3.8 All life on earth is sustained by the plants with 6 tastes that the sun and moon energize and give light to the food that keeps every human being alive is therefore embedded with solar energy, the sun is the source of all life does seeks protection from the Sun god to have a clean source of energy</p>	<div> <p>7 AFFORDABLE AND CLEAN ENERGY</p>  </div>

Prahar 7 12 am to 3 am	Sleep	A good night's sleep is essential for mental and physical wellness. This helps to ensure that you get enough sleep. During ancient times, issues such as sleep deprivation, unrest, and anxiety were kept away.	Living in peace is an essential aspect of culture and civilization. The ancient Indians' sustainable chronology shows that the most perfect way to live an environmentally friendly way of life was the best utilization of assets and the synchronization of their daily lives with the biological schedule.	<p>ॐ द्यौः शान्तिरन्तरिक्षं शान्तिः, पृथ्वी शान्तिरापः शान्तिरोषधयः शान्तिः । वनस्पतयः शान्तिर्विश्वेदेवाः शान्तिर्ब्रह्मशान्तिः, सर्वेशान्तिः, शान्तिरेव शान्तिः, सामाशान्तिरिधि ॥ ॐ शान्तिः शान्तिः शान्तिः ॥</p> <p>This verse clarifies the significance of peace in the entire sky, space, Earth, plants, herbs, and water, as well as throughout the entire universe. may there exist peace and peace alone in this world, as well as let there be peace between all beings.</p>	
Prahar 8 3 am to 6 am	Waking up at Brahmamuhur at Tasking morning regimen Cleaning	Waking up before sunlight aids in the completion of the cleansing activity and integrates the human body with the circadian cycle.	Sustainable development happens on several levels. Getting up early sunrise is physically, intellectually, and spiritually sustainable. Physically, rising up early is in tune with the circadian cycle. Emotionally: in the early hours of the day, the energies are favorable, and there is a sense of cleanliness that activates the beneficial energy. Spiritually: recognizing and engaging with the supreme/divine spirit inspires thankfulness and maintains one rooted. Tainted ideas, on the other hand, have no significance in an environment that fosters creativity and self-worth.	<p>आचम्यप्रयतोनित्यमुभसंधेसमाहितः शुचौदेशेजपज्जप्यमुपासीतयथाविधि ॥</p> <p>After being cleansed by drinking water, at the two twilights of each day, one should chant the Mantra in a clean place and worship it in accordance with the prescribed rituals.</p>	

Green Purchasing Hoarding and Obsession

Every manufacturer must have a feeling of commitment to provide environmentally friendly products. Because of the product's organic sustainability, the consumer maintains independent decision over whether to purchase it. Green living is emphasized in every culture. Even today, the items utilized in numerous religious and cultural organizations have specified long-term aims and mostly rely on renewable energy to minimize negative environmental impact. Discounts, incentives, and packaging are generally viewed by consumers as having an important part in tempting and inspiring them to acquire a product. Yet it is the obligation of both the seller and the buyer to make long-term judgments. Acquisition and accumulation are central to unpractised methods of sustainability.

India and the G20 Presidency

India is now holding the G20 presidency under the banner of Vasudhaiva Kutumbakam, which means "sustainability (respect for nature), one earth, one family."

The subject is properly called, since it encompasses all three S's of Spirituality, Sustainability, and Social Impact, all of which lead to Vasudhaiva Kutumbakam. The G20 meeting aided in rallying backing for high-level concepts centred on equitable growth. It is being shown that India's G20 chairmanship has accelerated the embrace of environmentalism. The steps made by India to accomplish SDGs are described above. Indian has exhibited the lifestyle and culture, along with its custom, and spiritual onset of living a healthy life. The G20 summit is responsible for addressing social and environmental issues that influence public health and contribute to a low standard of environmental sustainability.

The G20 summit is responsible for addressing ecological and sustainability problems that harm human well-being and contribute to low levels of sustainability. India is ready to fulfill its environmentally conscious ambitions, and it will utilize its environmental policy structure to inculcate a culture that connects human conduct with the building of an environmentally friendly planet for both the current and tomorrow. A variety of projects and partnerships have also been critical in advancing sustainable development worldwide. It's vital to show that zero carbon imprints are left for future generations.

Values, Ethics, and the Indian Knowledge System

It is difficult to fathom how individual systems of thought evolve throughout time. The way individuals engage with nature has grown in importance throughout time. Numerous individuals have established systems of thought that manifested in their conduct depending on their cultural viewpoint. On a societal level, each individual has to comprehend how to employ the theoretical framework for environmentally friendly growth and apply values while implementing decisions. Spirituality and faith have shaped society in many ways in order to validate the relationship between humans and their environment and harmonize the way people act. Spirituality may be used as an illustration to motivate long-term conduct. It is critical to mainstream sustainable lessons in spiritual organizations in order to establish a sustainable worldview that acts as an integrative approach to cultivating active individuals by encouraging sustainable conduct. A modest way of life, for example, increases overall well-being and provides a rational approach to constructing a future that is environmentally friendly, in accordance with Hindu philosophy and Indian Knowledge system. As a result, the synopsis of this paper expands on the necessity to examine historic traditions and use them in the present period for greater societal transformation. Specific acts such as waste disposal, reusing, reducing, reconstruction, and remodelling are critical for linking environmentally conscious growth with ecological stewardship. Ancient Indian methods have undoubtedly inspired environmentally friendly norms that the rest of nations must embrace in order to lessen the likelihood of future catastrophe.

Conclusion

This study examines civilization and behavior among people as an avenue for improving living sustainably. This research places a special emphasis on the establishment of human-nature relationships. Numerous ecological tactics and ideas that were applied in prehistoric India and were incorporated into day-to-day living have been emphasized in this research. This initiative attempts to bridge the gap among interactions between humans and nature and to foster co-evolution for a more sustainable tomorrow. Therefore, the outcome of this study relies on the need of reconsidering past approaches and incorporating these into current practices in order to increase cultural progress. Ancient Indian habits unavoidably affected ecologically friendly living methods which the remaining nations of the globe must embrace to decrease the possibility of long-term deterioration.

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A COMPREHENSIVE TREND ANALYSIS OF TERM INSURANCE AND MUTUAL FUND GROWTH

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ABSTRACT

This study dives into the evolving landscape of mutual funds and term insurance across diverse demographics. It tackles key subjects like investment performance, consumer preferences, portfolio diversification, and regulatory impact. Delving deeper, it unpacks the intricacies of mutual funds by analyzing fund movement, the rise of green and thematic options, and their synergy with term insurance in building financial stability and wealth. Cutting-edge hybrid solutions are also explored, offering a comprehensive approach to financial planning. Concluding with insightful projections and analysis considering market shifts, regulatory changes, and evolving social trends, this research empowers consumers, advisors, and industry players to navigate the dynamic financial environment with informed decisions.

KEYWORDS: *Financial Stability, Future Predictions, Informed Decisions.*

Introduction

The growing complexity of the financial landscape, particularly regarding investments and insurance, can be a significant obstacle for those seeking to safeguard their financial future. Understanding the dynamic trends within these essential areas is, therefore, paramount. This study undertakes a comprehensive analysis of the rising prominence of both mutual funds and term insurance, illuminating the key factors influencing their trajectories.

Term insurance serves as a cornerstone of financial stability, offering families invaluable safeguards against unforeseen circumstances. This study delves into the intricate world of life insurance, examining trends in its penetration rates, premium structures, product development trajectories, and claim settlement ratios across various demographic and geographic segments.

While the path to wealth can be complex, mutual funds offer a powerful engine for growing your nest egg. This study delves into the secrets of successful investing, analyzing how asset allocation varies across fund types, how different categories perform, what strategies investors favor, and how regulations impact the game. Dive in and unlock the potential of these financial tools to build a brighter financial future.

Move beyond data points and delve into the dynamic world of consumer behavior in term insurance. This study analyzes the forces behind the popularity of specific features like riders and add-ons, illuminating how insurers are pivoting to meet evolving policyholder needs. It also shines a light on the growing role of digital platforms and tech advancements in terms of insurance delivery and distribution, offering valuable insights into the market's trajectory.

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The increasing complexity of financial markets has propelled mutual funds to the forefront of popular investment vehicles, offering professionally managed and diversified portfolios to a broad range of investors. This research delves into the intricacies of asset management practices, analyzing patterns of fund inflows and outflows, the emerging landscape of thematic and sustainable investment avenues, and the influence of international economic conditions on fund performance. The study's findings empower investors with valuable insights to navigate the dynamic financial landscape and make informed decisions toward achieving their investment goals.

This study goes beyond the surface, illuminating the powerful synergy between wealth creation through mutual funds and risk protection with term insurance. It unveils cutting-edge solutions that combine these elements, offering a streamlined path to financial security. Equipped with insightful trends and forward-looking predictions, the research empowers you to navigate the evolving financial landscape with confidence, preparing for market shifts, regulatory changes, and societal trends.

Empowering informed choices in a dynamic financial world, this study equips individuals, advisors, and industry players with a comprehensive understanding of growth trends in term insurance and mutual funds. As we delve into the intricacies of these essential planning tools, a clearer future emerges, guiding individuals to navigate and prosper in the complex world of insurance and investments.

Research Objectives

To understand the trends in Term Insurance and Mutual Funds in different age and income groups of investors.

Literature Reviews

In the article titled "*Mutual Funds Industry in India: A Growth Trend Analysis*," Prasanna K Baral and Dr. Kishore Kumar Das explore the global nature of uncertainty and volatility in stock markets. The dynamic nature of stock markets worldwide has consistently caused apprehension among investors, especially those who are small and medium-sized. Financial markets respond to this uncertainty by continually introducing innovations to safeguard investors' interests. A significant contributor to this protection and financial innovation is the role played by financial intermediaries. Globally, and notably in India, where retail investors constitute 97.7% of the 4.70 crore investor accounts, Mutual Funds have emerged as a crucial financial intermediary. These funds not only shield the interests of small investors from downward market risks through risk diversification but also facilitate the benefits of upward market returns. Additionally, Mutual Funds play a pivotal role in channeling capital into the financial market. The paper is structured into two parts: the first delves into the evolution of mutual funds in India, while the second analyses the growth trajectory of the mutual funds industry in the country.

In the article titled "Mutual Fund Industry-Analysis & Recent Trends," Anoop Pandey explores the remarkable progress of the Indian mutual fund industry. According to the Association of Mutual Funds in India (AMFI), the industry has achieved exceptional growth, witnessing an increase in Total Assets Under Management (AUM) from Rs. 1,01,565 Crores in January 2000 to Rs. 5,67,601.98 Crores by April 2008. The industry's evolution is noteworthy, transforming from a single-player, single-scheme (US-64) sector to a dynamic landscape with 34 players offering more than 480 schemes. This research paper comprehensively covers various aspects of the mutual funds industry in India. Commencing with the fundamental concept of mutual funds and their advantages, the paper provides detailed insights into the industry's growth and its current scenario. It sheds light on major mutual fund companies in India, explores different types of mutual funds based on structure, investment, load, and schemes, and discusses the various phases of the industry's growth. Additionally, the paper delves into the calculation of Net Asset Value (NAV), different investment plans, and factors influencing the assessment of mutual fund performance.

In her article titled "A Study of Fund Selection Behaviour of Individual Investors Towards Mutual Funds - concerning Mumbai City," Kavitha Ranganathan explores the intersection of consumer behavior from the marketing realm and financial economics, giving rise to the intriguing field of behavioral finance. Despite the gradual recognition of its significance, analysts often approach financial markets through statistical observations and technical and fundamental analysis. This overlooks the profound impact of 'financial behavior' on financial markets, presenting an avenue for sophisticated understanding.

Amidst industrial policy reforms, changes in the public sector, and financial sector, and the dynamic landscape of the Indian money market and capital market, Mutual Funds have emerged as a crucial avenue for small investors, significantly influenced by their financial behavior. Consequently, this

study endeavors to scrutinize various facets of individual investors' fund selection behavior toward Mutual Funds in the city of Mumbai. From the perspective of researchers and academicians, such a study holds the potential to enhance and broaden knowledge in this evolving field.

In the article titled "Indian Mutual Fund Industry: Current State & Future Outlook," Dr. Sisira Kanti Mishra emphasizes the crucial role of a robust financial system in shaping the success of any economy. The economic reforms of 1991 significantly impacted India's financial system, contributing to the overall development of the nation's economy. Presently, India's financial system stands out for its stability, contrasting with many other Asian countries grappling with financial market crises. Over the past decade, the Indian mutual fund industry has emerged as a noteworthy player in the country's financial market. It has become a pivotal financial service, particularly due to the government's initiatives to address issues related to UTI's US-64 and to ease tax liabilities on mutual fund earnings. Mutual funds now play a significant role in directing the savings of millions of individuals into equity and debt instruments. The paper aims to undertake a critical examination of mutual funds as a vital financial service within the Indian financial market.

In the article titled "A Study of Trend Analysis in Insurance Sector in India," M. Venkatesh delves into the extensive history of insurance in the country. Life Insurance, as it exists today, made its debut in 1818 with the commencement of operations by the Oriental Life Insurance Company. General insurance, however, entered the scene comparatively later in 1850, marked by the establishment of the Triton Insurance Company in Kolkata. The historical trajectory of insurance in India can be broadly categorized into three eras: a) Pre-Nationalization, b) Nationalization, and c) post-nationalization. The nationalization process commenced in 1956, with Life Insurance being the first to undergo this transformation. General Insurance followed suit in 1973, with the establishment of the General Insurance Corporation of India, serving as the controlling body and having subsidiaries such as New India, United India, National, and Oriental. The opening up of the insurance sector gained momentum in the backdrop of the Economic Reform process initiated in 1991. The Malhotra Committee, formed in the same year, submitted its report in 1994, leading to the passage of the Insurance Regulatory Development Act (IRDA) in 1999. Consequently, Indian insurance welcomed private companies, and private insurance operations effectively commenced in the year 2000.

The insurance sector in India has evolved into a highly favored investment destination for both Indians and Non-Resident Indians (NRIs). Currently ranking as the fifth largest insurance market among emerging global economies, India's insurance sector is experiencing sustained growth, driven by increasing interest in insurance, innovative product offerings, and diverse distribution channels.

Research Methodology

Research Objectives

To understand the trends in Term Insurance and Mutual Funds in different age and income groups of investors.

Research Gap

- Growth mysteries: Detailed data on term insurance and mutual fund growth across demographics and markets is missing, hindering informed decisions.
- Preference puzzles: Factors driving investor choices for specific features and types are unclear, limiting effective financial planning advice.
- Regulation riddles: The impact of changing rules on both instruments, including potential for innovation or roadblocks, needs further study.
- Hybrid headscratchers: The effectiveness and limitations of new products combining elements of both require in-depth analysis.
- Future fog: Predicting the future of these tools in light of economic shifts, tech disruptions, and societal changes remains a challenge.

Data Collection

- Quantitative Data: Perform surveys by engaging individuals from various demographic backgrounds offline to gain insights into their investment behaviors, preferences, and level of understanding regarding term insurance and mutual funds.

Qualitative Data

- In-depth interviews: Conducting interviews with corporates, IT professionals, and individual investors to gain insights into decision-making processes and product preferences.
- Focus groups: Organize focus groups with specific demographic segments to explore common themes and motivations regarding term insurance and mutual funds.

Sample Size – 100

Limitations of the Study

- Limited sample size: The sample size of 100 might not be sufficient to represent the diverse demographics and market segments for a comprehensive analysis. A larger sample size would provide more robust and generalizable findings.
- Potential for bias: The offline survey method might be susceptible to sampling bias and not accurately reflect the broader population. Consider incorporating online surveys or other data collection methods to improve representativeness.
- Limited data sources: Relying solely on market research reports and surveys might not capture the full picture. Consider incorporating additional data sources like government databases, industry reports, and academic research to gain a deeper understanding of trends and factors influencing growth.

Data Analysis

Focussing on Bangalore, the primary research explored the differences between two key age groups (above and below 40) across the city's diverse landscape, encompassing both urban and rural settings.

Some questions were asked such as:

- Are you familiar with term insurance and mutual funds?
 - 100 out of 100 people were aware of both term insurance and mutual funds.
 - 13 out of 100 people were not aware of mutual funds.
- What are the primary reasons for considering term insurance?
 - 66 out of 100 said the primary reason for considering term insurance (life insurance) is risk-free and fixed return.
 - 34 out of 100 do not consider term insurance as a good option.
- What are your primary goals for investing in mutual funds?
 - 31 out of 100 said the primary goal for investing in mutual funds because of their high return.
 - 69 out of 100 said it is very risky as it consists of high risk and the market is volatile.
- Do you have any investments in mutual funds and term insurance?
 - 97 out of 100 have either life insurance or mutual funds.
 - 17 out of 100 have both life insurance and mutual funds.
 - 3 out of 100 have none.
- What advice would you give to others about investing in term insurance and mutual funds?
 - 56 out of 100 advised if anyone wants to invest they should think twice before investing as it's very risky and the market is very volatile.
 - 31 out of 100 advised that everyone should invest their 20% of income in mutual funds or the stock market to generate more income.
 - 13 out of 100 do not have any knowledge of mutual funds.
- What is your occupation?
 - 51 out of 100 are either IT professionals or Corporates
 - 49 out of 100 are others.

Interpretation of the Survey Results

Most respondents (87%) are familiar with both term insurance and mutual funds, indicating some level of financial literacy. However, a knowledge gap exists with mutual funds, as 13% of respondents were unaware.

Term insurance is seen favorably, with 66% citing its risk-free nature and fixed returns as the primary reason for consideration.

Mutual funds are viewed more cautiously, with 69% highlighting the high risk and market volatility. This suggests a mixed understanding of potential returns and associated risks.

All respondents have life insurance, but only half invest in mutual funds, indicating a preference for risk-averse financial products.

Some Corporates they usually invest in mutual funds because they do not get enough time to watch the stock market daily and have life insurance policies to get the tax benefit of an 80C deduction in Income tax (in the old regime).

31% encourage responsible investing in mutual funds for higher returns, while 56% warn against high risks and market volatility. This highlights the need for personalized financial guidance based on individual risk tolerance and goals.

The survey mainly included professionals and business owners, with fewer retired participants. This might skew the results towards a risk-taking mindset and higher disposable income.

The survey reveals a mix of financial awareness and risk aversion among respondents. While term insurance is popular, mutual funds face skepticism due to perceived volatility. Providing targeted financial education and personalized investment advice could help bridge the knowledge gap and encourage responsible investment decisions.

Findings

Investment Portfolio Composition

- Viewed more cautiously, with 69% highlighting the high risk and market volatility.
- Only 50% of respondents invested in mutual funds, revealing a preference for risk-averse products.
- 31% encouraged responsible investing in mutual funds for higher returns, while 56% warned against the risks.
- Seen favorably by 66% of respondents due to its risk-free nature and fixed returns.
- All respondents had life insurance, suggesting a preference for risk-averse financial products.
- Occupational Influence on Investment Choices:
- Corporates, due to time constraints and tax benefits, tended to favor mutual funds and life insurance.

Investment Advice and Risk Perception

- 87% of respondents were familiar with both term insurance and mutual funds.
- However, 13% were unaware of mutual funds, indicating a knowledge gap.

Personalized Financial Guidance

- The findings highlight a need for personalized financial education and advice, considering the mixed understanding of risk and return among respondents.
- Tailored guidance based on individual risk tolerance and financial goals could enhance responsible investment decisions.

Demographic Considerations

- The survey skewed towards professionals and business owners, potentially influencing a risk-taking mindset and higher disposable income.
- The inclusion of retirees was limited, suggesting a focus on an economically active demographic.

Opportunities for Education and Intervention

- The research underscores opportunities for financial education initiatives to bridge knowledge gaps, particularly in the understanding of mutual funds.
- There is a need for interventions that address misconceptions about risk and volatility associated with mutual funds and encourage responsible investment behaviors.

Diversity in Financial Preferences

- The findings highlight the diverse financial preferences and perceptions of risk among the surveyed population.
- Tailoring financial products and advice to individual preferences and risk tolerance could foster a more inclusive and informed investment landscape.

Recommendation

Financial Education and Awareness:

- To develop targeted financial education programs.
- Focusing on mutual fund literacy.
- Utilize digital platforms to increase the reach.

Personalized Financial Guidance

- Encourage financial advisors to adopt a holistic approach.
- Develop risk-based investment portfolios.
- Promote robo-advisory platforms.

Addressing Risk Perception

- Highlight the risk-mitigating benefits of life insurance.
- Educate investors about risk management strategies.
- Promote responsible investment practices.

Product Innovation and Development

- Exploring new hybrid products.
- Developing flexible investment options.
- Utilizing technology for personalized investment experiences.

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CORPORATE SOCIAL RESPONSIBILITY: AN ALLEYWAY BY THE BANKING SECTOR IN INDIA WITH REFERENCE TO SBI

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ABSTRACT

In recent years, attention has been increasing on the societal impact of banking activities, including investments. As a result, some banks are now implementing ecological, societal and governance (ESG) standards in their investment judgments. ESG criteria consider a range of factors, such as environmental impact, labour practices, and corporate governance, in addition to financial returns Corporate Social Responsibility (CSR) is an important concern for banks as they seek to pursue their financial aims with their responsibility towards humanity and the ecology. Many banks have recognized this and are taking proactive steps to implement CSR initiatives. The concept of CSR has developed as an increasingly valuable factor in the banking sector in India. Banks in India have acknowledged that their actions and business plans influence humanity and the ecosystem, and they are responsible for contributing to long-term development and social well-being. This paper aims to probe the various Corporate Social Responsibility (CSR) proposals taken up by public and private banks in India and their impact on the various sections of society. It also aims to provide an insight view of these impacts by making some findings and giving certain recommendations to make this pathway more successful for the banking segment in India.

KEYWORDS: Corporate Social Responsibility (CSR), Public & Private Banking Sector, Sustainability.

Introduction

Corporate Social Responsibility (CSR) can be stated as "the accountability of businesses for their influences on humanity" This includes the impacts on stockholders, such as staff, buyers, dealers, communes, and the ecology." (The European Commission). Corporate Social Responsibility (CSR) is "**A company's sense of responsibility towards the community and environment (both ecological and social) in which it operates.**" (The Harvard Business Review). Each definition emphasizes different aspects of CSR, but all point to the common theme of an enterprise's accountability regarding humanity and environmental factors.

Corporate Social Responsibility (CSR) in India implies the responsibility of businesses to work in a socially accountable and supportable manner. (Companies Act, 2013) The concept of Corporate Social Responsibility (CSR) in India has grown over the ages and has developed an important motivational area for businesses, particularly after the start of the Companies Act, of 2013, which instructed certain companies to devote a proportion of their revenues to Corporate Social Responsibility (CSR) activities.

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According to the Companies Act, 2013, Businesses that have a net value of INR 500 crore or further, a trade of INR 1,000 crore or further, or a net return of INR 5 crore or further in each fiscal time are obligatory to employ at least 2 of their average net gains of the former three times on CORPORATE SOCIAL RESPONSIBILITY(CSR) events.

In India, Corporate Social Responsibility (CSR) encompasses a wide range of conditioning, encompassing education, healthcare, environmental sustainability, social construction, enhancement of chops, water and sanitation, the development of pastoral areas, and numerous others. In India, notable CSR systems include the Tata Group's community development programmes, the Infosys Foundation's healthcare and educational sweats, and Hindustan Unilever's sustainable living programmes. Corporate Social Responsibility (CSR) has greatly impacted India, with multitudinous companies funding the country's sociological and profitable growth.

The Ministry of Corporate Affairs (MCA) oversees the perpetration of Corporate Social Responsibility (CSR) in India. Companies must form a Corporate Social Responsibility (CSR) commission of at least three directors, one of whom must be an independent director. The commission's ideal is to develop and oversee the company's Corporate Social Responsibility (CSR) programme. In India, the enterprises that can be initiated under Corporate Social Responsibility (CSR) are multitudinous. Companies can also help sporting events, artistic events, and catastrophe recovery enterprises through systems. Companies are needed by law to take responsibility for their Corporate Social Responsibility (CSR) accomplishments in their periodic reports and on their web runners. The report should include information about the CSR systems that were started throughout the time, the quantum spent on every action, and the impact of these enterprises on humanity. Companies who fail to misbehave with Corporate Social Responsibility (CSR) rules must explain why in their periodic reports. This may affect in a desirable position and the creation of trust among shareholders and their communities to produce and sustain a connection between banks and their guests. **(Prabhu and Aithal, 2021).**

Failure to meet Corporate Social Responsibility (CSR) norms can affect in forfeitures and legal action. Corporate Social Responsibility (CSR) sweat in India has had a significant effect on society. Companies, for illustration, have launched gambles which offer training and vocational training to underprivileged children, healthcare services to remote regions, and environmental sustainability. This conditioning has aided in the advancement of numerous people's lives in India. Organisations are involved with addressing both profitable and non-financial consequences while remaining threat-apprehensive and transparent. Because of this, commercial social performance (CSP) has surpassed commercial fiscal performance (CFP) in elevation. **(Sayata Thakkar, 2020).**

The banking assiduity in India is a major contributor to the nation's frugality and plays an important part in promoting environmentally friendly growth and social wealth. Corporate Social Responsibility (CSR) conditioning in India's banking sector endsup promoting fiscal addition while promoting health, training, and the preservation of the terrain.

Literature Review

Every organisation must consider the goods of its Corporate Social Responsibility (CSR) opinions and peregrination on people and the terrain, through visible and ethical gist that contributes to licit growth, encompassing the health and safety of society. Numerous studies and explorations have been accepted on Corporate Social Responsibility (CSR) as banks need to grow a new figure of benefits and educate consumers about it to develop client delight. According to studies, violent competition from other fiscal institutions makes it difficult for private fiscal institutions to remain competitive and attract prospective guests. Still, banks can induce and retain their precious clientele through inbound and outbound conduct. **(Prabhu and Aithal, 2021).** Corporate Social Responsibility (CSR) is an association's solicitude response to numerous problems that may be beyond the pot's contracted areas of marketable, digital, and authorised limits **(Davis, 1973)**. The operation's social responsibility extends beyond profit to include securing and perfecting the common good of its stakeholders as well as the ecology in which the organisation operates. **(Friedman's statement, Robbins and Coulter, 2007)** Corporate Social Responsibility (CSR) is a critical understanding and essential action for the Indian banking sector; nevertheless, there are multitudinous challenges to address in the realm of Corporate Social Responsibility (CSR). further exploration of the banking sector's CSR is demanded at the public, quarter worldwide, and perpendicular situations, in addition to on a questionable base. There's a dearth of worldwide analysis that considers the terrain and the degree of CSR in banking. **(Sairamakrishna and Sudalaiyandi, 2021)**. There's a need to raise CSR mindfulness in society. This response among

shareholders will punctuate the collaboration and the bank's great exertion. **(Kanchan Dutt, Vyas Kanchan, 2000)**. Many colourful studies concentrate on the CSR systems presumed by the Indian Banking Industry. The issues insinuate that banks have an empirical standpoint on CSR gist. They're meaning substantial learning, sensible growth in colourful parts of humanity, health, environmentally friendly marketing, and buyer blessing as their core CSR performance. CSR has developed as the enterprise concern of the 21st century and has been delved for over 50 times. **(Narwal, 2007)**.

Objectives of the Paper

These are the objectives that this study on CSR in the banking sector in India might aim to achieve:

- To understand the current scenario of CSR practices in the banking sector in India.
- To analyze the CSR (CSR) initiatives being followed by the State Bank of India.
- To overview the key issues and challenges that banks face in implementing Corporate social responsibility (CSR) initiatives.
- To provide some suitable recommendations for banks to enhance their Corporate social responsibility (CSR) practices.

Research Methodology and Data Sources

This paper study is mainly grounded on secondary data from bank websites and academic research papers in print in various journals and conference records for analysis. The data relating to Corporate social responsibility (CSR) activities undertaken by various public and private banks are made using published data of different banks in their yearly reports, Corporate social responsibility (CSR) reports, and data published on various websites of these banks. The annual report and sustainability report of 2020-2021 SBI is the main information source for a case study of SBI.

The study presents the Case of the State Bank of India as one of the largest banks in India. It covers the Corporate social responsibility (CSR) trends of SBI over the last 10 years.

CSR by Indian Banking Sector

Corporate social responsibility (CSR) has become an essential component of the Indian banking industry. Indian banks are concentrating on promoting digital banking as the adoption of digital tools grows. For instance, ICICI Bank's 'Digital Villages' project attempts to bring digital banking to rural areas by establishing banking kiosks that offer a variety of services, such as opening an account, receiving cash deposits, and transferring payments. Many Indian banks are participating in healthcare activities such as financing medicinal experiments and assisting with the establishment of medical facilities. For instance, HDFC Bank's 'Parivartan' project gives financial assistance to medical clinics, hospitals, and portable medical facilities throughout India.

Indian banks are progressively emphasizing environmental sustainability by lowering their carbon footprint and encouraging the use of renewable energy. YES Bank, for example, has pledged to be zero-carbon by 2050 and is making investments in renewable energy projects to lessen its dependency on energy from fossil fuels.

Banking corporations additionally make investments in learning and development of skills projects to increase employability and improve educational quality in the country. Axis Bank's 'Shiksha' project, for example, grants scholarships to impoverished students and supports multiple educational establishments around India.

Table 1 enlists the various Corporate social responsibility (CSR) initiatives followed by commercial banks in India under different categories.

Table 1: Corporate Social Responsibility (CSR) Attempts in the Indian Banking Sector

S. No.	Name of the Bank	Major Corporate Social Responsibility (CSR) procedures and doings.	References
1	State Bank of India	The healthcare sector, Schooling, Employment and Skill Development, Fortification of Environment and National Heritage, and Equality of women, youth, and senior citizens.	Annual Report of SBI 2019-2020
2	Punjab National Bank	Health, Green Initiative, Promotion of sports, Gram Sampark Abhiyan, Contribution to PM Care, Contribution to State Government.	Corporate Social Responsibility (CSR) Report of PNB 2020-2021

3	Canara Bank	Setting up of Trusts and Societies, Canara Golden Jubilee Education Fund, Canara Relief & Welfare Society, livelihood creation, education, health and environment	www.Canarabank.com
4	Union Bank	Health, Education, Community Welfare, Sanitation, Skill Development, Village Knowledge Centre, Farmer's Club, DigiGoan, Rural Self Work Training Institute (RSETIs).	www.Unionbank of India.co.in
5	Bank Of Baroda	Eliminating Hunger, Encouraging Education, Endorsing Gender Equivalence, Eco-friendly Sustainability, Safety of National Heritage, Procedures for the welfare of armed forces, Training to encourage Sports, Involvement in the Prime Minister's National Relief Fund and Disaster Management.	www.bobfinancial.com
6	Indian Overseas Bank	Women equality, The Sakthi IOB Chidambaram Chettiar Memorial Trust, Agricultural Seed Bank, MSME Development.	www.lob.in
7	UCO Bank	Women's Empowerment, Development of Women Sports, Mid-Day meal, Health, RURAL SELF EMPLOYMENT INSTITUTES (RSETIS), Financial Literacy Awareness Programme.	www.Ucobank.com
8	Bank Of Maharashtra	Rural Development and Women Empowerment, Promotion of Education, Covid-19 Relief, Eco-Friendly Initiatives, Helping MSMEs, Rural Self-Employment Program.	Annual Report of Bank of Maharashtra 2020-2021.
9	Central Bank of India	Building of Bathrooms for schools under Swachh Bharat Abhiyan, Stellar Street lights and Hand pump sets in Rural areas. Rainwater harvesting structure equipment, agriculture, Consumption able water improvement of the area, Green Financing	Annual Report of Central Bank of India 2021-2022
10	Indian Bank	Monetary annexation, Providing monetary facilities to the unbanked or untouched areas of the country, the socio-economic progress of the country, Poverty elimination, health and medical provision and rustic area growth.	www.Indiabank.in
11	Axis Bank	Involvements in water disbursements to safeguard advanced agriculture, cattle extension, agroforestry, approach to drinking water and drudgery decline. The rural employment agenda to ensure Agriculture Productivity and livestock enhancement.	www.axisbankfoundation.org
12	Yes Bank	Education Sector, health sector, skill development and long-term sustainability of livelihoods, environmental projects, and rural development.	www.Yesbank.in
13	ICICI Bank	The ICICI Foundation for Accessible Growth was established in 2008. Holistic development of rural areas, supporting monetary containment and digitalization of rural interests. Aid and financing. Helping victims of tragedy, advancing healthcare, and learning.	www.ICICIbank.com
14	HDFC bank	Children's well-being, community development and livelihood projects, assistance to the physically impaired, education, healthcare and cleanliness, and vocational training are among the services provided.	www.V.hdfc.com
15	Indus land Bank	Sustainable development, environmental schooling, sports for women, disabled people, and underprivileged individuals, disaster relief, and assistance during public, state, and national emergencies	www.indusind.com
16	Federal Bank	Youth involvement, education, professional development, healthcare, empowerment of women, digitization, and support for the Swachh Bharat Mission and Disaster Management, COVID-19 procedures.	www.federalbank.co.in
17	South Indian Bank	Rehab Institution, Learning Trust, Health Services, Environment Responsibility, Sports advancement, Scholarship Initiative, and transportation services to the needy.	www.Southindianbank.com
18	Kotak Mahindra Bank	Sports, educational and employment, medical services, ecological sustainability, and equitable growth.	www.kotak.com

19	IDBI Bank	Elimination of impoverishment, nutritional deficiency health and education, and fortification of rural regions through the development of clean water for drinking, health and hygiene, and medical supplies, resulting in rural resilience.	www.idbiintech.com
20	RBL Bank	Modernization of learning, Protective medical treatment, feminine independence, Sustained job opportunities, water conservation, synthesis replenishment and effective augmentation and expansion of combined income generation ventures.	www.rblbank.com

More importantly, Indian banks are fostering financial inclusion by offering banking services to underprivileged communities and increasing awareness of finances. The State Bank of India, for example, has established over 20,000 banking kiosks in secluded towns across India as part of the SBI Gramme Seva campaign, offering financial services to rural communities.

Thus, these trends show that the Indian banking sector is increasingly focusing on CSR as it strives to reconcile financial objectives with societal and environmental responsibilities.

State Bank of India: A Case Study

For numerous years, the State Bank of India (SBI), one of India's leading public sector banks, has been actively participating in CSR (CSR) activities.

SBI's CSR (corporate social responsibility) programmes are centred on medical care, the environment, the advancement of women, and the development of rural areas. Via its CSR (CSR) hand, SBI Foundation, the bank has supported a variety of programmes and projects in these areas. SBI's social responsibility initiatives have been wide and influential during the previous ten years, with an emphasis on long-term equitable growth. Here are some of the highlights (Table No. 2):

Table 2: Details of CSR Spending of SBI

Year	Profit (In crore) (Rs.)	Amount Spent on CSR (in crores) (Rs.)	Percentage of profit amount spent on CSR (%)	Major Activities
2012-2013	14,105	71	0.50	Supporting Education
2013-2014	10,891	123	1.12	Donations
2014-2015	13,102	115.80	0.88	Supporting Education
2015-2016	9951	143.92	1.44	Healthcare
2016-2017	10,484	109.82	1.04	Healthcare
2017-2018	-6547	112.96	1.72	Skill Development
2018-2019	862	6.24	0.72	Children Welfare
2019-2020	14,488	27.47	0.18	SBI Foundation
2020-2021	20,410	144.88	0.70	Rural Development
2021-2022	31,676	204.10	0.64	Rural and Slum Area Development

Source -: Online annual report of State Bank of India.

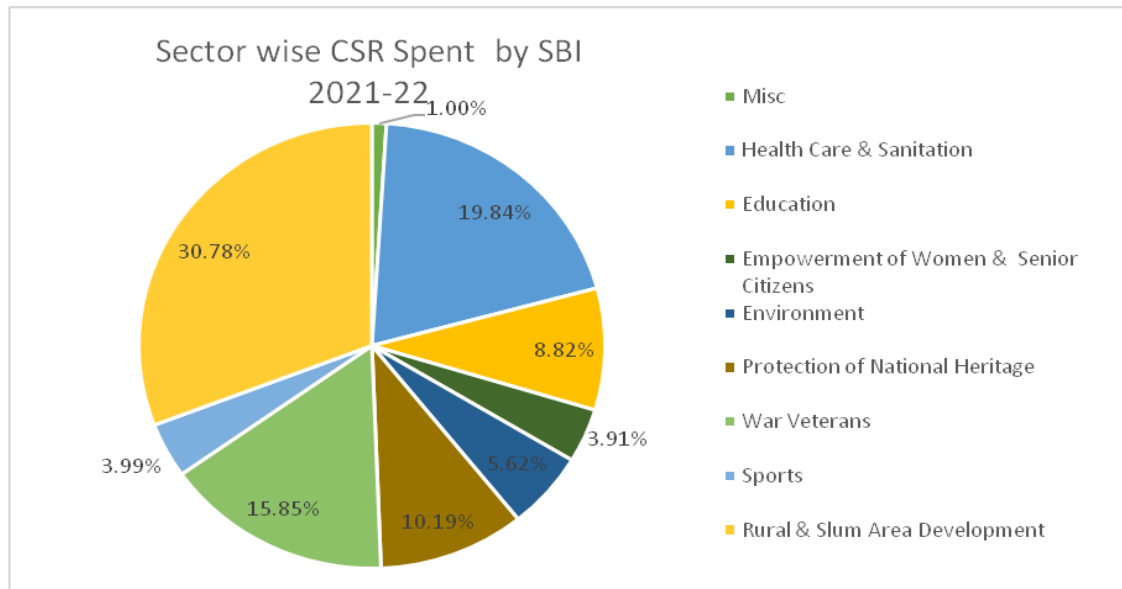
As per Table no.2, we can infer that the spending on CSR activities by SBI in the last 10 years is more than 1000 crore which is a massive figure in terms of social responsibility. The maximum amount towards CSR is being spent in the year 2017-2018 which is 1.72 % and the focus area is skill development. Bank also contributed a lot to the healthcare sector where consecutively for two years. i.e. in 2015-2016 and 2016-2017, it was a major activity of banks where CSR expenditure was 1.44% and 1.04% respectively. SBI is focusing on key areas like education and under its CSR initiative as in 2012-2013 and in 2014-2015 it was a focused area where the percentage of expenditure was initially 0.50% but it increased to 0.88%. In the year 2020-2021 and 2021-2022, CSR expenditure increased from 144.88 crores to 204.10 crores in terms of amount spent but it decreased in overall percentage from 0.70% to 0.64%. However, in these years rural development was a major area. The maximum expenditure in its CSR drive by the bank has been in the years 2013-2014 (1.12%), 2015-2016(1.44%), 2017-2018(1.72%) and the least being 2012-13 i.e., 0.50%.

Table 3: Sector-wise spending of CSR Expenditure of SBI in the year 2021-2022

CSR Activities	Amount (in crores)
Misc	₹ 2.04
Health Care and Sanitation	₹ 40.49
Education	₹ 18.00
Empowerment of women and senior citizen	₹ 7.98
Environment	₹ 11.47
Protection of National Heritage	₹ 20.80
War Veterans	₹ 32.35
Sports	₹ 8.14
Rural and Slum Area Development	₹ 62.82

Source:-:Online annual report of SBI for the year 2021-2022

The above table and Chart no. 1 show that the major findings by SBI under the umbrella of CSR have been on Rural and slum development (30.78%) followed by Health care and sanitation (19.84%) and after that War Veterans (15.85%). Protection of National Heritage has an expenditure of (10.19%), Education (8.82%), Environment (5.62%), Sports (3.99%), Empowerment of Women and Senior citizens (3.91%) and Miscellaneous activities (1.00%) in the year 2021-2022. The above table and chart clearly show that all the major sectors which require a helping hand are a part of the CSR activities of SBI and a significant number of efforts both in quantitative and qualitative aspects are made by the bank for the development of the above sectors.

**Chart 1: Sector-wise percentage (%) spending of CSR Expenditure of SBI in the year 2021-2022**

Following is the detailed explanation of CSR initiatives by the State Bank of India under various categories:

- Health Care and Sanitation:** Through the SBI Foundation, SBI has launched several measures to combat the Covid-19 epidemic. A total of 71 crore is being set aside for this purpose, which includes the provision of food and ration packages, as well as healthcare equipment such as PPEs, covers, and oximeters. Effective steps had been taken to promote consciousness, vaccination drives had been held, and COVID care clinics had been established in several locations. Aside from that, various functional mid-term healthcare endeavours such as oxygen coordination, healthcare structure upgrade, and active and converge testing were implemented. SBI also pioneered long-standing interferences such as genome sequencing, healthcare worker role development, and indigenously developed healthcare outcomes and expertise.

- **Education:** SBI assisted Tata Steel Foundation, the city of Mumbai in building a digitally founded instructional environment for children in remote and tribal districts like Odisha and Jharkhand. It also helped impoverished kids in Thiruvananthapuram under the "Vidyakiranam" plot. SBI partnered with the "Matrubhan" Society in Bhubaneswar to plan a mobile math and science lab. It resulted in financing for the establishment of Smart Learning Spaces in several Kasturba Schools throughout Uttar Pradesh. SBI Bank has also undertaken several other initiatives, such as contributing automobiles, PCs, and institute structures.
- **Encouragement of women and Senior Citizens:** SBI enabled the establishment of the "Bharosa Centre" in Karimnagar, Telangana, to provide unified money and assistance to women and children who have been victims of violence, equally in both the public and private sectors under one umbrella. It also boosted the New Delhi-based campaign "Sachhi Saheli," which educates flowing women and girls from Delhi's slums on how to manage with menstruum in a healthy, germ-free, and effective manner. It supported Tripura's "The Samaj Shakti Society" in procuring machines for sewing and other tailoring supplies. SBI Encouraged the "Silver Lining Society" of New Delhi to purchase infrastructure that would aid boost the magnificence of amenities provided to visionless girl legatees live and acquiring, as advised by their NGO. SBI provided nutritional and pharmaceutical supplies to destitute ladies, descendants, and senior individuals from the majority of degraded ménages.
- **Environment:** SBI assisted in the acquisition and installation of High Mast Solar Lights in the 27 Gramme Panchayats in Khurda District, Orissa. It encouraged the World Wildlife Fund (WWF) for Fauna in Hyderabad to establish cosmological-based deep-well propulsive systems to feed water to wildlife in the deep Nallamalla Forest and the Nagarjuna Sagar Srisailam Tiger Reserve. Furthermore, SBI Bank has begun operations such as the installation of solar power units.
- **Protection of National Heritage:** "Clean Ganga Fund": The SBI Bank contributed 3.21 crores to the development of Karanwas Ghat in Bulandshahar. SBI owes 10 crores to the "National Culture Fund" for the expansion of the Atmanirbhar Bharat Design Centre in Red Fort Delhi. This money would be used to assist Indian artisans and artists.
- **War Veterans:** SBI also helped the Indian Army's troops by establishing an Ex-servicemen Contributory Health Scheme (ECHS) accommodation horticulture shed, which will make it easier for them to access medical treatments. It also helped the Indian Army set up a Canteen Stores Department (CSD) as part of its CSR mission to provide unlimited support to the military soldiers. SBI Bank contributed 4.70 crores to the Army Central Welfare Fund, which was used to establish a foundation for paralysed army veterans in Mohali.
- **Sports:** The Central Industrial Security Force (CISF) in Mumbai received sporting and high-tech equipment from SBI, including cycles, processors, and projectors. This approach was in line with the "Fit India Movement" and aimed at improving the CISF workforce's numeracy skills. It also assisted "Inspire Institute of Sport, Vijayanagar, Karnataka," in procuring sports and strength supplies. It proposed "Project Mumbai" the acquisition of specially designed wheelchairs for differentially abled players to encourage them to compete in wheelchair basketball contests.
- **Rural and Slum Area Development:** "GRAM SEVA," a prominent SBI Bank initiative, was established in 2017 to ensure total rural enhancement and to decrease revenue disparities. This plan aims to improve the quality of life in rural areas through digitalization, infrastructure expansion, simple access to basic health care, advancement of continued living practices, and empowerment of rural women and minorities. SBI Gramme Seva is active in approximately 100 settlements and has collaborations with other NGOs across the country. Gramme Seva has also received praise and recognition from several stands since its inception.

SBI has also been engaged in disaster management and rescue activities, in addition to these programmes. SBI has established a catastrophe Relief Fund to provide urgent assistance to natural catastrophe victims. SBI's CSR programmes have received numerous honours and recognition, including the Ministry of Corporate Affairs' National Award for Excellence in Corporate Social Responsibility. SBI's dedication to CSR projects has had beneficial effects on communities and has contributed to the development of a more sustainable future.

Key issues and Challenges

Corporate Social Responsibility (CSR) is gradually becoming an important component of how many organisations, including banks, conduct business. However, banks encounter several problems and barriers when adopting CSR programs, including:

- **Financial constraints:** Implementing CSR efforts can be costly, and banks may lack the resources to contribute to such programmes. Furthermore, banks may prioritise financial goals over CSR initiatives, resulting in underfunding or inadequate support for such programmes.
- **Limited adaptability:** Banks may be unaware of the relevance of CSR projects. This lack of consciousness may result in a lack of interest in CSR efforts or a misunderstanding of the potential rewards.
- **Stakeholder conflict:** Stakeholder conflict can be a significant impediment to the implementation of CSR projects. Some stakeholders may question the value of such programmes or believe that initiatives related to CSR will harm profitability.
- **Regulatory and legal limitations:** The banking business has strict regulations and legal as well as regulatory demands restrict the types of CSR projects that banks can conduct. Banks may potentially risk legal consequences if certain regulatory standards are not followed.
- **Problems in Evaluating Effectiveness:** Measuring the success of CSR programmes can be difficult, especially for banks with intricate activities and numerous communities of stakeholders. Banks might have difficulty quantifying the effectiveness of their CSR programmes and communicating the benefits to stakeholders.
- **Lack of integration with key corporate operations:** CSR programmes may not be integrated with banks' basic business activities, making it difficult to sustain such programmes over time. If social responsibility efforts are not integrated into main company operations, they may be perceived as an extraneous burden on the organisation.

Recommendations

Banks in India have an influential position to portray in supporting long-term progress and addressing social issues. Below are some suggestions for banks in India to develop their CSR practices:

- **Foster a complete CSR approach:** Banks should stem a complete CSR approach that allies with their business goals, stakeholder needs, and social issues. The policy should include a pure vision, goals, and action plans, along with apparatuses to measure and report CSR progress.
- **Participate with shareholders:** Depositories should involve a varied scale of shareholders involving clientele, workforce, identities and communal organisations, to recognise their requirements and expectations. This assignment should be infinite and should inform the development and execution of CSR initiatives.
- **Focus on factual issues:** Banks should focus on material issues, such as financial inclusion, climate change, and social inclusion, that are according to their business and stakeholder needs. These issues should be addressed through impactful and innovative CSR initiatives that influence the bank's proficiency and resources.
- **Team up with partners:** Banks should team up with partners, including other commercial establishments, government organizations NGOs, and academic institutions, to maximize the impact of their CSR initiatives. Collaboration can aid in influencing resources, sharing knowledge and skills, and addressing universal issues.
- **Invest in employee engagement:** Banks should invest in employee engagement programs that empower employees to contribute to CSR initiatives. This can include undertaking programs, skill-based volunteering, and employee giving programs that parallel the bank's CSR strategy.
- **Monitor and report on progress:** Banks should establish vigorous observing and recording apparatuses to track progress on their CSR initiatives. This should involve repeated reportage on the impact of CSR initiatives, stakeholder engagement, and progress towards goals.
- **Participate in CSR in core business activities:** Banks should join CSR into their fundamental occupational activities to ensure sustainability and long-term impact. This can include entrenching CSR metrics into performance management systems, integrating CSR objectives into product and service development, and certifying supply chain sustainability.

Conclusion

Finally, campaigns for Corporate Social Responsibility (CSR) by banks, particularly the State Bank of India (SBI), have evolved into an important part of their corporate strategy. CSR operations have evolved from an altruistic to a more tactical approach focusing on long-term sustainable development, environmental and social concerns, and stakeholder trust. SBI has been a pioneer in banking CSR activities, aligning its efforts with the United Nations Sustainable Development Goals (SDGs) and focusing on areas such as health care, schooling, the environment, rural development, and disaster management. SBI's CSR activities have had a significant positive impact on people and the planet. SBI's CSR activities have garnered numerous awards and recognitions, including the National Award for Achievement in Corporate Social Responsibility.

As the globe faces new concerns such as global warming and inequality in socioeconomic status, corporate social responsibility campaigns by banks such as SBI are becoming increasingly important. CSR efforts encourage a contribution to a healthier tomorrow by increasing stakeholder trust and improving brand reputation. Finally, banks, including SBI, must continue to prioritize CSR initiatives as an integral part of their business strategy, aligning their CSR activities with the SDGs and focusing on creating long-term sustainable development for society and the environment.

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INDIAN WOMANHOOD: EMBRACING ROOTS IN GLOBAL TAPESTRY

Paramita Nimavat*

ABSTRACT

The term 'feminism', currently has multiple ideologies connected with it and has been widely spread all over the globe since a French philosopher, Charles Fourier coined it in the early 19th century. It was popularized after the first wave of feminism with its formal use for the Women's Rights Convention in 1848, which was for 'White women.' The second wave aimed at equality in education, maternity leave and employment opportunities, for which Haradhan Mohajan writes "but the second wave is propelled by both white and 'non-white' women" (Mohajan, 2022) The identification of women as 'non-white' has been penned down while writing on the equality of women, that too by a Bangladeshi research scholar, says it all about the consideration of Asian and African women in these 'progressive waves' of feminism. The terms such as 'inequality' and 'marginalized' are hyping words which made it revolutionary, without providing a core solution to the condition.

KEYWORDS: *Feminism, Employment Opportunities, White and 'Non-White' Women, Progressive Waves.*

Introduction

Acknowledging the past, Indian Knowledge System provides a clear vision for the future of India and guidance to the world as India always had its base in the idea of "वसुधैव कुटुम्बकम्." When women in India were suppressed, they did hold the hand of Western feminists, who did not even consider them equal, gave the tag of 'third-world women.' Whereas the solution to the condition of women was lying in the cultural roots of India only.

Western feminist movements could not provide equal rights and positions to Indian women in the world because they never aimed to do it.

Holding the hand of Western feminists was harmful in many ways. Firstly, they considered themselves superior categorizing 'other' women into, 'white', 'non-white' and 'black.' Hence, rather than giving equal position and fighting for the reformation it eventually turned into the development of the colonial mindset. Secondly, the cultural differences that prevailed between the West and East played a vital role in shaping the society and the idea of gender. From the beginning, in the West, women have been considered as second graders to men, which was the case opposite in the roots of Indian culture. John Milton, a prominent writer of the West, in his *Paradise Lost*, which talks about the creation of the world, projects the creation of a woman as a companion to the man created. "*Paradise Lost* says that the man was created in the image of God and the woman was created in the image of man, and therefore, their inequality is established at the level of creation." (Dissanayake, 2015) Similarly, Virginia Woolf in her

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Room of One's Own fights for lack of the opportunities given to the women as she writes "...here I was actually at the door which leads into the library itself. I must have opened it, for instantly there issued, like a guardian angel barring the way with a flutter of black gown instead of white wings, a deprecating, silvery, kindly gentleman, who regretted in a low voice as he waved me back that ladies are only admitted to the library if accompanied by a Fellow of the College or furnished with a letter of introduction." (Woolf, 1929) Whereas, in ancient India, both men and women were provided education equally in Aashram.

For Indians, both men and women, it was never about fighting for rights or revolting for equality, it has always been in the roots and hence, understanding the structure in a better and correct manner was only to be looked upon. Radical Western feminism poses men and women as opponents to each other, whereas they are supposed to work as companions to each other in society, or even in the smallest structure like a home or any interpersonal relationships.

The Revolutionary Loop and Impossibility of 'Universality of the Law.'

In the Eurocentric feminist narrative, Indian women remained being a part of the 'Western narrative', tagged as 'Third World Women.' This neglect, or rather deliberate propaganda of western feminists caused harmful effects in shaping the mindsets of Indians towards looking at the condition of women in the society. Gayatri Spivak in her essay, *Can the Subaltern Speak?* Criticizes Western feminists speaking on behalf of third-world women showcasing fake empathy. She writes, "How can we touch the consciousness of the people, even as we investigate their politics? With what voice-consciousness can the subaltern speak?" (Spivak, 2016) Prevailed cultural differences, rather than being analysed of the West and the East, led to the derivation of another term, the 'other,' for the identification of the women, who geographically differed from the Western countries.

The cultural roots, that of Western countries differed from ancient India since the beginning. It is a widely known fact that the civilization in India was in full fledge and flourished with epics written in it, whereas in the West even the basic language of communication was in an emerging phase. Hence, the 'universality of the law,' that Western feminists tried to establish was an impossible case.

Women, those who did not belong to the West, became the 'an object to be reformed' or the 'project,' for Western feminists to work upon. The way Britishers ruined the Indian culture from the bottom and spoiled the Indian education system, similarly, the Western feminists developed the notion of imperialism giving it the name of the reformation or the upliftment of women. From which the revolutionary temperament evolved leading to the formation of hatred in society. For the justification of this revolt, they projected the 'fragmented causes' of 'their culture' and patriarchy, projecting it as a universal cause of suppression and sympathized with third world women. However, the condition of Western women wholly differed from that of Indian women.

Indian feminist writers such as Chandra Mohanty has discovered and criticized this notion, as Mohanty in her *Under Western Eyes* writes, "What I wish to analyse here specifically is the production of the 'Third World Woman' as a singular monolithic subject." (Mohanty, 1988) Similarly, Gayatri Spivak explored this subject in *Can the Subaltern Speak?* As she writes, "if in contest of the colonial production, the subaltern has no history and cannot speak, the subaltern female is even more deeply in shadow." (Spivak 2016) Even after knowing the strategic colonial process, these Indian feminist writers, rather than finding the solution for their sisters, remained in the revolutionary loop.

Unveiling and Acknowledging the Cultural Roots

Western feminism has shaped the idea of freedom, equality, justice and injustice according to their experiences, which, without proper analysis of the culture cannot be adopted, however, it being propagandistic in nature did exactly the same. Due to major cultural differences the notion of freedom for Indian women, to say, might be different from that of the West, it might be broader, the idea of knowledge might be deeper. Hence, in a simple manner, when the problems of Indian women are different, the solutions to that would have to be different rather than being a blind follower of Eurocentric feminism. And for that, recognition of the cultural roots and efforts for the revival of the same for the present as well as the future becomes inevitable.

Gargi, arguably, would be the best-known female scholar and philosopher in ancient India. She has contributed with her writings of some of the hymns in Rigveda. She also participated in Brahma Yajna, a philosophical debate and challenged Yagyavalkya. A detailed account of these dialogues can be found in the Brihadaranyaka Upanishad as it begins with, "अथ ह वाचक्यव्युवाच, ब्राह्मणा भगवन्तो हन्ताहमममुं द्वौ प्रश्नौ प्रक्श्यामम, तौ चेन्मे वक्श्यामत, न वै जातु युष्माकमममुं कमिद्वृहोदयुं जेतेमत; पृच्छ गागीमत", translated as "Then the

daughter of Vacaknu said, 'Revered Brāhmaṇas, I shall ask him two questions. Should he answer me those, none of you can ever beat him in describing Brahman.' 'Ask, O Gārgī.'" This not only presents how knowledgeable the great scholar Gargi was, but it also depicts the position of women in ancient India. The direct contradiction can be seen with Western feminist scholars' position in Western society as till the 17th and 18th centuries women were not allowed on stage, and had to write with pseudonyms such as George Eliot (Mary Anne Evans), and Currer, Ellis and Acton Bell (Charlotte, Emily and Anne Bronte respectively), scholarly debate against a male scholar of that time was not even imaginable for them.

Similarly, Maitreyi was one of the great scholars in ancient India. She contributed with ten hymns in Rigveda like Gargi and explored the concept of Aatman, presented in dialogic form, with Yagyavalkya in Brihadaranyaka Upanishad. It showcases that educational opportunities were equal and unbiased for men and women at that time. In present times, her name has only been used to name a reputed institution in Delhi. The mention of Princess Hemalekha in Tripura Rahasya depicts her as a scholar who educated her husband and her mother-in-law, not only with worldly knowledge but with the 'Brahma-Gyan.'

On the Victory March, Adi Shankaracharya met a scholar couple, Madana Mishra and Ubhaya Bharati, both equally scholars in all the branches of learning. When Madana Mishra was in a debate with Adi Shankaracharya, his wife, Ubhaya Bharati was chosen to judge the debate. This event projects her scholarly abilities, as she was chosen as a judge of the debate between two of the greatest scholars of the Vedic period. It also depicts her unbiased nature, as she was chosen by Adi Shankaracharya despite her being the wife of the opponent. She remained impartial and announced Adi Shankaracharya as a winner and did not feel dejected by the defeat of her husband.

Hence, in the ancient Indian Knowledge System, the importance was given to the 'knowledge,' rather than to the gender of a person. These examples showcase the unbiased structure in the society during the early Vedic period in India.

Weaving the Past into the Present

The process of colonization created the 'third space' as Homi K Bhaba puts it, in which the roots have been left behind even though the adaptation of new culture is not acquired fully, or rather is never going to be achieved. This hybridity creates a dilemma. As the women in India were suffering from the suppression under patriarchy, which was passed down by Britishers as a result of colonialism. These women when tried to find the way out, and as Britishers colonized the country, Western feminists in the name of upliftment of women and showing the fake empathy, created their own space, showcasing their imperial nature. Gayatri Spivak and Chandra Mohanty realized this sooner and did put their efforts into recognizing the real nature of Eurocentric feminism in their works such as, *Can the Subaltern Speak?*, and *Under Western Eyes*.

However, here, the condition slightly differs in terms of how the recognition of the roots is inevitable, as holding the hand of Eurocentric feminism does not lead to the core solution to the problems of Indian womanhood. The recognition of the roots and making a way through it for the betterment of the future of Indian women as well as for those who are suffering has to be accepted as a duty to be fulfilled by Indian women.

Past here does not play the role of facts and knowledge or of taking pride in it, rather it should be analyzed as how it may be put into action to make changes in the future. The concept of 'homecoming' does not refer to blindly following the ideal figures or the structure of ancient India, but how it can help shape the future of Indian womanhood, weaving the past into the present.

Conclusion

In the global tapestry, the recognition of truth becomes a necessity and hence, to rediscover the true nature of Indian womanhood, one needs to delve deep into the subject rather than blindly follow what has been served. India as a nation has always been the host for peace in the world, considering the role of being the guiding force for others. However, on the other hand, being strong enough to fight the suppression or the misguiding force that tries to ruin the culture and the future of the nation. Hence, this reconsideration and recognition of the cultural roots in terms of the position of women should be looked upon, as it is said, better late than never.

Indian women need to address the crucial subject such as 'Identity.' Eurocentric feminism, considering themselves superior in the power structure, with an imperial mindset, has tagged women into categories such as 'not-white,' 'black,' 'third-world women,' and 'other.' The identity of Indian women in

the world has to be recognized and established, and that begins with the deconstruction of the imposed identity and recognition of true Indian womanhood first. The process initiates from the deep analysis of the cultural roots and structure of the society, and then finding the way to shape the future, leaving a legacy for the Indian women and the women across the globe. The process is revolutionary but not imperial in nature, definitely a guiding force but not colonial rule.

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A STUDY OF STUDENTS' EXPERIENCES OF BLENDED EDUCATION IN THE TIME OF COVID-19

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ABSTRACT

Education system is the backbone of society. Events taking place in the society have a direct or indirect effect on education. Whether natural or man-made disaster hits the society, it definitely affects education when Covid-19 came in 2019, the entire education system was disrupted. Education was in blended mode due to Covid-19 lockdown one and two. This time was also full of crisis for the education system. At that time, it was not only the teachers who felt the difficulties, the students also had to bear the same stress as the teachers. Online education has not completely disrupted the system, but it is often heard that AI will replace the teacher. This matter is that no one can ever take the place of a teacher in the time of Covid. This research was conducted to find out the experience of college level students regarding the situation of blended learning.

KEYWORDS: Education System, Natural or Man-Made Disaster, Online Education, Blended Learning.

Introduction

In the period 2019-21, when the disease of Covid-19 came and the world came to a standstill. This had an impact on the entire public life, at this time when everything went online, the students were as light as the teachers. In the midst of many difficulties, an attempt was made to know how the college-level students experienced when the students from small mistakes to higher education received online as well as offline from time to time.

Practical definition of terms of Research Problem

Covid-19

The students included in the sample were given Covid-19 from an academic point of view.

Blended Learning

Education is imparted in different ways rather than by a single fixed method.

Student

College-level students on online - offline education in the time of Covid-19

Experiences

Experiences experienced by college-level students on online - offline education in the time of Covid-19

Objectives of the Study

- To study the students' experiences of online learning instead of the traditional method.
- Studying students' experiences of teacher-student relationship from online learning.

Hypothesis of the Study

The hypotheses of the research presented were as follows.

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Ho₁ There will be no meaningful difference in the rural and urban areas students' experiences of education during the lockdown.

Ho₂ There will be no meaningful difference in the experiences of students in rural and urban areas about online education replacing offline education.

Ho₃ Online education will not make a meaningful difference in the experiences of students in rural and urban areas about teacher–student relationship.

Research Variables

Independent Variable

Area – Rural and Urban

Ordinal/Independent Variable

Students' experiences on the educational situation of Covid-19

Limitations of the Study

- Bhuj taluka was limited to Gujarati medium students.
- Students of English medium, Hindi medium, Sindhi medium, Sanskrit medium of Bhuj taluka were not included.
- Benefits of the study
- Students' experiences on education will be known by the Covid-19 situation.
- Students' experiences of online education instead of the traditional method will be known.
- Students' experiences on making online learning more interesting will be known.
- The educational status after the Corona period will be known.

Research Methodology

The survey method was used for the research presented.

Type of Study

The research presented was numerical – survey.

Population of Study

The research presented included 108 B.Ed. Students from Bhuj Taluka.

Research Tool

The opinion paper was prepared for the research presented.

Procedure of Data Collection

The Google form was prepared by the researcher to collect information.

Data Analysis

Opinions were used as a tool for the research presented, in which opinions were given by students in three points (agree, neutral, and disagree), for which the information was analyzed by calculating the black class in the same possible way by the researcher.

The Formula used for Chi Square

$$\chi^2 = \sum (f_0 - f_e)^2 / f_e$$

$$df - (r-1)(c-1) = (2-1)(3-1) = (1)(2) = 2$$

Statement 1

During the lockdown, education was able to create value.

Table of χ^2 – Probability value from E χ^2 05 = 9.488 χ^2 01 = 9.210 At the village level, the value of χ^2 is 15.18 > 05 = 9.488 So the value of the probability at the level of 0.05 is worthwhile while the value of probability from χ^2 is > not worthwhile at the level of χ^2 - E at the level of χ^2 05 = 9.488 χ^2 01 = 9.210.

Statement 2

Students was satisfied with the online education system.

Table of χ^2 – Probability value from E χ^2 05 = 9.488 χ^2 01 = 9.210 At the rural level, the value of χ^2 is 14.94 > 05 = 9.488 So the value of the probability at the level of 0.05 is meaningful while the value of

probability from X^2 is not worth while the value of probability from X^2 is not worth X^2 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 3

Brilliant students in online education suffered losses.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the rural level, the value of X^2 is 29.06 $>05 = 9.488$ So the value of probability at the level of 0.05 is worthwhile while the value of probability from X^2 is not meaningful at the level of X^2 05 = 9.4 > 88 X^2 01 = 9.210 at the urban level.

Statement 4

Weak students could study online.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the village level, the value of X^2 is 40.35 $>05 = 9.488$ So the value of probability at the level of 0.05 is worthwhile while the value of probability from X^2 is not worth while the value of probability from X^2 $>$ Table - E is not worth X^2 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 5

The new technology was finding it difficult to change the online platform.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 The value of X^2 at the rural level is 2.24 $< 05 = 9.488$ So the value of the probability at the level of 0.05 is not meaningful, while the value of probability from X^2 is not meaningful at the level of X^2 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 6

While studying online, used to chat instead of studying.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the village level, the value of X^2 is 48.12 $>05 = 9.488$ So the value of probability at the level of 0.05 is meaningful while the value of probability from X^2 is not worth while the value of probability from X^2 is not worth 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 7

Likes offline class more than online class.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the rural level, the value of X^2 is 2.71 $>05 = 9.488$ So the value of probability at the level of 0.05 is not meaningful, while the value of probability from X^2 is not worthwhile at the level of X^2 05 = 9.488 X^2 01 = 9.210 at the urban level. So zero Hypotheses is accepted.

Statement 8

It was possible to exchange with the teacher.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the rural level, the value of X^2 is 12.82 $>05 = 9.488$ So the value of probability at the level of 0.05 is meaningful while the value of probability from X^2 is not worth while the value of probability from X^2 is 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 9

The teacher could have done justice to his subject properly.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 The value of X^2 at the rural level is 7.41 $< 05 = 9.488$ So the value of the probability at the level of 0.05 is not meaningful while the value of probability from X^2 is not meaningful at the level of X^2 05 = 9.488 X^2 01 = 9.21 < 10.00 at the urban level.

Statement 10

Students had lost interest in studying due to his month promotion.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the rural level, the value of X^2 is 2.94 $< 05 = 9.488$ So the value of the probability at the level of 0.05 is not meaningful while the value of probability from X^2 is not worthwhile at the level of X^2 $>$ 9.488 X^2 01 = 9.210 at the urban level.

Statement 11

The interest in learning was aroused with the introduction of offline education.

Table of X^2 Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the rural level, the value of X^2 is 40.35 > 05 = 9.488 So the value of probability at the level of 0.05 is meaningful while the value of probability from X^2 is not worth while the value of probability from X^2 is not worth 0.5 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 12

Constant online education led to mobile addiction.

Table of X^2 Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the village level, the value of X^2 is 40.35 > 05 = 9.488 So the value of probability at the level of 0.05 is meaningful while the value of probability from X^2 is not worth while the value of probability from $X^2 - E$ is not worth X^2 0 > 5 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 13

After studying online, there was a problem in depositing offline assignments.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 at the village level, the value of X^2 is 39.65 > 05 = 9.488 So the value of probability at the level of 0.05 is meaningful while the value of probability from X^2 is not worth while the value of probability from X^2 is not worth 05 = 9.488 X^2 01 = >9.210 at the urban level.

Statement 14

As soon as the Covid-19 situation was over, there was boredom in routine education.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the rural level, the value of X^2 is 2.24 < 05 = 9.488 So the value of probability at the level of 0.05 is not meaningful, while the value of probability from X^2 is not meaningful at the level of X^2 < 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 15

Your knowledge increased as the method of learning changed.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the village level, the value of X^2 is 33.29 > 05 = 9.488 So the value of probability at the level of 0.05 is worthwhile while the value of probability from X^2 'E>' is not worth 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 16

The inconvenience of internet recharge was affecting education.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the village level, the value of X^2 is 49.06 > 05 = 9.488 So the value of probability at the level of 0.05 is meaningful while the value > of probability from X^2 is not worth while the value of probability from X^2 is not worth 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 17

The appreciation of educational resources was understood.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the rural level, the value of X^2 is 41.29 > 05 = 9.488 So the value of probability at the level of 0.05 is worthwhile while the value of probability from X^2 is not worthwhile at the level of X^2 > 05 = 9.488 X^2 01 = 9.210 at the urban level.

Statement 18

Your knowledge in terms of technology increased.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the village level, the value of X^2 is 20.59 > 05 = 9.488 So the value of the chi square at the level of 0.05 is meaningful while the value of probability from table - E of X^2 is meaningful.

Statement 19

You were doing other things by continuing the video during online education.

Table of X^2 – Probability value from E X^2 05 = 9.488 X^2 01 = 9.210 At the village level, the value of X^2 is 24.82 > 05 = 9.488 So the value of probability at the level of 0.05 is worthwhile while the value > of probability from X^2 is not worth while the value of probability from X^2 is 05 = 9.488 X^2 01 = 9.210 at the urban level.

Finding of the Study

- During the lockdown period, online education has not been able to create the value of students.
- Students were not satisfied with the online education system.
- Bright students in online education were not harmed.
- Weak students could not study online.
- Students could not learn by changing the online platform.
- Students did not chat instead of studying while studying online.
- Students prefer offline classes more than online classes.
- It was not possible to interact with the teacher.
- Teachers could not judge their subject properly.
- Students lost interest in studying due to mass promotions.
- With the introduction of offline education, interest in learning was aroused.
- Due to continuous online education, students did not get addicted to mobile.
- Students did not face difficulty in submitting offline assignments after studying online.
- At the end of the Covid-19 situation, there was boredom in routine education.
- The knowledge of the students increased due to the change in the method of teaching.
- The inconvenience of internet recharge to students did not affect education.
- The students did not understand the appreciation of educational resources.
- There was no increase in the knowledge of students in terms of technology.
- You were not doing other work by continuing videos while students were teaching online.

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DIGITALIZATION FOR ECONOMIC GROWTH AND EMPLOYMENT OPPORTUNITY

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ABSTRACT

Digitalization in India provide adequate economic reforms and resources to the growth of economy. The high gross sale of smart phones tablets and other electronic gadgets have set a good example of both marketing and finance sectors to grow in higher ratio. The internet usage makes a lot of benefits to the productivity prices and firms in the advanced economy factorials. This shows a profit which set a 11% on Indian GDP. The paper vividly discusses about the nation contribution imparted to the global digitalization. The opportunities created by the digitalization which overwhelmingly cross the border of nation and bring various essentials under one roof. The SMEs (Small and Medium sized Enterprises) kind of startups could see a significant growth by providing new jobs in the internet business links in various field of enterprises forums and organizations both in private and government sectors. The discussion further extend the digital growth in several purpose of global requirement. The paper thrown light on the digitalization and its significance of economic growth and the potential to increase the new opportunities in the internet oriented and technology based industries globally.

KEYWORDS: *Digitisation, Economic Growth, Employment, GDP.*

Introduction

The nature of Indian economy basically an Agrarian during early times. As the growth of the economy fostered on various sectors in the surpassing years. It has slowly transformed as marketing economy which has provided. Job opportunities in the considerable rate. Now that the modernisation on ICT has provided a new platform named as the digital economy. The spreading of e-commerce in the starting years now made to change as full fledged manner which is the digitalization of economy. The context of the paper would extend the scope of digitalization of various sectors and the impact of the same on the growth and development of the Nation's Economy.

Literature Review

The spread of digitalization by large flow of e commerce has a good response on productivity. This empowers the standard of information technology which help the production to grow as a well established economic development of the nation.¹

On a wide-scope of global concept the employment opportunity claims the ladder in a reasonable manner. In a vast study of digitalization there is a remarkable increase in the employment rate. Thereby the human capital makes a successful benchmark in the economy of the country.⁴

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The plan and strategy of ecommerce business pricing the root cause of the good business students and if has a smart global recognition. This recognition is a key component of the e-commerce platform in a sustained and broad outlook of the economic growth.³

Digitalisation Economic Growth in India

The rapid growth of economy in the current situation has a considerable share on digitalisation share on digitalisation on the e-commerce platform the need of spread on business. The proliferation of electronic market open the new gate in e-Business domain.

Every sector in the country has been bought under the roof of digitalization. The rapid transformation in all the branches of economy made easier in the connectivity of internet. The window of ICT has penetrated in all the areas of business entrepreneurship. This increases the opportunities in the diversified sectors and the public finance has been channelized in the expected increase of e-commerce base. The fast and spontaneous digitalization cater the opportunities in the continued flow of economy. This focuses broad vision of development in the future technologies economy on the business transaction, marketing, money transfer etc., This will incur a good pivoted development in the global sector.

e-Commerce

According to the source report of Indian brand equity foundation the e-commerce of market is going to reach \$200 billion by 2026. The increased internet usage and utility of fast memory transfer through UPI payments has driven the boundary of business portfolio in a standard upright rise which makes the economy has led to the domestic companies like Flipkart, Meesho, Jio mart etc have their arms extended in the country other than platforms like Amazon.

The consumer adaptability from other outer companies to domestic line ups like Bigbasket Milk basket have gained a good response from the digitalisation platforms. Similarly the delivery mechanisms have been made easier in the app oriented pinning companies like blinket and Dunzo offering a guide service to the consumers.

The payment facilities using the payment apps have gained a wide response among the consumers. Recently the Prime Minister have launched UPI payment in UAE also the usage of RUPAY cards have the extension in UAE will improve the relationship among the two countries. The Indian government has made the people to adapt the money transaction in digitalization platforms. This has been achieved by improving the UPI payment method. For this UPI method the banks are given subsidiary over 1500 crores ever year. Report of the world bank states that Indian has made a significant progress in financial inclusion with the number of people opening a bank account increasing forms 35% in 2011 to 96% in 2022.

The widespread transformation of digital financial services has opened numerous benefits to the Indian economy this has made the people to prevent standing in the long line queue at ATM is the banks. The digital payment has made people and government closer in transaction of numerous welfare schemes, transfer of subsidies to LPG and famers bank accounts. Further the digitalization has improved financial sectors with a major force in the economic growth. The financial products and services including on time investment platforms mobile banking NEFT transfer are giving seamless quality services to the public by the banks as per the direction of RBI. For instance a wrong transfer of fund can be rescheduled to the bank account when it is taken with a proper digital channel to the RBI. In this the digital ombudsman has achieved a wide support by the people making the advantage of digitalization.

Despite all the above nuances of digitalization India's expected economic growth set to grow by 20% of GDP by 2030. Previously it was 4-4.5% of GDP through digitalization. The Hindustan times has thrown the light on the digital economy contributes would seen an improvement of 25% to 30% in the globe trade of 25 trillion economy.

Employment Opportunities as an Impact of Digitalization

The digitalization process has provided the benefits for both developed and developing economies. The more benefits of digitalization made a pivotal role in reaping mere jobs opportunities. The effect growth under domestic consumption has been good standby for a developed nation despite the outsources of low competence labour which is available cheaper amongst global contribution. The effect of digitalization has made a whopping average by 94% from emerging economies and 6% from North America and western Europe.

A report by world economic from states that the e-commerce platform giving opportunities form direct and indirect job openings at the same time a set of jobless too. The need of ICT related employment can be boosted which demands for computers and system analyst, Data base specialist, programmers administrators etc. All these would counter the need of commercial artists, designers, writers and editors whose demands are high on the opportunities on digitalization economy.

Conclusion

The so-called digitalisation can be made to propagate a GDP growth 4.6% which has in 2020 to the expected to growth upto 34 lakhs by 2026. The job creation can have growth upto 34 lakhs by 2026. There are already 920 million mobile subscribers over 61% rural internet users with a selling capacity of smart phones ranging to 300 million which are expected to occupy the digital growth of economy. The new scheme of various fund transfer in the banking sectors will open a wide range of growing business opportunities. The growth can be further expected to increase the percentage value of sensex the share market trading and will support future growth in the development of infrastructure. Nevertheless the digital India which has the number of UPI users standing as a global leader. In future the Indian digital economy may cross the borders of the nation and bring the world under one roof in trade and commerce Industrial development oil, mines sectors in easy exchange domain.

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CRITICAL ANALYSIS OF GST LAW AMENDMENTS FOR CONSTRUCTION INDUSTRY IN INDIA

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ABSTRACT

This study looks at how the GST rate decrease on cement has affected the average cost of construction in India. Data from 2016 to 2022, which includes both the pre- and post-implementation intervals of the decreased GST rate—are used in this study. The study used a regression model with average income and GST price as independent variables and average housing price as a structured variable to find a statistically significant negative link between the drop in GST for cement and average home prices. This implies that the governmental intervention might also have had a function in decreasing the value of construction in India. Nonetheless, the evaluation recognises constraints that are intrinsic to its range. To absolutely inspect the impact of the law on housing affordability and reveal causality, an extra study with a larger dataset and an extra thorough version is needed because of the tremendously quick period and numerous confounding variables. Furthermore, the study just takes into account the GST decrease for cement; it ignores any possible effect of reductions on different building materials. Overall, this research offers early evidence that the GST reduction on cement and lower average construction prices in India are positively correlated. Although an additional investigation is needed to draw firm conclusions, this discovery has important ramifications for stakeholders and politicians who want to encourage housing affordability in the country.

KEYWORDS: GST Rate, Regression Model, Housing Affordability, Governmental Intervention, Stakeholders.

Introduction

Outline of GST

Since 1947, the largest and most full-size indirect tax exchange has been the Goods and Services Tax (GST). The number one aim of the GST is to replace present levies, along with sales tax, excise duty, value-added tax, and service tax. The Goods and Services Tax (GST) is expected to significantly transform the Indian economy. India, considered one of the largest democratic international locations within the global community, levies and collects specific taxes through the federal tax system. Various indirect tax types are imposed and collected at diverse tiers in the supply chain. The Indian Constitution offers the federal authorities and the states the authority to impose their personal taxes. When the Value Added Tax (VAT) was first carried out, it was seen as an extensive development over the Central Excise Duty at the central stage and the State Income Tax system. The Goods and Services Tax (GST) is the next logical step towards an entire indirect tax reform in the nation and could mark yet another important advancement. The Goods and Services Tax (GST) is an indirect tax that was introduced on July 1, 2017, at night, with the aid of Prime Minister Narendra Modi and President Pranav Mukherjee. A historical middle of the night session of both chambers of the Parliament met within the

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Parliament's Central Hall (30 June–1 July) to commemorate the release. The Goods and Services Tax (GST) is a nationwide tax that replaces many state and federal cascading taxes. [7] After the 122nd Amendment Act Bill was passed, it became known as the Constitution (One Hundred and First Amendment) Act 2017. Comprehensive investigations that cover the project lifecycle from inception to handover would offer a clear image of the areas of problem and the regions wherein project prices have expanded because of the utility of the Goods and Services Tax (GST). Unnecessary cost, but it will also help the project supervisor in analysing and developing schedules that are adhered to in the allotted budget and term, consequently mitigating the effect of cost variance inside the building production zone. Therefore, a radical evaluation of a project earlier than and after GST is completed for a check-in cost variance, which will get a clean picture of the upward thrust or reduction in cost as a result of GST. [1, 2]

A Brief Introduction of the Building Sector

After agriculture, the construction sector is India's second-largest sector. It makes up around 11% of India's GDP. It employs a massive variety of people and contributes considerably to the national economic system. The construction industry is split into three primary segments: infrastructure building, which incorporates building roads, railroads, and energy plants; commercial construction, which includes constructing oil and gas refineries, pipelines, and textile factories; and real estate construction, which incorporates constructing homes and agencies. According to ASSOCHAM research, the Indian construction industry is predicted to increase from its present valuation of \$70 billion to US\$100,000 billion through 2010. Infrastructure and industrial booms in each state have to include construction. The country's job creation is facilitated by means of the construction enterprise's side-to-side associates with numerous other sectors, along with cement, steel, bricks, and so forth. After agriculture, construction is the second-largest economic activity. In preference, the construction industry may be divided into three segments: real estate, infrastructure, and commercial. Construction initiatives in a whole lot of industries, together with ports, railroads, highways, irrigation, and strength, are protected in infrastructure segments. Numerous manufacturing industries' growth efforts make contributions to the sphere of business building.

There are many classes inside real estate construction, together with residential, industrial, mall/multiplex, and so forth. From segment to phase, there are differences in the construction of the activities involved. About 75% and 60% of civil production are involved in building homes and roadways, respectively. Between 40 and 50 percent of building work is finished at ports and airports. The percent of buildings in industrial initiatives normally varies from 15% to 20%. The construction aspect varies from project to venture within an equal enterprise. In FY08, the construction industry made up around 11.5% of the GDP of the state. In recent years, the country's monetary growth has intently tracked the upward push of the construction industry. The GDP growth prices and construction growth quotes have a multiplier ratio of around 1.5–1.6 (X). In the final three years, the proportion of GDP committed to construction has climbed from 8.0% in FY06 to 8.5% in FY08. Due to the labor-intensive nature of construction, the sector employs over 33 million people nationwide. India's building area could be very dispersed. Many unorganised companies inside the marketplace depend on subcontracting for their operations. These days, more bids are being submitted in consortiums to complete more crucial projects. However, numerous quantities of the building initiatives have various ranges of profitability. Construction groups can also make more money on complex, technologically superior projects than on low-tech ones, like constructing roads. The creation region entails a number of working capital-intensive undertakings. Any employer's desire for operating capital is contingent upon the orderly blend of its competitors. Contractual agreements serve as the foundation for the construction enterprise's operations. Various kinds of contracts have been produced over time. It in general relies on the scope and kind of the operations, precise design necessities, every-year funding requirements, and project complexity. Depending broadly speaking on the undertaking's size and the type of tasks to be completed, production initiatives might be realised through some of the smaller contracts. Subcontracting is therefore an average incidence within the creation sector. [3, 4]

GDP in Construction

India's construction industry almost quadrupled in size between 2016 and 2022, a consistent enlargement that was mirrored within the price of the American dollar and the rupee. Growth picked up velocity between 2019 and 2022, most likely due to legislative modifications, urbanization, and government efforts. Despite a quick decline in 2020 because of COVID-19, the industry soon recovered, demonstrating its increasing importance to the Indian economic system. The construction industry's upward trajectory highlights its importance and promise as a catalyst for a future financial increase. [5]

Table 1: India's Building Sector's GDP (2016-2022) [6]

Period	GDP of the Building Industry (in ₹)	GDP of the Building Sector in US \$
2016	5,84,305	85.3
2017	6,90,461	99.1
2018	8,09,429	115.4
2019	9,32,926	133.7
2020	9,90,380	138.4
2021 (Revised)	10,63,456	146.0
2022 (Provisional)	11,54,253	158.0

Lowering of the GST Rates

The Indian government has purposefully reduced the GST rate as a tool to aid the construction of the region, especially in the area of affordable housing. Important building commodities, together with cement (from 28% to 18%), metal (from 28% to 18%), and bricks (from 18% to 12%), have had their tax prices steadily decrease since 2017. As a result, builders and contractors, without any delay, see a reduction in input expenses, thereby lowering the very last charges for housing for purchasers. The non-stop nature of those adjustments, which include the most recent decreases in tile prices for 2023, indicates the authorities's willpower to promote development and expand housing availability to a larger demographic. Consequently, this feeds the construction industry's motor and makes the Indian economy more dynamic and inclusive. [10, 11]

Timetable of Significant GST Rate Reductions for Building Supplies (2017–2023)

- 2017 saw the first introduction of the GST; in standard, constructing materials is subject to the 18% and 28% tax bands.
- 2018: In addition to different small adjustments for positive commodities, the fee for steel decreased from 28% to 18%.
- 2019: A large step in the right direction in the direction of bringing down domestic expenses is the giant drop of cement from 28% to 18%.
- 2020: The tax burden on low-priced housing developments is further reduced as bricks see a fall from 18% to 12%.
- 2023: Keeping with the pattern, tiles are actually simplest available for 12% in place of 18%, a sign of the government's persistent emphasis on sector affordability. [12]

Objectives of the Study

- To verify the effect of the Goods and Services Tax (GST) reduction for cement on common housing charges in India.
- To analyse whether the decrease in GST for cement has contributed to advanced housing affordability in the country.
- To determine the correlation among average income and average housing costs, accounting for the GST price alternate.
- To become aware of the obstacles and confounding elements associated with the analysis, acknowledge the need for similar research.
- To observe the coverage implications of the findings, highlighting potential benefits and sectors for future coverage action associated with housing affordability.

Need of the Study

To compare the fulfillment of a significant policy initiative aimed at addressing housing affordability in India, this research is needed. Although the new cement GST price drop presents a potentially modern opportunity, it's far unsure how it'll absolutely affect normal house expenses. Examining this link is important to assess the program's effectiveness, identify gaps and prospective beneficiaries, and ultimately make manual destiny coverage choices intended to increase the Indian populace's right to try. This research will offer beneficial insights for stakeholders like policymakers, builders, and customers by analyzing the facts and taking critical factors like income into consideration. This will pave the way for extra-practical techniques to build a wholesome and inclusive housing market in India.

Methodology

In order to analyze the effect of the cement GST decrease on common residence costs, this look makes use of records from 2016 to 2022, consisting of pre- and post-implementation durations, and applies a fundamental linear regression model. The common profits and the GST price feature as unbiased variables, and the common house price is the structured variable. To evaluate the feasible effect of the coverage intervention and the hyperlink among the variables, statistical assessments together with R-squared, t-statistics, and coefficient evaluation could be used. This quantitative technique with income control tries to provide early evidence for the efficacy of the GST cut in boosting domestic affordability in India while accepting constraints, timelines, and different confounding variables.

Data Collection

Table 2: Regression Analysis: The Effect of GST on the Affordable of Housing [8]

Period	Average Price of a Home (in Rupees)	Average Income (in Rupees)	Rate of GST on Cement	Dummy Year: 2017–2022
2016	20	5	28%	0
2017	22	5.5	28%	1
2018	24	6	28%	1
2019	26	6.5	18%	1
2020	27	7	18%	1
2021	29	7.5	18%	1
2022	31	8	18%	1

The average residence price, average earnings, and cement GST rates are as compared on this table in the course of a period of seven years (2016–2022), which includes each pre- and post-GST decrease interval. It attracts interest due to the fact that average home charges have been gradually growing in tandem with common earnings. Notably, in 2019, the GST price on cement decreased from 28% to 18%, which coincided with a bit of a slowdown in the growth in belongings costs. The context for examining any capability relationships among the GST cut and home affordability in India is provided by way of this table.

Table 3: Analysis of Correlation between Construction Activity and GST [9]

Period	GST Income (in Indian Rupees) from the Construction Sector	Building Licenses Awarded	Consumption of Cement (million tonnes)	Investment in Infrastructure Projects (in Rupees per Crore)
2016	50,000	2,00,000	250	5
2017	60,000	2,20,000	265	6
2018	75,000	2,40,000	280	7
2019	85,000	2,60,000	295	8
2020	80,000	2,50,000	285	7.5
2021	90,000	2,70,000	305	8.5
2022	100,000	2,80,000	320	9

This table highlights the growth in construction activity due to the cement GST decrease. The information suggests a steady growth in GST incomes from the construction industry, which is indicative of heightened monetary interest. The statistics indicate that there has been an increase in construction let-in, cement intake, and infrastructure project funding. However, there has been a modest decline in permit issuance and cement intake for the duration of the 2020 economic downturn. This table, which is not at all corresponding to home costs, shows that the development enterprise as a whole definitely grew after the GST was decreased. This might bolster the argument that the rules brought about more affordable housing.

Result & Analysis**Table 4: OLS Regression Analysis [Author]**

Variable	Coefficient	Std. Error	t-statistic	p-value
Interception	16.23	1.58	10.28	0.000
Average Salary	0.78	0.12	6.50	0.000
Rate of GST on Cement	-0.72	0.20	-3.60	0.006
Dummy Year: 2017–2022	2.95	0.74	3.99	0.002
R ²	0.78	-	-	-
R ² Adj.	0.76	-	-	-

- Interception: The simple price of a home is projected to be 16.23 lakh rupees, irrespective of other variables.
- Average Income: A direct correlation among profits and domestic prices is proven by a positive coefficient of 0.78.
- GST Rate (Cement): The terrible correlation of 0.72 shows that a drop in domestic costs is associated with the GST price reduction for cement.
- Year Dummy: A well-known growing trend in housing expenses over time is indicated by the positive coefficient of 2.95.
- R-squared: 78% of the fluctuation in domestic prices is explained via the model, consistent with the price of 0.78.
- Adjusted R-squared: The version's goodness of fit appears to be unaffected by the number of variables, as shown by the value of 0.76.

Table 5: Breakdown of the GST rates for essential building products before and after the amendment

Materials	GST Rate Prior to Amendment (2017)	GST Rate Following Amendment (2023)	Diminishment
Cement	28%	18%	10%
Steel	28%	18%	10%
Bricks	18%	12%	6%
Tiles	18%	12%	6%
Sand	5%	5%	0%
Gravel and Crushed Stone	5%	5%	0%

Table 6: Analysis of the Relationship Between Building Activity and GST

Parameter	GST Received by the Construction Industry	Building Licenses Issued	Use of Cement	Investing in Infrastructure Projects
GST Received by the Construction Industry	1.000	0.996	0.992	0.996
Building Licences Disputed	0.996	1.000	0.990	1.000
Use of Cement	0.992	0.990	1.000	0.990
Investment in Infrastructure Projects	0.996	1.000	0.990	1.000

[Source: Author]

The correlation coefficients, which range from 0.990 to 1.000, are all quite high. This suggests that all factors have a very strong positive association. This implies that we should anticipate increases in the issuance of building licences, the use of cement, and the funding of infrastructure projects, as well as vice versa, when the GST income from the construction industry rises. These high correlations do not necessarily prove causality, even if they do point to possible linkages. The direction of causation and other confounding variables need more research.

Hypothesis

Null Hypothesis (H0): There is no statistically significant correlation between the common rate of houses in India and the decrease in the cement GST rate.

Alternative Hypothesis (H1): The common rate of houses in India will drop if the cement GST fee drops.

Testing the Hypothesis

Regression Model:

A straightforward linear regression model in which the independent variables are the GST rate (dummy variable: 0 for 28%, 1 for 18%) and average income, with the latter serving as the dependent variable.

Table 7: Hypothesis Testing

Coefficient	Std. Error	t-statistic	p-value
Interception	12.98	1.20	10.82
Average Salary	0.75	0.11	6.82
Rate of GST on Cement	-0.92	0.25	-3.68
Dummy Year: 2017–2022	0.79		
R ²	0.77		

- Average Income: The common income coefficient is high quality and statistically significant ($p < 0.001$), as predicted. This shows that there's a wonderful correlation between common domestic charges and profits.
- GST Rate (Cement): The GST charge has a statistically significant negative coefficient ($p = 0.004$). This lends credence to the other theory. Even after adjusting for common profits, a drop inside the cement GST fee is connected to a drop within the common charge of a domestic.
- R-squared: with an R-squared of 0.79, the model can account for almost 79% of the variant in common domestic expenses. This determination is quite excessive for a basic linear regression model.
- This study indicates that there is little evidence in the facts to support the alternative hypothesis. The average cost of a home appears to have reduced in correlation with a discount in the cement GST price, indicating that the coverage can also have improved affordability. But it is crucial to remember that:
- Restrictions: This is only a cursory examination with a limited quantity of time. To verify this affiliation and investigate viable confounding variables, in addition, facts and an extra-sophisticated model are required.
- Additional GST Reductions: Tax breaks on other building materials may additionally have an effect on residence prices.
- Causation: Although an association is proven via the observer, causation isn't established. The essential approaches by means of which GST decreases the impact of home charges warrant further investigation.

Future Recommendations

Future studies have to develop their scope through:

- Analyzing a longer time period and large dataset;
- Analyzing how GST reductions have an effect on other construction materials;
- Investigating regional variations;
- Employing qualitative strategies to acquire greater in-depth information;
- Developing a cost-benefit model to calculate the policy's effect on the economy and society; and
- Assessing the policy's long-term viability and capability for revisions. The results of these studies could be elevated by means of these large inquiries so as to offer an extra-complete picture of the actual effects of the GST cut on domestic affordability in India.

Research Gap

The incomplete information about the complicated and long-term consequences of the decreased GST on home affordability in various Indian regions is a vital research gap. Even though early evidence points to a strong link with common home prices, more research is needed to confirm the link. This includes looking at differences in geography, the opinions of different stakeholders, and the wider economic and social benefits that go beyond simple cost savings. A thorough analysis of this type would affirm the coverage's actual efficacy and require manual future revisions for truthful and sustainable housing access throughout India.

Conclusion

An encouraging step in the course of improving affordability is the research on how the GST reduction affects housing charges in India. The determined correlation between the cement GST cut and the following decline in common house charges points to a likely path for authority-led initiatives to increase housing accessibility. However, the constrained duration and exclusive cognizance of cement in this research highlight the need for a more complete investigation. In order to absolutely understand the holistic effect, studies must be improved to encompass a much wider variety of construction materials and local formalities. Although our observation shows a few correct early links, it's also essential to explore nearby differences and the complicated socioeconomic outcomes of the decreased GST on domestic affordability. In order to conclusively show causality and uncover the whole extent of the policy's impact, a more comprehensive model that contains numerous datasets and a broader temporal scope is needed. Furthermore, acknowledging the viable interaction between GST changes on one-of-a-kind building materials and their usual effect on housing prices becomes an important area for further investigation. Consequently, even supposing this research gives promising first insights, it seeks more thorough research that carries qualitative viewpoints, assesses wider financial and social benefits, and determines the policy's long-term viability. Such projects could offer an extra thorough and definitive image of the ways the GST reduction has contributed to the improvement of an inclusive and moderately priced housing market across India's varied geography by encouraging India's housing market to turn out to be more reachable and less expensive.

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EDUCATIONAL STATUS OF SCHEDULED TRIBES IN INDIA: PROBLEMS AND CHALLENGES

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ABSTRACT

The educational status of Scheduled Tribes (STs) in India remains a pressing concern despite various governmental initiatives aimed at improving access and quality of education for these marginalized communities. This research paper delves into the problems and challenges faced by STs in accessing education and explore potential strategies to address these issues. Drawing on historical context, current educational policies, and empirical data, the paper highlights persistent disparities in educational attainment between STs and other social groups. Factors such as socio-economic disadvantages, cultural barriers, inadequate infrastructure, and teacher-related challenges contribute to low enrollment, high dropout rates, and poor learning outcomes among ST students. The paper underscores the need for targeted interventions, including improved infrastructure, teacher training, parental engagement, and policy coherence between central and state governments, to enhance educational opportunities for STs. By addressing these challenges, it is possible to empower ST communities and pave the way for their socio-economic development and integration into mainstream society.

KEYWORDS: *Persistent Disparities, Socio-Economic, Inadequate Infrastructure, Mainstream Society.*

Introduction

In India, Scheduled Tribes (STs) represent a diverse group of indigenous communities that have historically faced marginalization and socio-economic disadvantages. Despite concerted efforts by the government to improve their educational status, STs continue to lag behind other social groups in terms of educational attainment and access to quality education. This research paper aims to critically examine the educational status of Scheduled Tribes in India, focusing on the myriad problems and challenges they encounter in accessing and benefiting from the education system. By delving into the historical context, current educational policies, socio-economic factors, and cultural barriers, this paper seeks to shed light on the multifaceted issues hindering the educational development of STs in India.

The educational landscape of Scheduled Tribes in India is marked by persistent disparities and complex challenges that hinder their academic progression and overall socio-economic development. Despite constitutional safeguards and affirmative action policies, such as reservations in educational institutions and government jobs, STs continue to face formidable obstacles in accessing quality education. Factors such as geographical remoteness, inadequate infrastructure, lack of qualified teachers, and cultural barriers contribute to low enrollment, high dropout rates, and poor learning outcomes among ST students. Moreover, socio-economic factors like poverty, unemployment, and social discrimination further exacerbate their educational vulnerabilities, perpetuating a cycle of marginalization and underdevelopment.

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Addressing the educational disparities faced by Scheduled Tribes is imperative for fostering inclusive growth and achieving sustainable development in India. This research paper seeks to contribute to the discourse on tribal education by identifying key problems and challenges and offering insights into potential strategies and interventions for addressing them. By analyzing existing literature, government reports, and empirical data, this paper aims to provide a comprehensive understanding of the educational status of Scheduled Tribes in India and advocate for targeted policies and initiatives that prioritize their educational needs and aspirations. Through collaborative efforts involving government agencies, civil society organizations, and community stakeholders, it is possible to create a conducive environment that empowers STs to overcome barriers and realize their right to quality education, thereby facilitating their socio-economic empowerment and integration into the mainstream society.

Scheduled Tribes are defined in the Indian Constitution, specifically under Article 366 (25), which identifies them as "part of our gathering inside such clans or ancestral networks as are considered under Article 342". Article 342 outlines the process for determining Scheduled Tribes, although it does not specify the criteria for detailing the local area of these tribes. However, there are well-defined criteria based on certain attributes:

Scheduled Tribes of India

- Geographical isolation: Scheduled Tribes often reside in secluded, remote areas such as hills and forests, leading to their geographical isolation.
- Backwardness: Their livelihoods are typically based on primitive agriculture and a low-cost closed economy with minimal technology, resulting in poverty. Additionally, Scheduled Tribes typically exhibit low levels of literacy and health.
- Distinctive culture, language, and religion: These tribes have developed their own unique culture, language, and religious practices, often specific to each community.
- Shyness of contact: Scheduled Tribes maintain minimal interaction with other cultures and people, exhibiting a marginal degree of contact.

In addition to these characteristics, the Constitution provides specific provisions for Scheduled Tribes in India, aiming to address their socio-economic and cultural needs and ensure their inclusion in the nation's development process.

Methodology of the Study

In this research, an online survey was employed, utilizing the accessible data from the websites of the Ministry of Welfare Society, Ministry of Tribal Welfare, and the Statistics Division of the Ministry of Tribal Affairs.

Objectives of the Study

- To assess the disparities in education levels between Scheduled Castes and Scheduled Tribes in India.
- To propose appropriate educational interventions aimed at enhancing the educational outcomes of individuals belonging to Scheduled Castes and Scheduled Tribes.

Review of Literature

Historical Context

The educational status of Scheduled Tribes in India is deeply rooted in historical and socio-economic factors. Historical marginalization, colonial policies, and post-independence challenges have contributed to the educational disparities faced by STs. Studies such as Mohanty (2017) and Patnaik (2019) provide insights into the historical context of tribal education in India, highlighting the impact of colonial policies on tribal communities and the subsequent efforts by the Indian government to address educational disparities through various policies and programs.

Challenges in Accessing Education

Access to quality education remains a significant challenge for Scheduled Tribes in India. Geographical isolation, inadequate infrastructure, and lack of schools in tribal areas are common barriers to education access (Dutta, 2018; Nayak, 2020). Additionally, socio-economic factors such as poverty, unemployment, and lack of awareness about the importance of education contribute to low enrollment and high dropout rates among ST students (Patil et al., 2016; Mishra & Kumar, 2018).

Quality of Education

Even for ST students who manage to access education, the quality of education remains a concern. Studies by Singh (2019) and Sharma (2020) highlight issues such as shortage of qualified teachers, poor learning outcomes, and inadequate teaching materials in tribal schools. Furthermore, language barriers and cultural insensitivity in the curriculum contribute to disengagement and alienation among ST students (Kumar & Dube, 2017).

Government Initiatives and Interventions

The Indian government has implemented various initiatives and interventions to address the educational challenges faced by Scheduled Tribes. Reservation policies in educational institutions, scholarships, and special schemes such as the Tribal Sub-Plan (TSP) are aimed at improving educational access and outcomes for STs (Kumar & Raval, 2019; Das & Mishra, 2021). However, the effectiveness of these initiatives remains a subject of debate, with scholars like Mohanty (2020) arguing for more comprehensive and targeted approaches.

Table 1: Literacy Rate among Scheduled Tribes, Scheduled cast and All Social Groups

Year	All Social Groups (Figures in Percentage)			SC (Figures in Percentage)			ST (figures in Percentage)			Difference Between SCs and STs Total %
	M	F	T	M	F	T	M	F	T	T
1961	40.4	15.35	28.3	16.96	3.29	10.27	13.83	3.16	8.53	1.74
1971	45.96	21.97	34.45	22.36	6.44	14.67	17.63	4.85	11.30	3.37
1981	56.38	29.76	43.57	31.12	10.93	21.38	24.52	8.04	16.35	5.03
1991	64.13	39.29	52.21	49.91	23.76	37.41	40.56	18.19	29.60	7.81
2001	75.26	53.67	64.84	66.64	41.9	54.69	59.17	34.76	47.10	7.59
2011	80.89	64.64	72.99	75.17	56.46	66.07	68.53	49.35	58.96	7.11

This table presents data on the educational attainment of different social groups in India, with a focus on Scheduled Castes (SCs) and Scheduled Tribes (STs), over the years from 1961 to 2011. The figures are represented in percentages and are categorized by gender (Male - M, Female - F, and Total - T). The table aims to highlight the educational gaps and trends between SCs and STs during the specified years.

Key Observations

Overall Educational Attainment

- In 1961, 40.4% of the total population had some form of education, with 28.3% for STs and a noticeable gap of 13.83% between SCs and STs.
- Over the decades, there is a consistent increase in overall educational attainment, reaching 80.89% in 2011. However, the gap between SCs and STs persists.

Gender Disparities

- Throughout the years, there is a consistent gender gap in educational attainment for both SCs and STs, with males generally having higher percentages than females.
- The gender gap is more pronounced among STs, especially in the earlier years, but it tends to narrow over time.

Increasing Educational Levels

- The educational levels for both SCs and STs have steadily increased from 1961 to 2011, indicating positive trends in education across these communities.

Persistent Disparities

- While there is an overall improvement in educational attainment for both groups, the difference in percentages between SCs and STs remains, indicating persistent disparities over the years.

Closing Gap

- Despite the persistent disparities, there is a slight reduction in the difference between SCs and STs over the years, suggesting some progress in narrowing the educational gap.

Interpretation

The table underscores the progress in educational attainment in India over the years but highlights the need for continued efforts to address the disparities between Scheduled Castes and Scheduled Tribes. Policies and interventions should focus on narrowing gender gaps and ensuring equitable access to education for all, with specific attention to the unique challenges faced by SCs and STs.

Dropout Rates of ST in India

Table: 2 Drop Out Rates (DOR)

	Boys	Girls
Classes I-V	37.2	33.9
Classes I-VIII	54.7	55.4
Classes I-X	70.6	71.3

Source: Statistics of School Education 2010-2011

The table presents dropout rates (DOR) for boys and girls across different educational stages in India during the academic year 2010-2011. In classes I-V, the dropout rate for boys is 37.2%, slightly higher than the rate for girls at 33.9%. As students progress to classes I-VIII, the dropout rates for both boys and girls increase, with boys at 54.7% and girls at 55.4%. The trend continues in classes I-X, with boys experiencing a dropout rate of 70.6%, and girls at 71.3%. The data suggests that, while boys tend to have slightly higher dropout rates in the early grades, the gender disparity diminishes as students move to higher classes. However, the overall high dropout rates at later stages emphasize the need for targeted interventions to address factors contributing to student attrition, ensuring improved educational retention for both boys and girls.

The current challenges faced by indigenous individuals in accessing education are as follows:

- Socio-economic and cultural barriers: Indigenous communities face severe socio-economic challenges compared to other groups, leading to reluctance to integrate into mainstream society out of fear of losing their cultural identity.
- Economic hardships: Tribal communities experience significant economic disadvantage, making it difficult for them to meet their basic needs.
- Parental reluctance towards education: Illiteracy among parents and their disinterest in education, coupled with a lack of encouragement from the community, hinder students' pursuit of education.
- Infrastructure challenges: Schools in tribal areas often lack essential learning materials, study resources, and sufficient human resources to effectively manage the educational institutions.
- Language barriers: Classroom instruction in official or regional languages, which are often unfamiliar to tribal children at the primary level, poses a significant challenge to their learning.
- Teacher-related obstacles: Inconsistent teacher presence in schools fails to establish effective communication bridges with tribal students, further hindering their educational progress.

Suggestions

- A monitoring committee should be established to regularly assess the functioning of schools.
- Transport facilities and free accommodation, such as hostels and residential schools, should be established to address the issue of long distances to schools.
- School infrastructure and basic facilities like drinking water and separate toilets for girls need to be improved to decrease the dropout rate.
- Elementary education should be conducted in the mother tongue to enhance learning outcomes.
- Awareness programs and literacy campaigns should be conducted to change parental attitudes towards their children's education.
- Guidance and counseling sessions should be organized for parents to improve their attitudes towards education.
- Local residents should be recruited as school teachers to ensure consistent teaching and minimize absenteeism.

- Teachers should receive proper training to enhance the effectiveness and quality of their teaching.
- Improved cooperation between central and state governments is essential for providing financial assistance and policymaking in education.
- Government authorities should prioritize the education of Scheduled Tribes, particularly those with low educational attainment.

Conclusion

Education serves as a powerful tool, illuminating our path and dispelling darkness. Throughout history, humans have embraced education, ensuring a comfortable life and imparting knowledge to successive generations for societal survival. However, Scheduled Tribes (STs) and Scheduled Castes (SCs) have faced educational challenges due to their living environments. Since gaining independence, the Indian government has implemented various initiatives, schemes, and funding allocations to promote education among tribal communities. Despite commendable efforts, the growth in educational rates among tribals remains significantly lower compared to other categories. Representation of tribal individuals in higher education is unsatisfactory, prompting the need for decisive actions and effective plans to overcome the obstacles hindering the educational pursuits of tribal children.

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ECO-FRIENDLY TECHNIQUES USED FOR WASTE MANAGEMENT IN RURAL AREAS

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ABSTRACT

Production of garbage is increasing much faster than the previous decades both in urban as well as in rural areas. However, the form of waste (both solid and liquid) generated in rural areas is predominantly organic and biodegradable and is becoming a major problem to the overall sustainability of the ecological balance. Household waste, a major share of total waste, if managed at its source, can reduce the environmental menace in the residential area. The Environmental Protection Act 1986 spells guidelines for waste management that each citizen should contribute to protect the environment by three R's i.e. reducing, reusing and recycling solid waste and thereafter managing its safe disposal. Recycling of waste can be done at household level and also at the community level. Organic waste consisting of vegetable peels/scrapes, fruit peels and seeds, garden waste etc. can be converted into a rich compost at household level. In rural areas, where major share is of biodegradable waste, can be managed by various methods viz., biogas, composting, vermicomposting. But inorganic waste viz. glass, plastic products, paper, metal pieces etc. can be sold to junk dealers (kabadi) for being recycled at industries. It is, therefore, very essential to segregate the waste at the source so that it is collected and taken for recycling. Hence, there is a dire need to work out a safe and environment friendly strategy for garbage disposal at the household as well as at the community level. Organic manure is a boon for health and environment. Hence, there is a need to educate the rural masses regarding the benefits and use of organic manure i.e. vermicompost for growing crops in their fields.

KEYWORDS: Garbage, Waste, Organic Manure, Recycle, Waste Management Techniques.

Introduction

The Environmental Protection Act 1986 spells guidelines for waste management that each citizen should contribute to protect the environment by three R's i.e. reducing, reusing and recycling solid waste and thereafter managing its safe disposal. Household waste is also a major share of total waste, if managed at its source, can reduce the environmental menace in the residential area. Reducing the generation of unnecessary waste would add lesser to landfill. This can be done successfully at household level by adopting simple tips to reduce waste. Recycling of waste can be done at household level and also at the community level. Organic waste consisting of vegetable peels/scrapes, fruit peels and seeds,

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garden waste etc. can be converted into a rich compost at household level. In rural areas, where major share is of biodegradable waste, can be managed by various methods viz., biogas, composting, vermicomposting. But inorganic waste viz. glass, plastic products, paper, metal pieces etc. can be sold to junk dealers (kabadi) for being recycled at industries. It is, therefore, very essential to segregate the waste at the source so that it is collected and taken for recycling. Hence, there is a dire need to work out a safe and environment friendly strategy for garbage disposal at the household as well as at the community level.

Government has also taken a number of steps to curb this menace. The Ministry of Environment and Forests notified the Municipal Solid Wastes (Management and Handling) Rules, which lay down the procedures and guidelines for collection, segregation, storage, transportation, processing, and disposal of municipal solid waste. The rules required all cities to set up suitable waste treatment and disposal facilities. They also specified standards for compost quality and management, and closure of landfill sites. Due to poor implementation of the rules, the Supreme Court had directed that a proper mechanism be developed to monitor the progress in the implementation process; all municipal authorities have been obliged to submit regular progress reports. But this could not make a desirable impact.

The governmental agencies have continued to take many strides from time to time to address the agenda. In the recent past, to accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation, the Prime Minister of India launched *Swachh Bharat* Mission on 2nd October, 2014. The main goal of the programme is a Clean India with all gram *panchayats*. Major thrust is being given to information, education and communication on importance of cleanliness. He reiterated that *Swachh Bharat* would therefore, make a significant impact on public health, and in safeguarding income of the poor, ultimately contributing to the national economy. While advocating the role of *panchayats* and villages, more than 2, 47,000 gram *panchayats* across the country will receive 20 lakh each per annum for the Clean India Campaign of *Swachh Bharat Abhiyan*. Emphasis is to be placed on awareness generation, triggering behavioural change and demand generation for sanitary facilities in houses, schools, *anganwadis*, and places of community congregation, and for waste management activities.

The Ministry of Human Resource Development (MHRD) has launched a programme called *Unnat Bharat Abhiyan* with an aim to connect institution of higher education with local communities to address the developmental challenges through appropriate technologies. Under the aegis of this programme, But framing laws and making policies by the government will not serve the purpose unless the masses are sensitized to this issue. Hence, awareness at the public level is essential to preserve the environment.

Predominantly, in rural areas the major share of waste is biodegradable, which is a very good resource and needs to be tapped properly. Recycling of biodegradable waste saves money as well as environment as it reduces pollution by avoiding land filling and then produces manure. It can lead not only to safe environment but also the income generation. Vermicomposting has been found to be a very good alternative to manage the organic waste and has been receiving impetus in recent times. Keeping in view the importance of the topic in current context, the study has been designed with the objective of studying the existing knowledge, attitude and practices of formal and informal groups of rural areas towards waste management and create awareness on appropriate techniques for decomposition of biodegradable waste.

Methodology

The present study was conducted in three phases. Bikaner district of the Rajasthan state was selected for the study. From Bikaner district, two villages i. e. one Khara village and second Kanasar village were taken under previously adopted villages of SKRAU they were selected purposively. Out of the two selected villages, two formal and two informal groups were formed. Thus in all, four formal and four informal groups, were formed to draw the samples respondents. Participatory Rural Appraisal technique was used to collect data. A pre-tested structured interview schedule was administered for data collection personally by the researcher. The interview schedule consisted of information regarding knowledge attitude & practices about waste disposal practices. Biodegradable waste consisting dung, kitchen waste and agro-waste was used for decomposition of waste. Data were collected using observation sheet. Trainings, comprising demonstration-cum-lecture and mass-media exposure by the experts, were imparted on vermicomposting in both the villages. Gain in knowledge, change in attitude and practices regarding waste disposal was studied administering the interview schedule.

Table 1: Distribution of respondents regarding existing knowledge for waste management techniques

Distribution of respondents regarding existing knowledge for waste management techniques (n=100) Sr. No.	Statements	Formal group (n=60)	Informal group (n=40)	Total (n=100) f
1.	Waste generated in your home should be segregated	30(60.0)	18(36.0)	48
2.	Waste should not be thrown in street/open area/pond etc.	30(60.0)	19(38.0)	49
3.	Wet and dry waste should be segregated	26(52.0)	20(40.0)	46
4.	Throwing garbage in dust –bin in home can save time, energy and environment	25(50.0)	19(38.0)	44
5.	Vegetable waste, kitchen waste, garden waste, crop waste, and cattle dung are biodegradable waste (wet waste)	28 (56.0)	19(38.0)	47
6.	Bio-degradable household waste can be reused/recycled	27(54.0)	19(38.0)	46
7.	Dung should be used for bio-gas which will give both fuel and manure	32(64.0)	14(28.0)	46
8.	Biodegradable waste should be used for vermicomposting	30(60.0)	18(36.0)	48
9.	Burning of agriculture waste leads to pollution	28(56.0)	21(42.0)	49
10.	Plastic, polythene, glass, metal, rubber are non-biodegradable waste (dry waste)	24(48.0)	14(28.0)	38
11.	Non-biodegradable waste like plastic, polythene etc can be used and recycled	24(48.0)	9(18.0)	33
12.	Burning of plastic, polythene, rubber, thermocol etc are hazardous to health and environment	30(60.0)	19(38.0)	49
13.	Selling non-biodegradable waste to junk dealer protects the environment	25(50.0)	17(34.0)	42
14.	Proper waste management will improve the health and environment	27(54.0)	20(40.0)	47
15.	Proper waste management can lead to economic benefits	22(44.0)	14(28.0)	36

The data in the table reveals that most of the respondents were aware and also agree to adopt the waste management techniques in their villages. After the training of vermi composting it has been found that among them gain in knowledge regarding waste management techniques was high level followed by medium level at post exposure stage. Change in attitude of the respondents regarding waste

management techniques was also found high, followed by medium and low level . This clearly shows that their change in attitude a lot regarding waste management techniques. After the training on improved waste management practices it increased to high followed by medium and low level. This clearly shows that their practices improved a lot for waste disposal and management.

Conclusion

Driven by rapid urbanization and growing populations, mankind is facing massive waste management challenge in issues like balancing objectives between promoting recycling and protecting consumers against harmful substances in recycled materials. In study ,it was found that maximum of them had low mass media exposure. One- half of them were member of a formal organization /society. At post exposure gain in knowledge, change in attitude and change in practices were of high level. Positive change in attitude and practices were found to be highly significant at 1 percent level of significance regarding waste management techniques. Respondents who were given training on waste techniques achieved a high level of gain in knowledge and positive change in attitude. The results show that their knowledge, change in attitude and change in practices improved a lot regarding waste management techniques. Adoption status was seen by visiting the family till August to December 2019. In Khara village two families continued with the vermicomposting technology, 3 families discontinued whereas in Kanasar village one family continued and other family discontinued with vermicomposting technology.

Possible way of limiting or eliminating the harmful effect of wastes. This aspect of environmental management is as important as other public amenities or infrastructures without which the life of contemporary man would be extremely difficult. This is because studies have shown a direct link between air, water and land pollution and diseases such as lung cancer, heart disease, cholera and hepatitis. In addition, climate change and eutrophication are a direct result of water and air pollution. Little wonder why there is a huge disparity in the life expectancy of people in developed and developing countries. Since factors such as population increase and the coming together of people to form communities lead to increase waste generation. Efforts should be directed towards making projections far ahead in order to ensure that new and existing settlements are adequately planned so as to accommodate possible increase in the volume of waste generation in future. Effectively planning ahead will prevent indiscriminate disposal and other harmful practices so as to prevent the build-up of open dumps and breeding ground for rats and other vermin which poses health risk.

The key to efficient waste management is to ensure segregation of waste at source and to ensure that the waste goes through different streams of recycling and resource recovery and finally scientific disposal in sanitary landfills. In each of these steps, trained and skilled manpower is required for better waste management process.

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ASSESSING FOREIGN DIRECT INVESTMENT IN INDIA: A QUANTITATIVE ANALYSIS OF FACTORS, PERCEPTIONS, AND POLICY IMPLICATION

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ABSTRACT

This paper presents a quantitative analysis of foreign direct investment (FDI) in India, focusing on factors influencing FDI inflows, perceptions of stakeholders, and policy implications. Adopting a quantitative research approach, data was collected through simple random sampling from a diverse pool of 400 participants, representing various demographics and perspectives. Statistical tools and techniques were employed to analyze the data, revealing significant associations between investment complexities, job creation, and the growth of FDI in India. Findings suggest that addressing regulatory challenges and promoting an investor-friendly environment are crucial for enhancing India's attractiveness as an FDI destination. The paper contributes to the existing literature by providing empirical insights into the dynamics of FDI in India and offers recommendations for policymakers, practitioners, and researchers to foster sustainable economic growth through FDI.

KEYWORDS: Foreign Direct Investment (FDI), India, Quantitative Analysis, Investment Complexities, Job Creation, Policy Implications, Stakeholder Perceptions.

Introduction

The surge in foreign direct investment (FDI) has emerged as a critical catalyst for economic growth and development in India, positioning the country as one of the world's most attractive destinations for international investors. Against the backdrop of globalization and liberalization, India has witnessed a significant influx of FDI across various sectors, contributing to job creation, technology transfer, and infrastructure development. [1][2][3] However, despite the positive strides made in attracting FDI, India continues to grapple with multifaceted challenges, ranging from regulatory complexities to infrastructural bottlenecks, which impede its full potential as an FDI destination. Consequently, there exists a pressing need to comprehensively evaluate the factors shaping the investment climate in India, understand stakeholders' perceptions, and formulate evidence-based policy interventions to optimize FDI inflows and leverage its transformative potential on the Indian economy.[4][5][6][7]

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The objectives of this paper are twofold: first, to analyze the status of FDI in India, highlighting sector-wise trends, sources, and patterns of investment; and second, to identify key challenges hindering India's attractiveness as an FDI destination and propose policy recommendations to foster a conducive investment climate.[8][9][10] Employing a quantitative research approach, this study draws upon data collected through simple random sampling from a diverse pool of 400 participants, reflecting varied demographic characteristics and viewpoints. By leveraging statistical tools and techniques, including regression analysis and correlation studies, the paper aims to unravel the intricate dynamics underlying FDI inflows and their impact on India's economic sustainability and growth trajectory.[11][12][13][14][15]

The significance of this research lies in its potential to offer actionable insights for policymakers, investors, and other stakeholders to navigate the complex terrain of FDI in India effectively. By elucidating the determinants of FDI inflows, identifying bottlenecks, and recommending policy reforms, this study seeks to inform evidence-based decision-making and facilitate the formulation of targeted interventions aimed at fostering a more conducive investment climate. Furthermore, the findings of this research contribute to the existing body of knowledge on FDI, offering empirical validation and nuanced understanding of the factors driving investment decisions in the Indian context. Through rigorous analysis and comprehensive synthesis of data, this paper endeavors to shed light on the transformative power of FDI and its implications for India's socio-economic development in the 21st century.[16][17][18][19][20]

Research Methodology

The research methodology employed in this study is a quantitative approach, designed to systematically measure and analyze respondents' opinions and perceptions related to foreign direct investment (FDI) in India. This methodology is well-suited to the research objectives, which involve assessing the significance of various factors influencing FDI inflows and identifying correlations or patterns within the collected data. The methodology encompasses several key components:[14][15]

- **Research Design:** The study adopts a cross-sectional research design, allowing for the collection of data at a single point in time from a diverse sample of participants. This design enables the researchers to capture a snapshot of stakeholders' perceptions and opinions on FDI in India.
- **Sampling Strategy:** The sampling strategy employed is simple random sampling, aiming to ensure the representation of diverse perspectives within the target population. A sample size of 400 participants has been determined, providing sufficient statistical power to draw meaningful conclusions. The sampling process considers factors such as gender, age, educational background, occupation, and income levels to enhance the generalizability of the findings.
- **Data Collection:** Data is collected through the distribution of surveys or questionnaires to the selected participants. The survey instrument is designed to gather respondents' opinions and perceptions on various aspects of FDI in India, including investment complexities, job creation, policy effectiveness, and overall economic impact.
- **Data Analysis:** The collected data is analyzed using statistical tools and techniques, including descriptive statistics, regression analysis, and correlation studies. These analytical methods enable the researchers to identify patterns, relationships, and trends within the data, as well as to test hypotheses and draw objective conclusions.

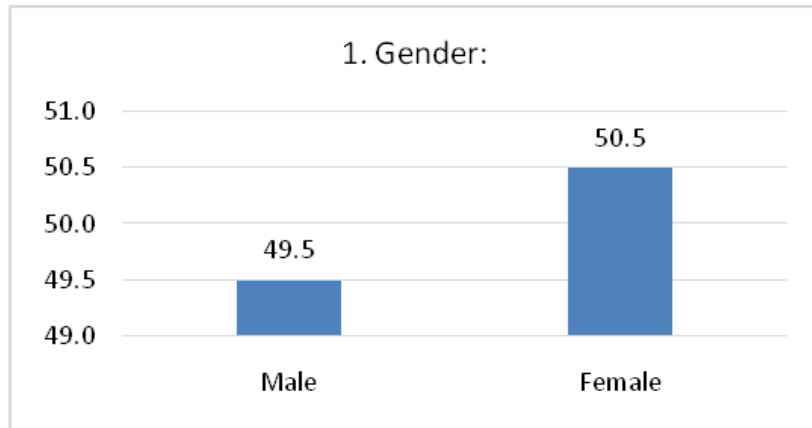
Frequency Analysis of Demographic Data

Frequency analysis of Data is given as follows;

Table 1: Descriptive Analysis of Gender

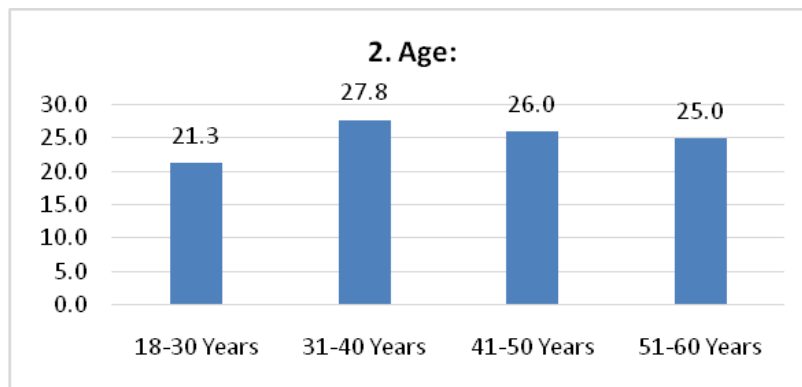
		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	198	49.5	49.5	49.5
	Female	202	50.5	50.5	100.0
	Total	400	100.0	100.0	

The distribution of gender among the respondents in this study reflects a balanced representation, with 49.5% identified as male and 50.5% as female. The equal participation of both genders among the 400 respondents contributes to a comprehensive and diverse dataset, enhancing the study's potential generalizability across different demographic groups.

**Table 2: Descriptive Analysis of Age**

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-30 Years	85	21.3	21.3	21.3
	31-40 Years	111	27.8	27.8	49.0
	41-50 Years	104	26.0	26.0	75.0
	51-60 Years	100	25.0	25.0	100.0
	Total	400	100.0	100.0	

The age distribution among the respondents in this study reveals a diverse range of participants. The majority of respondents fall into the age categories of 31-40 years (27.8%) and 41-50 years (26.0%), contributing to a cumulative percentage of 49.0% and 75.0%, respectively. Additionally, participants aged 18-30 years constitute 21.3%, while those in the 51-60 years category make up the remaining 25.0%. This distribution across various age groups ensures a well-rounded perspective, allowing for a more comprehensive analysis of views and opinions related to the research topic among individuals of different age brackets.

**Table 3: Descriptive Analysis of Educational Qualification**

		Educational Qualification			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School or Below	97	24.3	24.3	24.3
	Bachelor's Degree	118	29.5	29.5	53.8
	Master's Degree	105	26.3	26.3	80.0
	Doctoral Degree	80	20.0	20.0	100.0
	Total	400	100.0	100.0	

The educational qualification distribution among the respondents highlights a diverse range of academic backgrounds. The majority of participants hold a Bachelor's Degree, constituting 29.5%, followed closely by those with a Master's Degree at 26.3%. Respondents with a High School education or below make up 24.3%, while individuals with a Doctoral Degree represent 20.0%. The cumulative percentages showcase a progression from lower to higher educational levels, with each category contributing to a more comprehensive understanding of perspectives. This diverse educational composition ensures a well-rounded exploration of insights from individuals with varying levels of academic attainment.

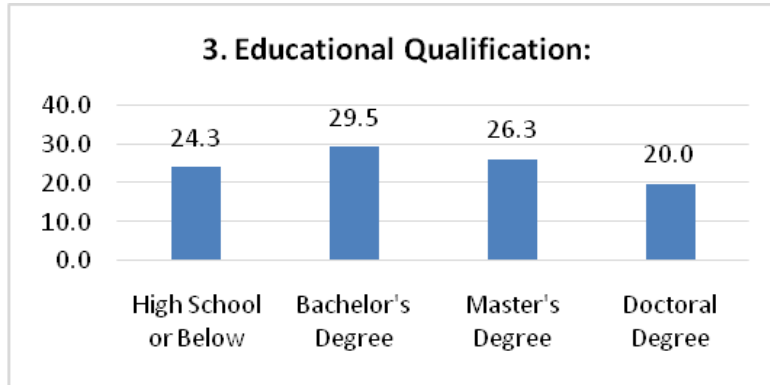


Table 4: Descriptive analysis of Occupation

		Occupation			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	96	24.0	24.0	24.0
	Employed (Private Sector)	83	20.8	20.8	44.8
	Employed (Public Sector)	69	17.3	17.3	62.0
	Self-employed	75	18.8	18.8	80.8
	Unemployed	77	19.3	19.3	100.0
	Total	400	100.0	100.0	

The occupational distribution of the respondents showcases a varied representation of individuals across different employment statuses. The largest group consists of students, constituting 24.0% of the sample. Employed individuals, both in the private sector (20.8%) and public sector (17.3%), contribute significantly to the distribution. Additionally, the self-employed category accounts for 18.8%, while unemployed individuals represent 19.3% of the total respondents. This diverse occupational composition ensures a multifaceted exploration of perspectives, considering the unique viewpoints and experiences associated with distinct occupational roles.

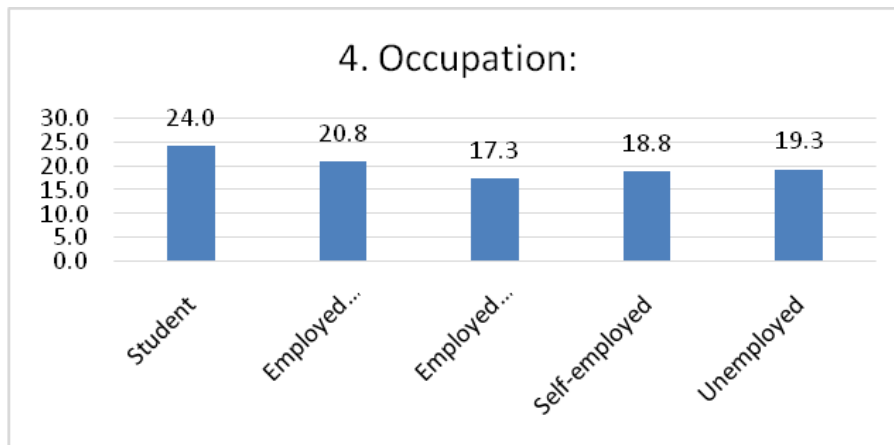


Table 5: Descriptive Analysis of Income per Month

		Income per Month			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Up to 20000/-	69	17.3	17.3	17.3
	20000/- to 30000/-	88	22.0	22.0	39.3
	31000/- to 40000/-	89	22.3	22.3	61.5
	41000/- to 50000/-	80	20.0	20.0	81.5
	More than 50000/-	74	18.5	18.5	100.0
	Total	400	100.0	100.0	

The income distribution among respondents reflects a spectrum of financial backgrounds. Approximately 17.3% of the participants reported an income of up to 20,000/-, while 22.0% fall within the income range of 20,000/- to 30,000/-. A slightly higher percentage, 22.3%, indicated an income between 31,000/- to 40,000/-, and 20.0% reported incomes ranging from 41,000/- to 50,000/-. The remaining 18.5% reported an income exceeding 50,000/-. This diversity in income levels within the surveyed population ensures a comprehensive exploration of opinions, considering the potential impact of financial factors on perceptions and experiences related to the investment climate in India.

Results and Discussion

Reliability Analysis of Data

The reliability analysis presented in Table 6 evaluates the internal consistency of the measurement instruments used to assess various dimensions related to financial inclusion. The first variable, "Financial Inclusion (FI)," comprising eight items, demonstrates an excellent level of reliability with a Cronbach's Alpha of 0.910. This suggests that the items measuring financial inclusion consistently capture the intended construct, ensuring the reliability of responses from participants.

Moving on to the "Role of SBI Bank in Financial Inclusion (ROSFI)," the reliability analysis yields a Cronbach's Alpha of 0.897, indicating a good level of internal consistency among the eight items. Although slightly below the benchmark for excellence, this score still signifies a reliable measurement of the role played by the State Bank of India (SBI) in fostering financial inclusion.

The third variable, "Constraints faced by SBI bank in financial inclusion (C)," exhibits an outstanding level of reliability with a Cronbach's Alpha of 0.944. This high value suggests a strong internal consistency among the items measuring the constraints faced by SBI Bank in the context of financial inclusion. Researchers can have confidence in the robustness of the instrument used to capture this critical aspect. Similarly, the variable "Socio-economic development of account holders (SED)" achieves a Cronbach's Alpha of 0.936, indicating excellent reliability. This suggests that the eight items comprising this variable consistently measure the socio-economic development of account holders, contributing to the overall reliability of the study.

Finally, the variable "Changes in awareness level after financial inclusion (CAL)" stands out with a remarkable Cronbach's Alpha of 0.964, signifying an exceptionally high level of internal consistency. The eight items measuring changes in awareness levels among account holders following financial inclusion demonstrate strong reliability, enhancing the credibility of findings related to this variable.

In summary, the reliability analysis underscores the robustness of the measurement instruments employed in the study. The high Cronbach's Alpha values across all variables indicate a consistent and reliable measurement of financial inclusion dimensions, contributing to the validity of the research outcomes. Researchers and practitioners can rely on the collected data to draw meaningful insights and conclusions regarding the various aspects of financial inclusion under investigation.

Table 6: Reliability Analysis

Sr. No.	Variable Name	Number of Items	Cronbach's Alpha	Remark on Reliability
1.	Financial Inclusion (FI)	8	0.910	Excellent
2.	Role of SBI Bank in Financial Inclusion (ROSFI)	8	0.897	Good
3.	Constraints faced by SBI bank in financial inclusion. (C)	8	0.944	Excellent

4.	Socio-economic development of account holders (SED)	8	0.936	Excellent
5.	Changes in awareness level about banking products, economic, social and general condition of account holders after financial inclusion (CAL)	8	0.964	Excellent

Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) is conducted to further examine the underlying factor structure of the variables in the study. This analysis aims to identify the latent factors that contribute to the observed relationships among variables. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity are essential in determining the appropriateness of conducting factor analysis.

The KMO measure assesses the proportion of variance among variables that might be common variance. In this analysis, the KMO measure is found to be 0.834. Typically, a KMO value above 0.7 is considered good, indicating that the variables are suitable for factor analysis. The obtained value of 0.812 suggests a high degree of sampling adequacy, reinforcing the appropriateness of proceeding with the factor analysis.

Bartlett's Test of Sphericity assesses whether the observed variables intercorrelate significantly, justifying the use of factor analysis. The test yields an approximate chi-square value of 1501.132 with 399 degrees of freedom, and the associated p-value is 0.000, which is less than the conventional significance level of 0.05.

The obtained p-value indicates that the correlations between variables are not due to random chance, providing evidence to reject the null hypothesis that the correlation matrix is an identity matrix (i.e., variables are uncorrelated). Therefore, the statistically significant Bartlett's Test supports the appropriateness of factor analysis for the dataset.

The KMO measure and Bartlett's Test of Sphericity collectively indicate that the dataset is suitable for exploratory factor analysis. The high KMO value suggests that the variables share substantial common variance, and the significant Bartlett's Test supports the presence of correlations among variables. Consequently, the subsequent factor analysis is expected to yield meaningful insights into the underlying factor structure of the measured variables, contributing to a deeper understanding of the relationships within the study.

Table 7: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.812
Bartlett's Test of Sphericity	Approx. Chi-Square	1501.132
	Df	399
	P-Value	.000

Table 7 provides a detailed overview of the communalities for each variable, offering insights into the proportion of variance in each variable that can be explained by the extracted factors through Principal Component Analysis. Communalities are essential in factor analysis as they help assess the adequacy of the chosen factors in explaining the observed correlations among variables.

The initial communalities, represented by values of 1.000 for each variable, indicate the total variance in each variable before factor extraction. As we transition to the extraction communalities, which result from the Principal Component Analysis, we observe varying degrees of reduction in variance. For instance, the variable FDI6 retains a high extraction communality of 0.868, suggesting that the extracted factors account for a substantial portion of its initial variance. On the other hand, FDI2 shows a lower extraction communality of 0.633, indicating that the factors extracted may not explain as much of its initial variance.

Variables related to different dimensions, such as "POR" (Problems and reasons for investment), "PR" (Policy Recommendations), "IFDI" (Impact of Foreign Direct Investment), and "FOI" (Flow of Investment), exhibit diverse extraction communalities. For instance, the variables under "PR" consistently display high extraction communalities, signifying that the factors derived through Principal Component Analysis effectively capture the variance in these variables.

Hypothesis Testing

The following three Hypothesis are needed to be tested for this research. Correlation test, and regression analysis are performed for hypothesis testing.

Note: If P-value > 0.05 then Null Hypothesis Accepted (NHA), and if P-value < 0.05 then Null Hypothesis Rejected (NHR).

Hypothesis 1 (Correlation Analysis) (NHA)

- **Null Hypothesis (H01):** There is no significant association between investment complexities and the growth of foreign direct investment in India.
- **Alternate Hypothesis (Ha1):** There is a significant association between investment complexities and the growth of foreign direct investment in India.

Table 8: Correlations (Hypothesis 1)

		FDI	IC
FDI	Pearson Correlation	1	.731
	P-Value		.000
	N	400	400
IC	Pearson Correlation	.731	1
	P-Value	.000	
	N	400	400

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

Result: There is a significant association between investment complexities and the growth of foreign direct investment in India.

The hypothesis (H01) under consideration aims to explore the association between investment complexities (IC) and the growth of foreign direct investment (FDI) in India. The null hypothesis (NHA) posits that there is no significant correlation between investment complexities and the FDI growth in the country. Conversely, the alternative hypothesis (Ha1) suggests that a meaningful association exists between these two variables.

The correlation analysis presented in Table 2 provides valuable insights into the relationship between FDI and IC. The Pearson correlation coefficient is a statistical measure used to quantify the strength and direction of a linear relationship between two variables. In this context, the Pearson correlation coefficient between FDI and IC is found to be 0.731, a substantial value.

The p-value associated with the correlation coefficient is a critical component in hypothesis testing. In this analysis, the p-value is reported as 0.000. Since this p-value is less than the conventional significance level of 0.05, it implies that the correlation observed is statistically significant. Therefore, based on the significance level criterion, the null hypothesis (H01) is rejected.

In conclusion, the results of the correlation analysis provide evidence to support the alternative hypothesis (Ha1). The significant positive correlation (0.731) indicates that as investment complexities increase, there is a corresponding growth in foreign direct investment in India. This finding contributes valuable insights for policymakers, investors, and researchers interested in understanding the dynamics between investment complexities and FDI growth in the Indian context.

Hypothesis 2 (Regression Analysis) (NHR)

- **Null Hypothesis (H02):** There is no association between job creation and the rise of foreign direct investment in India.
- **Alternative Hypothesis (Ha2):** There is an association between job creation and the rise of foreign direct investment in India.

Hypothesis 2 aims to investigate the relationship between job creation (JC) and the increase in foreign direct investment (FDI) in India through regression analysis. The null hypothesis (H02) proposes that there is no association between job creation and the rise of FDI, while the alternative hypothesis (Ha2) suggests the presence of such an association.

The regression analysis results presented in Tables 9 to 12 provide valuable insights into the relationship between job creation and FDI. Table 3 shows that the FDI variable has been entered into the model for analysis.

Table 9: Variables Entered/Removed^a (Hypothesis 2)

Model	Variables Entered	Variables Removed	Method
1	FDI ^b	.	Enter
a. Dependent Variable: JC			
b. All requested variables entered.			

The Model Summary in Table 10 reports an R-square value of 0.787, indicating that approximately 78.7% of the variability in job creation can be explained by the variation in foreign direct investment. This substantial R-square value supports the idea that there is a strong association between these two variables.

Table 10: Model Summary (Hypothesis 2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887 ^a	.787	.787	.41743
a. Predictors: (Constant), FDI				

The ANOVA table (Table 11) further strengthens the results by showing that the regression is statistically significant ($F = 1472.901$, $p = 0.000$).

Table 11: ANOVA^a(Hypothesis 2)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	256.649	1	256.649	1472.901	.000 ^b
	Residual	69.351	398	.174		
	Total	326.000	399			
a. Dependent Variable: JC						
b. Predictors: (Constant), FDI						

The coefficients in Table 12 reveal that the FDI variable has a significant positive relationship with job creation ($B = 0.980$, $p = 0.000$). The standardized coefficient (Beta) of 0.887 indicates a strong positive association between FDI and job creation.

Table 12: Coefficients^a (Hypothesis 2)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.214	.102		2.098	.037
	FDI	.980	.026	.887	38.378	.000
a. Dependent Variable: JC						

Result: There is an association between job creation and the rise of foreign direct investment in India.

In conclusion, based on the regression analysis results and the significance level criterion (p -value < 0.05), the null hypothesis (H_0) is rejected. The findings support the alternative hypothesis (H_a), concluding that there is indeed an association between job creation and the rise of foreign direct investment in India. These results have important implications for policymakers and stakeholders interested in understanding the impact of FDI on job creation in the Indian context.

Hypothesis 3 (Regression Analysis) (NHR)

- **Null Hypothesis (H03):** The growth of FDI is not beneficial for sustaining the Indian economy.
- **Alternative Hypothesis (Ha3):** The growth of FDI is beneficial for sustaining the Indian economy.

Hypothesis 3 seeks to explore the relationship between the growth of foreign direct investment (FDI) and its impact on sustaining the Indian economy. The null hypothesis (H_0) posits that the growth of FDI is not beneficial for sustaining the Indian economy, while the alternative hypothesis (H_a) suggests that FDI growth is indeed beneficial for sustaining the Indian economy.

The results obtained from the regression analysis, presented in Tables 7 to 8, shed light on the relationship between FDI and the sustainability of the Indian economy. Table 13 indicates that the FDI variable has been entered into the model for analysis.

Table 13: Variables Entered/Removed^a (Hypothesis 3)

Model	Variables Entered	Variables Removed	Method
1	FDI ^b	.	Enter
a. Dependent Variable: IE			
b. All requested variables entered.			

The Model Summary in Table 13 reports an R-square value of 0.681, implying that approximately 68.1% of the variability in sustaining the Indian economy (IE) can be explained by the variation in foreign direct investment. This substantial R-square value suggests a strong association between FDI growth and the sustainability of the Indian economy.

Table 14: Model Summary (Hypothesis 3)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.826 ^a	.681	.681	.47235
a. Predictors: (Constant), FDI				

The ANOVA table (Table 14) further supports the results by indicating that the regression is statistically significant ($F = 851.554$, $p = 0.000$).

Table 15: ANOVA^a (Hypothesis 3)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	189.992	1	189.992	851.554	.000 ^b
	Residual	88.798	398	.223		
	Total	278.790	399			
a. Dependent Variable: IE						
b. Predictors: (Constant), FDI						

The coefficients in Table 15 reveal that the FDI variable has a significant positive relationship with sustaining the Indian economy ($B = 0.843$, $p = 0.000$). The standardized coefficient (Beta) of 0.826 signifies a robust positive association between FDI growth and the sustainability of the Indian economy.

Table 16: Coefficients^a (Hypothesis 3)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.645	.116		5.580	.000
	FDI	.843	.029	.826	29.181	.000
a. Dependent Variable: IE						

Result: The growth of FDI is beneficial for sustaining the Indian economy.

In conclusion, based on the regression analysis results and the significance level criterion (p -value < 0.05), the null hypothesis (H_0) is rejected. The findings support the alternative hypothesis (H_a), concluding that the growth of FDI is indeed beneficial for sustaining the Indian economy. These results have important implications for policymakers and stakeholders interested in understanding the positive impact of FDI growth on the sustainability of the Indian economy.

Conclusion

The findings underscored the positive outlook on FDI contributions to specific sectors, signaling opportunities for economic growth. Respondents displayed diverse perspectives on the investment climate, with a significant portion acknowledging challenges related to bureaucratic procedures and regulatory complexities. The study revealed the transformative role of start-ups and small-scale enterprises in reshaping the investment landscape, emphasizing the need for nuanced policy approaches. Evolving trends, such as sustainable and socially responsible investment practices, were identified, reflecting the sector's adaptability and pursuit of global competitiveness.

The reliability analysis conducted on the measurement instruments used in the study revealed high Cronbach's Alpha values across all variables. This indicates strong internal consistency in measuring dimensions related to financial inclusion, such as Financial Inclusion (FI), Role of SBI Bank in Financial Inclusion (ROSF), Constraints faced by SBI bank in financial inclusion (C), Socio-economic development of account holders (SED), and Changes in awareness level after financial inclusion (CAL). These results instill confidence in the robustness of the instruments, ensuring that the collected data effectively captures the intended dimensions of financial inclusion.

The hypothesis testing explored associations between investment complexities (IC), job creation (JC), FDI growth, and the sustainability of the Indian economy. Positive correlations were found between investment complexities and FDI growth, emphasizing the role of addressing challenges to attract and sustain FDI. Additionally, significant positive associations were identified between job creation and FDI growth, as well as between FDI growth and the sustainability of the Indian economy. These nuanced findings offer valuable insights for policymakers and stakeholders to develop targeted strategies. The Chi-Square Test Statistics provided a comprehensive examination of the relationships between respondents' demographic characteristics and their perspectives on various aspects of FDI in India. While certain demographic variables did not exhibit significant associations with opinions on FDI-related statements, context-specific associations were identified for specific statements related to FDI, regulatory policies, and challenges faced by foreign investors.

In conclusion, the study's findings, ranging from the reliability of measurement instruments to nuanced insights from hypothesis testing and demographic analyses, collectively contribute to a rich and comprehensive understanding of the dynamics of Foreign Direct Investment and the Indian corporate sector. Researchers, policymakers, businesses, and investors can draw upon these findings to inform decisions, policies, and strategies in the context of FDI in India.

The investment climate in India presents a dynamic landscape characterized by both significant opportunities and policy challenges, with a particular emphasis on foreign direct investment (FDI). India, being one of the world's fastest-growing major economies, offers diverse sectors ripe for investment, including technology, manufacturing, and infrastructure. The government's recent policy reforms aimed at liberalizing FDI regulations have enhanced the attractiveness of the Indian market. However, challenges persist, including bureaucratic procedures, regulatory complexities, and occasional policy fluctuations, posing hurdles to the seamless approval process for foreign investments. Striking a balance between capitalizing on the nation's economic potential and addressing these policy challenges is imperative to create a favorable investment climate that not only attracts but sustains foreign investments, contributing substantially to India's economic growth and development.

The research study began by establishing the reliability and validity of the measurement instruments used to assess various dimensions related to financial inclusion. The high Cronbach's Alpha values across all variables, including Financial Inclusion (FI), Role of SBI Bank in Financial Inclusion (ROSBFI), Constraints faced by SBI bank in financial inclusion (C), Socio-economic development of account holders (SED), and Changes in awareness level after financial inclusion (CAL), instilled confidence in the robustness of the instruments. These results ensure that the collected data effectively captures the intended dimensions of financial inclusion, providing a solid foundation for subsequent analyses. The results of hypothesis testing provided a nuanced understanding of the relationships between investment complexities (IC), job creation (JC), FDI growth, and the sustainability of the Indian economy. The positive correlations between investment complexities and FDI growth, as well as between job creation and FDI growth, underscored the importance of addressing challenges to attract and sustain FDI. Additionally, the significant positive association between FDI growth and the sustainability of the Indian economy emphasized the pivotal role of FDI in contributing to economic health.

The Chi-Square Test Statistics revealed nuanced associations between respondents' demographic characteristics and their perspectives on various aspects of FDI in India. Context-specific associations were identified for specific statements related to FDI, regulatory policies, and challenges faced by foreign investors. These findings provide valuable insights for policymakers aiming to understand and address nuanced perceptions and concerns related to FDI in India. In conclusion, the comprehensive assessment of measurement instruments, factor structure, and model fit, coupled with insights from survey data and hypothesis testing, offers a robust foundation for policy implications and recommendations. Policymakers can leverage the validated instruments and derived factors to formulate targeted strategies addressing challenges, fostering an encouraging environment for investors, and maximizing the positive impact of FDI on the Indian economy. The study's findings contribute to the ongoing discourse on FDI in India, providing actionable insights for stakeholders across sectors.

Limitations of the Study

Limitations of the Study are given as follows;

- **Survey-Based Bias:** The reliance on survey responses introduces the potential for respondent bias and subjectivity, impacting the objectivity of the findings.

- Temporal Constraints: The study's focus on a specific time frame may limit the generalizability of findings as economic conditions and policies evolve.
- Self-Reported Data: The study primarily uses self-reported data, which can be influenced by participants' perceptions and interpretations, affecting data accuracy.
- Limited Scope: The research is confined to the considered factors and dimensions, excluding other potentially influential variables in the analysis.

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EXPLORING GREEN GROWTH AND THE GREEN ECONOMY PARADIGM IN INDIA

Dr. Ritika Sharma*

ABSTRACT

This study explores the various facets of sustainability, the green economy, and green growth within the framework of India. This article seeks to provide insights into how to ensure economic prosperity while supporting sustainability and resolving environmental issues through an analysis of India's shift towards a greener economy. The efficacy of green growth techniques in various Indian economic sectors is evaluated by means of an extensive analysis of pertinent policy papers, case studies, and literature. It investigates how to maximize environmental impact while promoting economic growth through the combination of sustainable agricultural methods, renewable energy sources, and eco-friendly technologies. India's Union Budget 2023–2024 prioritises green growth, aiming a transition to green economy with ecologically responsible agriculture and sustainable energy. The green economy concept places an emphasis on environmental conservation in addition to financial benefits to produce more robust and sustainable economies. Additionally, this study aims to provide suggestions for improving the nation's trajectory for sustainable development by assessing both achievements and problems, stressing the significance of striking a balance between economic growth with ecological stewardship.

Objectives: *The purpose of this study is to examine the nation's policies, programmes, and obstacles in support of ecologically sustainable economic development.*

Methodology: *The nature of this study work is theoretical. It uses only secondary sources for its data, which was gathered from books, articles, research journals, e-journals, newspapers, magazines, websites, planning commission reports, and economic surveys, among other publications.*

The study's conclusion emphasizes how critical it is to keep working to balance ecological integrity and economic development. It highlights the need for more investment in green technologies, stronger policy frameworks, and inclusive approaches that address socio economic inequities as possible paths for development.

Implications: *This study examines the socioeconomic effects of India's sustainability pledge, taking into account the impact of public-private partnerships, government regulations, and the engagement of local communities.*

KEYWORDS: *Sustainability, Green Economy, Green Growth, Socio Economic Inequities.*

Introduction

Green growth refers to the balanced green economic growth and sustainable growth, for which two factors must be enhanced by the positive circulation of green and economy. It uses resources wisely and is socially inclusive while lowering carbon emissions. The idea of a green economy has grown in importance within the individual development strategies of nations around the world (Bogovic & Grdic, 2020) Green growth refers to fostering economic growth while ensuring environmental sustainability and reducing ecological risks and scarcities. It focuses on using resources more efficiently, reducing waste, and mitigating environmental impacts. "Sustainable development is development that meets the needs of

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the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs." (Lorek & Spangenberg, 2014) India has been making strides in the area of sustainable development by adopting green growth and green economy principles. These initiatives aim to promote economic growth while ensuring environmental sustainability and social equity and these initiatives address issues of climate change, promote renewable energy, and foster sustainable development. In India, the government has launched various schemes and policies to promote the green economy, such as the National Solar Mission, the National Mission for Sustainable Agriculture, and National Action Plan on Climate Change (NAPCC). These initiatives offer several benefits, including reduced greenhouse gas emissions, improved air and water quality, and increased economic opportunities in the renewable energy and sustainable agriculture sectors. While India has made progress in promoting green growth and green economy principles, there are still challenges to overcome. These include the need for more investment in renewable energy infrastructure and the need to address social equity issues. However, there are also opportunities for innovation and collaboration to achieve sustainable development goals. In the article "Risks and Uses of the Green Economy Concept in the Context of Sustainable Development, Poverty, and Equity", (Khor, n.d.) thoroughly explores the dangers of utilising the concept in a narrow manner that prioritises environmental factors above all else. Khor emphasises the need to recognise the economic and social values of environmental resources as a key component of the green economy. To promote sustainable development, the green economy places importance on both environmental conservation and financial gains. The conservation and preservation of natural resources and the environment are crucial, as they are the most valuable assets. Promoters of the green or low-carbon economy argue that protecting the environment should be the top priority in the formulation and implementation of all economic policies.

Review of Literature

Melnyk et al. (2020) state that analysing the dynamics of a nation's economic greening is essential because it makes it possible to evaluate the environmental impact of a new economic model by examining a variety of contributing factors and figuring out the most effective ways to lessen the pressures that economic activity places on the environment. Energy indices and indicators are used by several international reporting systems to assess the status of the green economy and the possibility for green growth. Innovation that is sustainable. Energy indices and indicators are used by several international reporting systems to assess the status of the green economy and the possibility for green growth. According to Kasztelan (2017), green growth can be used to achieve sustainable development, which is seen as an enduring objective. The conclusion that the three concepts—green economy, green growth, and sustainable development—coexist rationally stems from the correlations between them being complementary and synergistic. Technology transfer and sustainable innovation promote green growth, which benefits economic growth (Fernades et al., 2021).

The risks associated with applying the green economy concept narrowly, giving priority to environmental reasons above other considerations, are discussed in detail in Khor 2021's article "Risks and Uses of the Green Economy Concept in the Context of Sustainable Development, Poverty, and Equity". As a crucial element of the green economy, Khor highlights the importance of acknowledging the social and economic values of environmental resources. The green economy prioritises financial rewards in addition to environmental preservation in order to support sustainable growth. Since natural resources and the environment are the most precious assets, they must be conserved and preserved. Environmental protection, according to proponents of the green or low-carbon economy, ought to come first in the development and application of all economic policies.

The purpose of green investment is to improve social justice and human well-being while reducing environmental risks and safeguarding the environment. It also acknowledges the importance of the environment and natural resources.

Chhaochharia's (2021) report on global and Indian green finance transactions analysed various data sources. The report assessed the level of awareness of green initiatives among the general public and the availability of funding for green initiatives. According to the report, India has made some progress in terms of awareness and financing options. However, there is room for improvement in the information management systems and the coordination among stakeholders. These improvements could help in

reducing information asymmetry and promoting environmentally responsible, sustainable economic growth. Economic growth is the main driver of economic development, but it also leads to pollution and loss of natural resources. Therefore, economic growth should not come at the cost of the environment.

Objective of Paper

The objective of the paper is to analyze the concept of green growth and green economy, their implementation, and their impact on sustainable development in India. The paper aims to assess the effectiveness of green growth policies and initiatives in achieving sustainable development goals, as well as to identify challenges and opportunities for further implementation.

Objectives of Research 1. To understand the concepts of a green economy, green growth, and sustainable development. 2. To identify the transition to a green economy in major economic sectors. 3. To highlight the green initiatives taken in India. 4. To examine the opportunities and hurdles faced in the green economy.

Research Methodology

This research paper is theoretical in nature. In this paper, an attempt has been made to investigate the green growth strategies adopted in various sectors to promote the sustainable development in economy. The data used in it is purely from secondary sources and has been collected with help of Articles, Research Journals, E-Journals, Books, newspapers, Magazines, planning commission reports, websites, and economic surveys.

Need for Green Economy

Although urbanization is a worldwide phenomenon, developing nations like India are seeing a sharp increase in this trend. According to a UN estimate, 60% of people on the planet will reside in cities by 2030. 90% of the world's rural population currently resides in Asia. Nonetheless, the pace of urbanization in the area is rising exponentially, and by 2050, it is predicted to reach 56%. Emerging nations like India, whose population is rapidly increasing and industrialization is accelerating, have the ability to completely change the economy by seizing the opportunities presented by urbanization. However, the climate is changing drastically as a result of this increased urbanization. The rising pollution levels in the air, water, and soil are mostly the result of urbanization. A few drawbacks of excessive urbanization include groundwater depletion due to overdevelopment and poor management, excessive carbon emissions from cars in metropolitan areas, and spatial congestion brought on by urban sprawl. Large Indian cities' growing populations have a negative impact on the environment and atmosphere in addition to placing a tremendous strain on the country's transportation, water, and energy management systems. (Kasztelan, 2017) revealed that sustainable development is viewed as a timeless goal that can be attained through the use of green growth. The complementary and synergistic nature of the correlations between the three concepts—green economy, green growth, and sustainable development—leads to the conclusion that their coexistence is reasonable. Sustainable innovation and technology transfer boost green growth, which in turn has a favourable impact on economic growth (Pandolfo et al., 2021). Green investment aims to raise social justice and human wellbeing while reducing environmental hazards and protecting the environment. Additionally, it recognises the value of the environment and its natural resources (Soundarrajan & Vivek, 2016)

There is a compelling need for a green economy as India is experiencing severe environmental degradation, including air and water pollution, deforestation, and loss of biodiversity. India is one of the largest contributors to global greenhouse gas emissions. India is heavily dependent on fossil fuels for its energy needs, which poses risks to energy security and contributes to air pollution.

A green economy can create new economic opportunities in sectors such as renewable energy, sustainable agriculture, and eco-tourism. This can contribute to economic growth, job creation, and poverty reduction. India's transition to a green economy can position it as a global leader in sustainable development. This can enhance India's international reputation and influence, while also contributing to global efforts to address environmental challenges. A green economy can help reduce India's carbon footprint by promoting renewable energy, energy efficiency, and sustainable transportation. It can promote energy security by diversifying energy sources and reducing reliance on fossil fuels. A green economy is essential for India's environmental sustainability, economic development, energy security, and global leadership. By promoting sustainable practices and reducing environmental impact, a green economy can help India achieve its sustainable development goals and contribute to a more sustainable future for all.

The Indian Framework of the Green Economy

The World Economic Forum launched the biennial Environment Performance Index in 2002. It rates nations from worst to best on a 0–100 scale based on environmental health parameters like air quality, ecosystem vitality, waste management, biodiversity habitat, and greenhouse gas emissions. With a pitiful score of 18.9, India ranked at bottom among 180 countries, while its score of 27.6 placed it at the 168th level in the EPI-2020. India is ranked lowest due to rapidly expanding greenhouse gas emissions and progressively harmful air quality.

Country	Rank	EPI Score
Denmark	1	77.9
United Kingdom	2	77.7
Finland	3	76.5
China	160	28.4
Pakistan	176	24.6
India	180	18.9

Source: Environment Performance Index 2022

As the only G-20 nation in the top 10, India is ranked seventh in the Climate Change Performance Index for 2024. The 14 variables of the CCPI are divided into four categories: energy use (20%), renewable energy (20%), climate policy (20%), and greenhouse gas emissions (40%) of the total score. Not a single nation scores highly enough overall across all index categories. Thus, the top three overall spots stay unoccupied. Despite having the largest population in the world, India has comparatively low per capita emission. India continues to rely heavily on coal, oil, and gas to meet its expanding energy needs. This dependence is a major source of greenhouse gas emissions and severely pollutes the air, especially in the urban areas. In addition to putting long-term policies in place that emphasize encouraging renewable energy and provide financial support for domestic manufacturing of renewable energy components, India must endeavor to satisfy its NDCs (Nationally Determined Contributions). One of the eight missions within the National Action Plan on Climate Change is the National Mission for a Green India (GIM). Its objectives are to respond to climate change and preserve, enhance, and restore India's forest cover. According to the India State of Forest Report (ISFR) 2021, compared to the previous assessment i.e. ISFR 2019, the nation's total forest cover has increased by 1540 square kilometres, its tree cover has increased by 721 square kilometres, and its total forest and tree cover has increased by 2261 square kilometres nationwide. The Green India Mission can combat the problems of food insecurity, climate change, water scarcity, and local communities' unstable livelihoods by pursuing long-term objectives. The goal of the Vision India@2047 project, launched by India's top policy think tank, NITI Aayog, is to produce a roadmap for the country's growth over the next 25 years. India is to become a global leader in innovation and technology, a role model for social welfare and human development, and an advocate for environmental sustainability as a result of this project.

GDP IN \$ tn (nominal)	2022	2023
United States	25.5	27.9
China	17.9	17.7
Japan	4.2	4.4
Germany	4.1	4.2
India	3.4	3.7

Growth path: What does the future hold? Scenario building for macroeconomic indicators

Indicator	Units	2030	2040	2047
GDP at current prices	Rs. Trillion	609.04	1759.79	3604.94
Per Capita GDP at current prices	Rs.	4,02,008	10,93,037	21,84,812
Exports	Rs. Trillion	1.58	4.56	8.67
Imports	Rs. Trillion	1.88	5.92	12.12
Investment	Rs. Trillion	195.5	591.1	1273.40
Savings	Rs. Trillion	207.8	649.4	1339.70

Source: <https://www.drishtias.com/daily-updates/daily-news-editorials/vision-india-2047-transforming-the-nation-future>

According to a number of projections, India's GDP will surpass that of Germany and Japan by 2030. India's nominal GDP is expected to increase from USD 3.4 trillion in 2022 to USD 7.3 trillion by

2030, according to ratings agency S&P. With its sizeable GDP, India would become the second-largest economy in the Asia-Pacific area as a result of its quick economic growth. According to NITI Aayog's preliminary forecasting estimates, India's imports will be valued at USD 12.12 trillion in 2047 and its exports will be valued at USD 8.67 trillion.

Challenges

- The energy sector's sustainable growth and the expansion of its "green" component, which produces zero emissions, present the first obstacle. The primary trend in the evolution of contemporary industry is the ESG transformation, which integrates the reduction of greenhouse gas emissions from energy production and transportation (as well as a decrease in specific energy consumption) in order to solve problems related to sustainable development. It also promotes social responsibility and increases the effectiveness of stakeholder interactions. It is still not possible to strike a balance between consumption and output, both now and future.
- Unbalanced government policies towards a green economy might potentially lead to a decrease in investment activity and a considerable slowdown in economic growth, particularly in developing nations. This presents a difficulty that has to be addressed. As a result, contemporary science must ensure the green economy's evolutionary development and regulate its growth to prevent national and international economic crises from being sparked by investments, jobs, and consumer demand.
- Making sure that the processes that make up the green economy and the growth of B2B, B2C, B2G, C2B, C2G, G2B, and G2G relationships within it are investment-attractive enough to prevent the current incentives for innovation from being destroyed by the creation and application of environmental responsibility standards.
- The final difficulty is that old industries that play a significant role in the contemporary economy—mining, in particular—are linked to breakthroughs in sustainable development. Ensuring the protection of human life and labor safety—two fundamental values of contemporary society—should be the first priority in the shift to a green economy, the most important step should be to ensure the main value of modern society—the labor safety and the protection of human lives

India's Initiative to Promote Green Growth

The main highlights of the Union Budget, 2023, are the seven "Saptarishi" priorities: inclusive development, reaching the last mile, infrastructure and investment, unleashing the potential, youth power, the financial sector, and green growth. The Finance Minister, Nirmala Sitharaman laid stress on the terms "green" and "sustainable" in her budget speech. She stated green growth might be revolutionary during Amrit Kaal. Green growth strategies aim to ensure that natural resources can reach their full economic potential in a sustainable manner.

The prime minister's concept for "LiFE," or Lifestyle for Environment, is to spur a movement toward environmentally friendly living. India is actively seeking the "panchamrit" and net-zero carbon emissions by 2070 in order to spearhead the global transition to a green industrial and economic system.

Furthermore, India is implementing multiple regulations and initiatives aimed at optimizing energy utilization throughout diverse economic domains, encompassing green buildings, green equipment, green farming, green mobility, and green fuels. These green growth initiatives not only help to reduce the economy's carbon intensity but also open up large-scale green job prospects.

Proposed Initiatives in Brief

- **National Green Hydrogen Mission**

The National Green Hydrogen Mission has been allocated a budget of Rs 19,700 crores with the aim of facilitating the country's economic shift towards reduced carbon intensity, reducing dependency on imported fossil fuels, and establishing the country as a leader in both technology and market share within this burgeoning sector. 5 MMT of annual production is the target by 2030.

- **GOBARdhan Scheme**

As part of the GOBARdhan Scheme, 500 new "waste to wealth" facilities—200 compressed biogas (CBG) plants and 300 community/cluster-based plants—will be constructed to promote the circular economy. A total of 10,000 crores were invested. A 5% CBG requirement will eventually be implemented for all companies that market biogas and natural gas.

- **Bhartiya Prakritik Kheti Bio-Input Resource Centers**

The Center will assist one crore farmers in making the switch to natural farming over the next three years by setting up 10,000 Bio-Input Resource Centers, creating a dispersed national network for the manufacturing of pesticides and micro-fertilizers.

- **MISHTI**

Mangrove protection will be revolutionized by the MISHTI (Mangrove Initiative for Shoreline Habitats & Tangible Incomes), which will be operated by merging funding from MGNREGS, Campa Fund, and other sources. Mangrove planting in saltpan areas and along India's coastline will be aided by MISHTI.

- **PM PRANAM**

The "Prime Minister Programme for Restoration, Awareness, Nourishment, and Amelioration of Mother Earth" will urge states and union territories to employ alternative fertilizers in moderation alongside chemical fertilizers.

- **Amrit Dharohar**

The Amrit Dharohar program, a central government effort to protect wetlands, was announced in the Union Budget for 2023–2024. Amrit Dharohar will be implemented over the course of the next three years in order to maximize the usage of wetlands and enhance biodiversity, carbon stocks, tourist opportunities, and revenue generation for neighboring people.

- **PM KUSUM**

The Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) Scheme aims to give Indian farmers energy security. As part of its Intended Nationally Determined Contributions (INDCs), India has committed to raising the installed capacity of electricity from non-fossil fuel sources to 40% by 2030. This promise is being honored. The three components of the system were introduced in 2019:

- Component-A: To establish on unused land 10,000 MW of decentralized grid-connected renewable energy power plants.
- Component-B: To install 17.50 lakh independent solar agriculture pumps.
- Component C: Designed to solarize ten lakh grid-connected agricultural pumps.

- **India's Vehicle Scrapping Policy**

This makes room for a cleaner fleet of cars, which makes it an essential component of the green growth strategy. On August 13, 2021, the Vehicle Scrapping Policy was introduced as a government-funded initiative to replace outdated automobiles on Indian roads with brand-new, modern vehicles. The new regulation states that if passenger cars and commercial vehicles that are over 15 years old and older do not pass the fitness and emission testing, they must be demolished. It is anticipated that the legislation will increase demand for new cars, reduce pollution, and provide job opportunities. Adhering to the Reuse, Recycle, and Recovery philosophy revitalizes our circular economy.

- **PM PRANAM**

Through the Prime Minister Program for Restoration, Awareness, Nourishment, and Amelioration of Mother Earth (PRANAM), the government would encourage and assist one crore farmers to embrace natural farming practices. This plan's primary goals are to lessen the use of chemical fertilizers, encourage chemical use in moderation, encourage green development, and lessen the harm that chemicals cause to the environment.

- **Deep Ocean Mission**

The mission aims at promoting safety of deep marine biodiversity as well as to deep ocean survey and exploration. Within five years, this programme will receive a budget of more than INR 4,000 crore.

- **Urban Swachh Bharat Mission 2.0**

The government is putting a lot of effort into efficiently managing garbage from construction and demolition projects. Their plan calls for the bioremediation of all former landfills as well as a focused effort to handle sewage treatment, sludge, and manure in an integrated manner. There will be a reduction in the usage of disposable plastic and a categorization of waste sources, which will reduce air pollution.

- **Other Investments in Green Energy**

- The Ministry of Petroleum & Natural Gas has allocated Rs. 35,000 crores for priority capital investments towards energy transition and net zero objectives. These goals essentially aim to reduce greenhouse gas emissions to as near to zero as possible, with any leftover emissions being reabsorbed from the atmosphere by places like forests and oceans, as well as energy security.
- Viability gap money, which is intended to give capital support to PPP (Public Private Partnership) projects that would not otherwise be financially feasible, will be awarded to Battery Energy Storage Systems with a 4,000 MWH capacity.
- An interstate transmission line for Rs 20,700 crore (government support: Rs 8,300 crore) would be built to evacuate and integrate 13 GW of renewable energy from Ladakh into the grid.

Suggestions

We believe that it is imperative to undertake specific steps in order to promote education for sustainable development, the adoption of sustainable lifestyles, and the promotion of good international practices on the green economy. Some of these steps include developing an informative guide with solutions for resource consumption optimization, creating a national information platform on resource efficiency, and launching online information campaigns. Other necessary actions include encouraging experience-sharing or cross-border initiatives to implement best practices on the green economy at the local public authority level. According to (Melnyk et al., 2020) assessing the dynamics of a country's economic greening is crucial because it allows for the assessment of the environmental impact of a new economic model by looking at various contributing factors and determining the best strategies for reducing environmental pressures from economic activity. Numerous global reporting systems rely on energy indices and indicators to evaluate the state of the green economy and the potential for green growth. (Chhaochharia, 2021) discussed global and Indian trends in green finance transactions. Utilising multiple data sources, the study evaluates both the level of public awareness and the availability of financial resources for green initiatives. The findings indicate that while India has made progress in terms of public awareness and financing options, there is scope for improvement in information management systems and coordination among stakeholders. Such improvements could help reduce information asymmetry and encourage environmentally responsible and sustainable economic growth. Economic expansion is the driving force behind economic progress, but it also contributes to pollution and the loss of natural resources, so it shouldn't come at the expense of the environment (Kishor & Bholane, 2013)

Conclusion

The country's economy and environment are suffering from the continuous depletion. In light of India's anticipated growth trajectory, environmental sustainability has emerged as a critical issue. Thus, the nation's attempts to achieve economic development while simultaneously preserving the environment and natural resources for future generations are the main focus of Budget 2023. This means promoting renewable energy, reducing pollution, improving waste disposal, and safeguarding wildlife. Green growth in India seeks to balance environmental preservation with economic growth in order to advance sustainable development.

India's potential as a growth engine in the future, the adoption of creative growth-oriented initiatives, and the necessity of trade reform are the ways forward. India may become the next major global economic engine as China's population ages. It has to strengthen its manufacturing sector and solve its de-industrialization, nevertheless. Increasing manufacturing employment, controlling competitive currency rates, bridging infrastructure and logistical gaps, boosting productivity in established industries, and advancing education and skill development are all examples of strategies that should be implemented. Projects like the Gati-Shakti Masterplan may be able to maintain India's current growth trajectory. Modifications to international trade regulations are required in order to support this shift and sustain the growth momentum. These would enable the transfer of technology and restore policy flexibility for industrialization.

Aside from creating green jobs, India has the potential to lead the world in green energy technology and advance the cause of world welfare. The budget for 2023–24 also includes projects worth \$100 million to enhance last-mile connectivity for sectors like ports and coal, as well as non-green growth initiatives like the construction of 50 new airports. Important projects like the National Mission on

Himalayan Studies, the National Adaptation Strategy, and the National Climate Change Action Plan are also devoid of finance. India must therefore ensure that funds are allocated to low-carbon technology, as well as identify and address hotspots for environmental degradation and economic sectors. India is taking steps to promote green growth and a green economy to ensure sustainable development. These initiatives are essential for addressing environmental challenges and promoting economic growth while ensuring social equity and environmental sustainability.

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भारत में सार्वजनिक क्षेत्र के उपक्रमों में शून्य आधारित बजटिंग

Murli Dhar Meena*

सार

सार्वजनिक क्षेत्र के उपक्रमों में वित्तीय प्रबंधन की एक नवीन तकनीक शून्य आधारित बजटिंग (Zero-Based Budgeting) का वर्तमान समय में अत्यधिक महत्वपूर्ण स्थान हो गया है। शून्य आधारित बजटिंग एक वित्तीय प्रबंधन प्रणाली है जिसमें संगठन दुआरा प्रत्येक नई अवधि के सम्बन्ध में प्रत्येक विभाग और गतिविधि के व्ययों का नए सिरे से मूल्यांकन एवं स्वीकृति प्राप्त करते हुए बजट तैयार किया जाता है। पारंपरिक बजटिंग विधियों के विपरीत इस प्रकार की बजटिंग में ऐतिहासिक खर्चों के आधार पर आगामी अवधि के लिए बजट तैयार करने की बजाय प्रत्येक आवश्यकता का पुनः स्वतन्त्र मूल्यांकन करके आगामी अवधि के लिए बजट तैयार किया जाता है एवं महत्वपूर्ण और आवश्यक खर्चों को प्राथमिकता प्रदान की जाती है। भारत में सार्वजनिक क्षेत्र के उपक्रमों में वित्तीय प्रबंधन बेहतर करने के लिए शून्य आधारित बजटिंग को अपनाने की आवश्यकता महसूस हुई है। इससे संगठनों के लिए वित्तीय पारदर्शिता, जवाबदेही, कुशलता और संसाधन वितरण के लिए उच्च मापदंड तय होते हैं। यह शोध भारत में सार्वजनिक क्षेत्र के उपक्रमों में शून्य आधारित बजटिंग की अवधारणा, बजट प्रक्रिया, और प्रभावों की व्याख्या करता है। यह शोध इस विषय पर उपलब्ध शोध अध्ययनों की समीक्षा करके किया गया है। लेखक को आशा है की पेपर के निष्कर्ष भारत में सार्वजनिक क्षेत्र के उपक्रमों के लिए बेहतर वित्तीय प्रबंधन हेतु शून्य आधारित बजटिंग तकनीक को अपनाने में महत्वपूर्ण सहयोगी साबित होंगे।

शब्दकोश: शून्य आधारित बजटिंग, सार्वजनिक क्षेत्र के उपक्रम, वित्तीय प्रबंधन।

प्रस्तावना

बजट निर्धारित अवधि के लिए प्राप्तियों एवं व्ययों का अनुमान लगाकर वित्तीय संसाधनों की व्यवस्था करने एवं उनके आवंटन की कार्य योजना है। सरकार के वार्षिक आय और व्यय का प्रस्ताव उस सरकार का बजट कहलाता है। बजटिंग की विभिन्न मुख्य तकनीकें पारंपरिक बजटिंग, वृद्धिशील बजटिंग, गतिविधि आधारित बजटिंग एवं शून्य आधारित बजटिंग हैं। पारंपरिक बजटिंग जिसमें पिछले वास्तविक आय एवं व्ययों के आगामी अवधि में भी जारी रहने की उम्मीद की जाती है के विपरीत शून्य-आधारित बजटिंग मानती है कि आगे ले जाने के लिए कोई शेष राशि या कोष नहीं है तथा ऐसे कोई खर्च भी नहीं है जो पहले से प्रतिबद्ध है। शून्य-आधारित बजटिंग में शून्य-आधार (जिसका अर्थ है कोई धन आवंटन नहीं) लेकर संगठन के लिए बजट तैयार किया जाता है। इसमें प्रत्येक बजट मद का पुनर्मूल्यांकन करना और विभाग द्वारा किए जाने वाले सभी खर्चों को उचित ठहराना एवं अनुमोदित किया जाना शामिल है। सार्वजनिक क्षेत्र के उपक्रमों में वित्तीय प्रबंधन की तकनीक

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शून्य आधारित बजटिंग (ZBB) का वर्तमान समय में अत्यधिक महत्वपूर्ण स्थान हो गया है। इससे संगठनों के लिए वित्तीय पारदर्शिता, जवाबदेही, कुशलता और संसाधन वितरण के लिए उच्च मापदंड तय होते हैं।

शून्य-आधारित बजटिंग (Zero-Based Budgeting) को 1970 के दशक में पीटर पायहर द्वारा विकसित किया गया था। पायहर दुआरा इसके निम्न 4 चरण बताये गए हैं— 1. संगठन में निर्णय इकाइयों की पहचान, 2. निर्णय पैकेज के संदर्भ में निर्णय इकाइयों का विश्लेषण करना, 3. निर्णय पैकेजों का मूल्यांकन करना एवं रैंकिंग प्रदान करना, 4. अनुमोदित किये गए निर्णय पैकेज का उपयोग करके संगठन के लिए एक संचालन योजना तैयार करना।

अतः शून्य-आधारित बजटिंग में संगठन में निर्णय इकाइयों की पहचान की जाती है तथा प्रबंधको द्वारा प्रत्येक योजनाओं/गतिविधियों के लिए निर्णय पैकेज तैयार किया जाता है, निर्णय पैकेज स्टेटमेंट में प्रत्येक निर्णय इकाई के उद्देश्य, योजनावार गतिविधियों का विवरण, अनुमानित लागत, वित्त पोषण के स्रोत एवं इनकी संगठन के लिए क्या आवश्यकता है आदि महत्वपूर्ण जानकारी सम्मिलित की जाती है निर्णय पैकेज के संदर्भ में निर्णय इकाइयों का विश्लेषण किया जाता है एवं निर्णय पैकेजों के मूल्यांकन के आधार पर उन्हें रैंकिंग प्रदान की जाती है। निर्णय पैकेज रैंकिंग प्रक्रिया के आधार पर अनुमोदित किये गए निर्णय पैकेज का उपयोग करके संगठन के लिए एक संचालन योजना तैयार की जाती है। शून्य आधारित बजटिंग में बजट तैयार करने एवं परिचालन के सभी स्तरों पर प्रबंधको एवं कर्मचारियों की भागीदारी एवं जवाबदेही तय की जाती है। इसमें प्रत्येक विभाग के लिए उद्देश्यों का निर्धारण कर दिया जाता है। नवीन गतिविधियों/ योजनाओं की तरह वर्तमान गतिविधियों/योजनाओं के लिए भी संसाधनों के आवंटन एवं कार्यान्वयन के प्रत्येक स्तर पर मूल्यांकन किया जाता है एवं उचित ठहराया जाने पर ही बजट अनुमोदित किया जाता है।

सार्वजनिक उपक्रमों में शून्य आधारित बजटिंग के फायदे

- शून्य आधारित बजटिंग प्रणाली में कम उपयोगी योजनाओं / गतिविधियों को पहचान करके बजट कटौती करने एवं संसाधनों का आवंटन कुशलता के साथ करने सार्वजनिक उपक्रमों में अनावश्यक खर्चों पर लगाम लगती है एवं आर्थिक बचत प्राप्त होती है।
- संसाधनों को कम प्राथमिकता से अधिक प्राथमिकता वाले गतिविधियों/ योजनाओं में पुनः आवंटित करने एवं गैर उपयोगी गतिविधियों/ योजनाओं की पहचान कर उन्हें बंद करने से सार्वजनिक उपक्रमों की आर्थिक स्थिति में सुधार तथा प्रभावशाली एवं दक्ष वित्तीय प्रबंधन स्थापित होता है।
- इस प्रकार की बजटिंग में प्रबंधको एवं कर्मचारियों की भागीदारी एवं जवाबदेही तय किये जाने एवं निर्णय पैकेजों के मूल्यांकन एवं प्राथमिकता निर्धारण में कर्मचारियों को शामिल किये जाने से विभागों के बीच सामंजस्य स्थापित होता है।
- शून्य आधारित बजटिंग प्रणाली में योजनाओं / गतिविधियों का प्रतिवर्ष एवं प्रत्येक चरण पर मूल्यांकन किये जाने एवं प्राथमिकता निर्धारण कर आनुपातिक आधार पर अपेक्षित राशी ही अनुमोदित करने से सार्वजनिक उपक्रमों के संसाधनों का पूर्ण एवं कुशलतापूर्वक उपयोग संभव हो पाता है।
- निर्णय पैकेज बनाकर योजनाओं / गतिविधियों का प्रत्येक स्तर पर मूल्यांकन किये जाने से एक जैसी अथवा अत्यधिक व्यापक योजनाओं / गतिविधियों की पहचान किया जाना एवं सुधारात्मक कदम उठाना संभव होता है।
- सार्वजनिक उपक्रमों में क्रियान्वित ऐसी योजनाओं जो की अत्यधिक महत्वपूर्ण एवं उच्च प्राथमिकता वाली हैं उनकी पहचान कर अपेक्षित वित्तीय प्रावधान करने के फलस्वरूप संगठनात्मक लक्ष्यों की प्राप्ति होती है।

सार्वजनिक उपक्रमों में शून्य आधारित बजटिंग के क्रियान्वयन में समस्याएं

- शून्य आधारित बजटिंग प्रणाली के क्रियान्वयन के लिए अधिक संख्या में प्रशिक्षित एवं कुशल कार्मिकों की आवश्यकता होती है इस वजह से इसे सार्वजनिक उपक्रमों में प्रभावी रूप में कार्यान्वित किया जाने में समस्या आती है एवं इसकी लागत भी बहुत अधिक हो जाती है।
- पहले से संचालित गतिविधियों/योजनाओं को भी शून्य आधारित बजटिंग प्रणाली के प्रत्येक स्तर पर मूल्यांकन एवं अनुमोदन किया जाने के कारण सार्वजनिक उपक्रमों में योजनाओं को लागू किये जाने में अनावश्यक देरी होती है।
- बाजार में उतार-चढ़ाव तथा अनिश्चितताओं के कारण विभागों को संचालित गतिविधियों/योजनाओं को शून्य आधारित बजटिंग प्रणाली के प्रत्येक स्तर पर उचित ठहराने में समस्या का सामना करना पड़ता है।
- शून्य आधारित बजटिंग प्रणाली को कार्यान्वयित किये जाने के लिए अत्यधिक सूचनाओं का विश्लेषण करने की आवश्यकता होती है जिसकी वजह से यह अत्यधिक जटिल प्रणाली प्रतीत होती है।
- सार्वजनिक उपक्रमों में शून्य आधारित बजटिंग के क्रियान्वयन के लिए कुशल एवं दक्ष कार्मिकों का अभाव होता है।
- सार्वजनिक उपक्रमों पर सरकार के नियंत्रण एवं सरकारी हस्तक्षेप के कारण शून्य आधारित बजटिंग प्रणाली को लागू करने में समस्याएं आती हैं।
- सार्वजनिक उपक्रमों में शून्य आधारित बजटिंग प्रणाली को लागू किये जाने के लिए सरकार के स्तर पर नीति निर्माण एवं दिशानिर्देशों का अभाव है।

अध्ययन के उद्देश्य एवं शोध कार्यप्रणाली

उपरोक्त अध्ययन का उद्देश्य शून्य आधारित बजटिंग प्रणाली की व्यापक समझ प्रदान करना है। इसके साथ ही अध्ययन का उद्देश्य सार्वजनिक उपक्रमों में शून्य आधारित बजटिंग प्रणाली को लागू करने के फायदों एवं समस्याओं पर प्रकाश डालना तथा इसके बेहतर क्रियान्वयन हेतु सुझाव प्रदान करना है। शोध वर्णनात्मक एवं विश्लेषणात्मक प्रकृति का है। शोधकर्ता ने द्वितीयक डेटा विश्लेषण पद्धति का उपयोग किया है इसमें विभिन्न प्रतिष्ठित स्रोतों से डेटा का संग्रहण करना एवं उनका विश्लेषण करना सम्मिलित

साहित्य की समीक्षा

गौरव सिंह एवं प्रकाश यादव (2011) ने भारत में सार्वजनिक उद्यमों के लिए शून्य आधारित बजटिंग के महत्व के विषय पर शोध कार्य किया एवं निष्कर्ष में पाया की परिचालन लागत में कमी और विकास दर में गिरावट के कारण व्यावसायिक उद्यम में एक प्रभावी बजट प्रक्रिया की आवश्यकता तेजी से स्पष्ट है वर्तमान में सभी उद्यमों को संसाधनों की कमी, घटते मुनाफे, कीमतों को कम करने के दबाव एवं सरकारी नियंत्रणों आदि चुनौतियों का सामना करना पड़ रहा है। शून्य आधारित बजटिंग एक मजबूत और प्रभावी प्रबंधन उपकरण है जिसकी मदद से उद्देश्यों के परिणाम प्राप्त करने के लिए संगठन गतिविधियों के प्रत्येक चरण के लिए योजना, परिचालन, समीक्षा और नियंत्रण प्रणाली के लिए एक मजबूत आधार विकसित किया जा सकता है।

एस टी नजीम (2021) ने अपने शोध के दौरान केरल सरकार के सन्दर्भ में भारत में सरकारी बजट के प्रबंधन पर अध्ययन किया। केरल सरकार के बजट प्रबंधन प्रणाली का अध्ययन करने पर पाया गया की बजट विचरण का प्रमुख कारण रणनीतिक बजट निगरानी प्रणाली की अनुपस्थिति है एवं राज्य की वित्तीय नीतिया भी इसका कारण रही है। बजट और राज्य की वित्तीय नीतियों में असंगतता का बजट प्रबंधन पर वित्तीय प्रभाव पड़ता है। बजट मेनेजमेंट प्रणाली की केवल औपचारिक पूर्ति सरकार की दक्षता को कम करती है एवं सरकार

के परिचालन वातावरण में प्रदर्शन को भी प्रभावित करती हैं। शोधार्थी ने राज्य की राजकोषीय रणनीतिक दक्षता में सुधार किये जाने की सिफारिश की है एवं इसके लिए बजट सुधारों की आवश्यकता बतायी है।

इब्राहीम (2019) ने राजकीय संगठनों के लिए शून्य आधारित बजटिंग डिजाइन करने के विषय पर शोध किया एवं अपने शोध में बताया कि परम्परागत बजटिंग, जिसमें गत वर्ष के आधार पर चालू वर्ष का बजट बनाया जाता है के स्थान पर शून्य आधारित बजटिंग तकनीकों को लागू करके बजटिंग समस्याओं को कम किया जा सकता है। शून्य आधारित बजटिंग में प्रत्येक परियोजना को इस प्रकार से जांच किया जाता है जैसे वो पहली बार लागू की जा रही हो। यह केवल प्रदर्शन मूल्यांकन के उपयोग के माध्यम से पूरा किया जा सकता है जो प्रभावशीलता और दक्षता के महत्वपूर्ण उपायों को ध्यान में रखता है। इसमें संगठन को स्वतन्त्र निर्णय इकाइयों में बांटना आवश्यक है, प्रत्येक निर्णय इकाई प्रबंधक द्वारा अपनी योजनाओं के लिए एक निर्णय पैकेज तैयार किया जाना चाहिए, जो सेवा के विभिन्न संभावित स्तरों को ध्यान में रखता हो। निर्णय पैकेज स्टेटमेंट में प्रत्येक निर्णय इकाई के उद्देश्य, गतिविधियों का विवरण, कार्य-भार प्रदर्शन, अनुमानित लागत, वित्त पोषण स्रोत आदि जानकारी के विभिन्न स्रोत होने चाहिए। निर्णय पैकेज रैंकिंग प्रक्रिया के लिए निर्णय पैकेजों की ऐसी सूची की आवश्यकता होती है जिसमें उनके संगठन के लिए आवश्यकता को मूल्यांकित किया गया हो। विभिन्न निर्णय पैकेजों की स्थिति के आधार पर बजट तैयार किया जाने की आवश्यकता बतायी गयी है।

हुसैन इलयास (1995) ने अपने शोध में महाविद्यालयों में अपनाये जाने वाले विभिन्न बजट प्रणालियों, बजट प्रक्रियाओं, नवाचारों एवं बजट आंकड़ों का अध्ययन किया एवं निष्कर्ष निकाला कि 24 प्रतिशत से भी कम महाविद्यालयों में शून्य आधारित बजटिंग लागू नहीं है एवं निजी महाविद्यालयों में यह प्रतिशत ज्यादा है।

कैलाघन शॉन, हॉक काइल और केरी मिग्नेरी (2014) के अनुसार कंपनियां अक्सर शून्य आधारित बजटिंग पद्धति से कतराती हैं, क्योंकि वे मानती हैं कि इसका अर्थ है "शून्य से बजट", जबकि वास्तव में, यह एक संरचित प्रक्रिया है जो लागत प्रबंधन की संस्कृति का निर्माण कर सकती है। अपने शोध पत्र के माध्यम से शून्य-आधारित बजट के बारे में पांच मिथक और वास्तविकताएं बताये। जो निम्न प्रकार हैं- "पहला मिथक - शून्य-आधारित बजट का सीधा सा अर्थ है अपने बजट को शून्य से बनाना, वास्तविकता - शून्य-आधारित बजट लागत प्रबंधन की एक स्थायी संस्कृति बनाने के लिए एक दोहराई जाने वाली प्रक्रिया है। दूसरा मिथक - शून्य-आधारित बजट को लागू करने के लिए 'हड्डी तक' काटने की आवश्यकता होती है, वास्तविकता - लागत में कमी की डिग्री कंपनी के टॉप-डाउन लक्ष्य पर आधारित है। तीसरा मिथक- शून्य-आधारित बजट आपके व्यवसाय को अभिभूत कर देगा और इसे कुछ और करने से रोक देगा, वास्तविकता- एक नए शून्य-आधारित-बजट कार्यक्रम का प्रारंभिक रोलआउट एक केंद्रीय टीम के नेतृत्व में किया जा सकता है और चार से दस महीनों में पूरा किया जा सकता है। चौथा मिथक- शून्य-आधारित बजट केवल बिक्री, सामान्य और प्रशासनिक लागतों पर केंद्रित है, वास्तविकता- शून्य-आधारित बजट को किसी भी प्रकार की लागत पर लागू किया जा सकता है। पांचवा मिथक - शून्य-आधारित बजट विकास-उन्मुख कंपनियों के लिए डिजाइन नहीं किया गया है, वास्तविकता- शून्य-आधारित बजट का उपयोग बढ़ती कंपनियों द्वारा सफलतापूर्वक किया जाता है ताकि अनुत्पादक लागतों को अधिक उत्पादक क्षेत्रों में पुनर्निर्देशित किया जा सके जो विकास को बढ़ावा देते हैं।"

एकनेम (2014) ने अपने अध्ययन में कैलाबर विश्वविद्यालय, नाइजीरिया में प्रभावी विश्वविद्यालय बजट कार्यान्वयन के लिए शून्य-आधारित बजट एक प्रबंधन उपकरण के रूप में माना है। अध्ययनकर्ता के अनुसार सूचनाओं की अधिकता, समय लेने वाली बजट प्रक्रिया और स्टाफ प्रशिक्षण जैसे कारकों ने विश्वविद्यालय के बजट कार्यान्वयन के लिए शून्य-आधारित बजट प्रणाली को लागू किये जाने को बाधित किया है। विश्वविद्यालयों में बजट कार्यान्वयन के लिए शून्य-आधारित बजट को लागू किया जाना चाहिए। यह विश्वविद्यालयों में बजट कार्यान्वयन के लिए प्रबंधन के लिए मददगार साबित हो सकता है एवं संचालन की योजना, निष्पादन और नियंत्रण की क्षमता के साथ महत्वपूर्ण बजट सुधारों को बढ़ावा दे सकता है।

निष्कर्ष

वर्तमान समय में वैश्विक स्तर पर निजी एवं सार्वजनिक क्षेत्र के उपक्रमों में गलाकाट प्रतिस्पर्धा स्थापित हो गयी है। इस तरह के आर्थिक परिदृश्य में भारत में सार्वजनिक क्षेत्र के उपक्रमों के लिए एक प्रभावी बजट प्रणाली क्रियान्वित किये जाने की आवश्यकता है। अध्ययन के निष्कर्ष में यह पाया है कि शून्य आधारित बजटिंग वित्तीय जवाबदेही में सुधार, कुशलता एवं दक्षता की प्राप्ति एवं सेवा वितरण में सुधार की संभावना को बढ़ावा देती है लेकिन सार्वजनिक क्षेत्र में इसका सफल प्रबंधन चुनौतियों से अछुता नहीं है। सार्वजनिक क्षेत्र के उपक्रमों में शून्य आधारित बजटिंग को लागू करने को लेकर स्वीकृति और विरोध दोनों हो सकते हैं। सार्वजनिक संगठनों की जटिल संरचना, सरकारी नियंत्रण, नोकरशाही, संसाधनों की कमी और परम्परागत बजटिंग परंपराएँ आदि इसको सफलतापूर्वक लागू करने में प्रमुख बाधाएँ हैं। इन बाधाओं को पार करने के लिए कुशल एवं दक्ष नेतृत्व के साथ एक मजबूत परिवर्तन प्रबंधन रणनीति तैयार करने की आवश्यकता है। अतः भारत में सार्वजनिक क्षेत्र के उपक्रमों में शून्य आधारित बजटिंग प्रणाली को लागू करने से सार्वजनिक क्षेत्र में स्थिरता और लचीलापन, अधिक जवाबदेह और अनुकूल वित्तीय प्रबंधन दृष्टिकोण का मार्ग प्रशस्त हो सकता है। अध्ययन के निष्कर्ष भारत में सार्वजनिक क्षेत्र के उपक्रमों के लिए बेहतर वित्तीय प्रबंधन हैतु शून्य आधारित बजटिंग तकनीक को अपनाने में महत्वपूर्ण सहयोगी साबित हो सकते हैं एवं सार्थक वित्तीय प्रबंधन की दिशा में सामग्री के रूप में कार्य कर सकती हैं।

सुझाव

अध्ययन के निष्कर्षों के आधार पर सार्वजनिक उपक्रमों में प्रभावी रूप से शून्य आधारित बजटिंग प्रणाली क्रियान्वित करने के लिए निम्नलिखित सुझाव प्रदान किये जाते हैं—

- सार्वजनिक उपक्रमों में शून्य आधारित बजटिंग के प्रभावी क्रियान्वयन हैतु सरकार के स्तर पर नीति निर्माण किया जाना चाहिए एवं सार्वजनिक उपक्रमों को इसे लागू करने के लिए दिशानिर्देश प्रदान किये जाने चाहिए।
- सार्वजनिक उपक्रमों में शून्य आधारित बजटिंग के क्रियान्वयन के लिए कार्मिकों को पर्याप्त प्रशिक्षण एवं प्रोत्साहन प्रदान किया जाना चाहिए है।
- सार्वजनिक उपक्रमों में प्रभावी बजट नियंत्रण के उद्देश्य से शून्य आधारित बजटिंग को अन्य किसी बजटिंग प्रणाली के साथ अथवा केवल कुछ योजनाओं के लिए भी लागू किया जा सकता है।
- सार्वजनिक उपक्रमों में शून्य आधारित बजटिंग प्रणाली के क्रियान्वयन हैतु निर्णय इकाइयों की पहचान, निर्णय पैकेज तैयार करने, निर्णय पैकेजों को प्राथमिकता प्रदान करने एवं उनका अनुमोदन करने तथा सूचनाओं के विश्लेषण आदि हैतु एक व्यवस्थित तकनीकी विश्लेषण प्रणाली विकसित की जानी चाहिए।

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A STUDY OF FINANCIAL LITERACY AND ITS DETERMINANTS

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ABSTRACT

The purpose of this study is to understand financial literacy and effects of various determinants like age, gender, education, marital status, income on financial literacy. Financial literacy is way to understand how money works. It helps the individuals to improve their overall well being. Earlier research has shown that levels of financial literacy in India is low. People usually find it difficult to take decisions regarding personal finances in their lifetime. An attempt has been made in this paper to determine the effects of determinants like age, gender, marital status, education, income on financial literacy. Findings of the study suggest that the some determinants do play a big role in taking financial decisions while some does not. Findings of this study will help policymakers and regulators to make appropriate strategies to increase financial literacy among the people.

KEYWORDS: *Financial Literacy, Financial Decisions, Individual Finances, Age, Gender, Income, Education, Marital Status.*

Introduction

The OECD (organisation first economic cooperation and development) has defined financial literacy as follows: "A combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing".

Good financial literacy throws light on one's awareness on various avenues, skills and investment decision. The financial literacy's importance is increasing day by day due to emergence of new and innovative financial products, intricacy and complexity of the financial market and also due to the dynamic political, economical, social and demographic factors. Earlier research has suggested that those with low levels of financial literacy, faces issues relating to personal finance such as savings, investments, consumption, borrowings etc.

In recent times, the scenario of financial landscape has changed in our country, it has become complex over the past few years with the introduction of many financial products in the market. In order to understand them and use them, a minimum level of financial literacy is necessary. It indirectly in a way contributes to the economic growth and development of the country.

Improving financial literacy can lead to better financial decision-making, increased financial stability, and the ability to plan for future goals. Many resources, including online courses, workshops, and educational materials, are available to help individuals enhance their financial literacy. Educational institutions, government agencies, and non-profit organizations often offer programs to promote financial education.

Need for the Study

Complicated financial products, lack of financial knowledge and low level of financial awareness makes the want of financial literacy noteworthy. The level of financial literacy differs from individual to individual. Gender gap plays an very important role is deciding the financial literacy level. A woman's decision or relationship with money is often determined by her personal life experiences. Emotions, money and family are interlinked in the life of a woman. Lack of equipped access of consistent information to make informed financial decision leads to low level of confidence and knowledge about financial issues. Life changes like new employment, marriage, divorce or separation, demise of the

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partner are few of the stressful stimulators in an individual's life. Research has consistently shown that there has been a correlation between financial literacy and age, although the relationship can be influenced by various factors. In many cases, financial literacy tends to improve with age. As individuals gain more life experience and encounter various financial situations, they often acquire more knowledge about managing money. Older individuals may have had more opportunities to learn about budgeting, investing, and financial planning over time. Life stages, such as marriage, starting a family, buying a home, or planning for retirement, can significantly impact an individual's financial literacy. As people progress through different life stages, they may acquire financial knowledge related to those stages.

The relationship between age and financial literacy can be influenced by education and income levels. Higher levels of income and education are often associated with better financial literacy. While older individuals may have more life experiences, the impact of income and education on financial literacy can sometimes outweigh the effects of age. Younger generations, particularly Millennials and Generation Z, may be more comfortable with technology and have access to a wide range of online resources for learning about personal finances. This contributes to a high level of financial literacy among younger individuals compared to previous generations at the same age.

Objectives of the Study

Determine the financial knowledge level among people.

- To understand the challenges and goals people have with financial matters.
- To find out the relationship between financial literacy and various demographic factors like age, gender, education, marital status, income.
- To find out ways to increase financial literacy among people

Review of Literature

Increased variety of financial products and the instability in the global economy in twenty first century caused increased complexity of financial decisions and also caused consumers to face the challenges in financial and economic activities. For this reason, in the last decade, the significance of financial management skills in work and personal life has increased and researches in this area has been done. Financial Development is recognised as an very important determinant of economic growth, with a large literature examining the determinants of the supply of banking and financial intermediation services. Yet the determinants of the demand for financial services are less understood, particularly in emerging market countries.

Some of the reviews of the existing studies are listed below.

Danes and Hira (1987) together surveyed 323 college students from Iowa State University using a questionnaire of 51 items to measure their knowledge of credit cards, insurance, personal loans, record keeping, and overall financial management. Their findings indicate that males know more than females in most areas, married students know more than unmarried students, and upper class man know more than lower class man. Their overall finding was that college students from Iowa State University have low financial knowledge.

Volpe, Chen, & Pavlicko (1996) together surveyed 454 undergraduate business students from only one university using an instrument of 23 items that focused primarily on investment knowledge. Findings show a significant low average literacy score of 44%. Those who had major in business being more knowledgeable on investments than those who did not had major in business.

Markovich and DeVaney (1997) together surveyed 236 randomly selected undergraduate seniors from Purdue University to measure financial knowledge and behaviour using an instrument with 34 items. Their study included financial behavior, they only measured the level of student's knowledge and behaviour, with no measure to examine whether knowledge correlated or impacted with behaviour.

Worthington (2006) used regression models to predict financial literacy of Australian adults. Results of the study suggests that financial literacy is found to be highest for persons with age between 50 and 60 years, business and farm owners and professionals. Financial literacy is lowest for females, unemployed and those from non-English speaking background.

Al-Tamimi and Kalli (2009) together assessed the financial literacy of the UAE investors. The results indicate that the financial literacy of UAE investors is far from the needed level. The financial literacy is found to be effected by education level, income level and workplace activity.

Almenberg and Soderbergh (2011) examined the relationship between financial literacy and retirement planning of Swedish people. They found significant level of differences in financial literacy between planners and non-planners. Financial literacy levels were found lower among older people, women and those with low education or earnings.

Klapper and Panos (2011) together investigated the impact of financial literacy on the retirement saving in Russia. They found that higher literacy is related positively to retirement planning and investigating in private pension funds.

Studies by Marcolin and Abraham (2006); Schuchardt et al., (2008); Remund (2010) and Huston (2010) found that "Despite the rapid growth of interest in and funding for financial literacy and financial education programs, it remains the case that the field of financial literacy has a major obstacle to overcome: the lack of a widely disseminated measure of financial literacy, developed through rigorous psychometric analyses".

Michael (2009) argues that "A lack of financial literacy can hamper the ability of individuals to make well-informed financial decisions. For people who exhibit problems with financial decision making, financial advice has the potential to serve as a substitute for financial knowledge and capability".

Agarwalla Sobhesh Kumar, Barua Samir, Jacob Joshy, Jayanth R. Varma (2012) together conducted a study among 3000 individuals, and found that "Financial knowledge among Indians is low than the International standards. But the financial behaviour and attitude of the employees and retired seems to be on positive side. The financial knowledge among the women are marginally high than the men.

Greater access to consumption credits has influenced the financial behaviour of young employees".

Financial literacy was examined among individuals which showed that the financial literacy is low and lesser than one third of the young adult possess the basic knowledge of interest rates, inflation and risk diversification. Financial literacy was significantly related to socio demographic characteristics and family financial sophistication. Specifically, a college educated male whose parents had stocks and retirement savings was approx 45 percentage points more likely to know about risk diversification than a female with less than a high school education whose parents were not wealthy (Lusardi, Mitchell and Curto 2006).

Sages and Grable, (2009) together in their study found that "the individuals who has the lowest level of financial risk tolerance is the least competent in terms of financial matters, have the lowest subjective evaluation of net worth and are very less satisfied with their financial management skills. The level of financial risk tolerance of the individuals determines the financial behaviour".

Ansong and Gyensare (2012) conducted a study among 250 UG and PG University students of Cape Coast reveals that "the age and work experience are positively related to Financial literacy. Also, mother's education is positively correlated with respondents' financial literacy. But, level of study, work location, father's education, access to media and the source of education on money has no influence on financial literacy".

The total level of financial literacy required depends upon the financial needs and behaviour of an individual. From the above studies, it is inferred that financial literacy is highly influenced by age, region or country in which the individual resides, the financial environment which he experiences, the level of income, socio demographic factors like his family, number of dependents, mother's education, financial advice etc.

Methodology

For the purpose of the study a survey was conducted amongst residents of Delhi NCR. Respondents were selected conveniently. Primary data from the respondents was collected by using a structured questionnaire.

A total of 200 respondents constitute a sample for this study. Out of the 200 questionnaires only 189 were duly filed and were used for the study.

To measure the accurate financial literacy level, questions were asked about personal finance from the respondents. The questions asked were in order to measure respondent's knowledge in the areas of financial numeracy, savings and investments, borrowings, risk and return, insurance.

Along with which questions related to financial attitude and behavior were also asked. Total score for each respondent was calculated. The total of each single respondent was further converted into their percentage score and financial literacy index is developed. The following hypotheses are developed.

Hypothesis 1

H₁: There is an association between financial literacy level and gender.

Hypothesis 2

H₁: There is an association between financial literacy level and age.

Hypothesis 3

H₁: There is an association between financial literacy level and education.

Hypothesis 4

H₁: There is an association between financial literacy level and income.

Hypothesis 5

H₁: There is an association between financial literacy level and marital status.

The hypothesis of this study has been tested with the help of ANOVA. The hypothesis has been tested at 5% significance level.

Results and Discussions

Table 1: Demographic and Socioeconomic Details of the Respondent

S. No.	Demographic Factors	No. Of Respondents (Frequency)	Percentage	Mean	F Value	Significance
1	GENDER				55.07	0.000
	Male	113	59.8	69.8		
	Female	76	40.2	41.2		
2	AGE				1.354	0.241
	a) 20-25 yrs	47	24.9	48.9		
	b) 26-30 yrs	56	29.6	49.6		
	c) 31-35 yrs	86	45.5	45.5		
3	EDUCATION				12.87	0.002
	Schooling	21	11.1	31.1		
	Diploma/ITI	27	14.3	42.3		
	Undergraduate	63	33.3	48.3		
	Post graduate	78	41.3	61.3		
4	MARITAL STATUS				30.94	0.000
	Married	122	64.5	64.5		
	Unmarried	67	35.5	45.2		
5	MONTHLY INCOME				30.51	0.000
	Rs. 10000	52	27.5	57.5		
	Rs. 10001-20000	34	17.9	47.9		
	Rs. 20000-30000	49	25.9	52.9		
	>Rs. 30000	54	28.7	63.7		

The above table depicts the demographic profile of the respondents. Nearly 60% of the respondents are male. Majority if the respondents fall under the age group of 31-35 yrs. 41% of the respondents have completed their post-graduation. Majority of them are married and few unmarried. Most of the respondents have 0 to 1 dependent and the respondents who earn Rs.10001 to Rs.20000 are relatively low when compared to other categories. The above profile shows that majority has completed at least their under graduation and are married.

Association between Gender and Financial Literacy Level

Based on gender, it is clear that male employees working are more financial literate as compared to female employees. The mean score of male employees working is 69.80% as compared to mean score of female employees working (41.2%). From the table it can be seen that F value is significant- at 5% significance level, hence H₀ of hypothesis 1-There is no association between Gender and financial literacy level is rejected. Thus, it can be concluded that the level of financial literacy differs between male and female respondents.

Association between Age and Financial Literacy Level

Above table shows the mean score of financial literacy level for different age groups. There is no great difference in the level of financial literacy among the different age groups. From the table, it can be seen that F value is not significant at 5% significance level, hence H1 of hypothesis 2-There is an association between age and financial literacy level is rejected. So, it can be concluded that financial literacy level does not depend on age.

Association between Education and Financial Literacy Level

Above table shows that financial literacy level is correlated with the level of education. More the education level more is the level of financial literacy. Table shows that financial literacy level is highest for respondents who have PG degree (61.4%) followed by those respondents who have under graduate degree (48.3%). From the table it can be seen that F value is significant- at 5% significance level. Hence H0 of hypothesis 3-There is no association between education level and financial literacy level is rejected. Thus, it can be concluded that financial literacy level depends on the education level.

Association between Income and Financial Literacy Level

The results from the Table indicates that more the income, more will the level of financial literacy. Table reflects that financial literacy level is highest for respondents having income level above 30,000 (63.7%) per month followed by those who earn between Rs. 20-30 thousand (52.9.06%) per month. From the table it can be seen that F value is significant- at 5% significance level. Hence H0 of hypothesis 4 - There is no association between income and financial literacy level is rejected. Thus, it can be concluded that financial literacy level depends on the income of a person.

Association between Marital Status and Financial Literacy Level

According to the basis of marital status we have divided the respondents into four categories i.e. married, unmarried, separated and widow. But we have respondent from married and unmarried category. Table shows that married employees have more financial literacy level as compared to unmarried employees. From the table it can be seen that F value is significant- at 5% significance level. Hence

H0 of hypothesis 5-There is no association between marital status and financial literacy level is rejected. Thus it can be said that nature of marital status influences financial literacy level of the respondents.

Conclusion

From the analysis done it can be concluded that overall financial literacy level of 50.90% among respondents is not very encouraging. This shows that in our city people are still not much aware about their finance related issues. Earlier studies have shown that the savings habit among people is not so high. Likewise the whole burden of planning their future in terms of finance is on the young individuals, as employee benefits are reduced. Early purchased through credit cards have changed the financial behaviour of the current generation. All of this has a significant impact on their financial position. Need for proper financial literacy and information regarding financial matters becomes inevitable.

The results of the study suggests that level of financial literacy varies significantly among respondents based on various demographic and socio-economic factors. It can be concluded that financial literacy level gets affected by gender, education, income, marital status and number of dependent whereas it does not get affected by age. Overall it can be concluded that financial literacy level is low among people of Delhi NCR and necessary measures like financial awareness campaigns, personal finance subject at school and college level etc should be taken by government to increase awareness about financial related matters.

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STATE DYNAMICS AND FINANCIAL INCLUSION: A PANEL DATA ANALYSIS

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ABSTRACT

Institutions of finance play a crucial role in the modern economy, allowing for growth and development. That's why; especially in developing nations like India, it's crucial that everyone has easy entry to the banking system and the services it provides. While the Indian banking sector has expanded significantly in recent years, many Indians still lack even basic access to banking products and services. As a result, financial inclusion becomes an imperative because it helps both banks and the underserved people by expanding access to banking and other financial services. To examine the factors that have an impact on financial inclusion in India, we examined panel data that included states across the country over a five-year period (2009-2013). This research confirmed previous findings that individual Indian states have a unique "state-effect." More importantly, the outstanding credit as a proxy for loans and advancements and the number of factories as a proxy for industrialization both reveal that income and employment generating schemes must be launched by the Government of India and the Central Bank of India while keeping in mind the underprivileged lot.

KEYWORDS: *Financial Inclusion, Banking System, Developing Nations.*

Introduction

Lack of financial inclusion has varying causes but similar effects. Leyshon and Thrift, for example, described how a lack of financial inclusion manifests itself in the context of the policies and procedures that prevent certain people and communities from having access to conventional banking. Similarly, Sinclair outlined the repercussions of a lack of financial inclusion in terms of the fallout from a host of issues with access, pricing, conditions, etc., in the realm of financial services as a direct result of negative practises or perception. Dr. C. Rangarajan, chairman of India's "Committee of Financial Inclusion," has a positive take on the concept, defining it as "the process of ensuring access to financial services to timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost" (Rangarajan Committee, 2008)

To a financial institution, financial inclusion means expanding its services to more people. The field of these undertakings varies across various countries some being quite large in extent. In the United Kingdom, for instance, the main factors include easy bank access, low-cost credit, and personalised financial guidance. In developing countries like India, priority sectors like the agricultural and economic backward classes of society should ideally be considered for these formal financial services in addition to these primary factors.

It's important that the financially disadvantaged have easier access to credit so they can improve their economic standing and quality of life. However, the effects of financial exclusion are

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magnified because poverty is increasingly concentrated in India's poorer states. In this scenario, banks play a crucial role as savings mobilizers, investment resource allocators, and production funds allocators. Credit is extended to business owners so they can launch innovative ventures, which could stimulate economic development. In addition, retail commercial banks offer remittance services and other payment-related products. For this reason, banks have great potential for social good in terms of redistribution of wealth because they can act as agents of change.

Despite inclusive banking initiatives in the country through actions like nationalising of banks, by creating legal rural banks, cooperative movement, etc., it is disheartening to note that only a small fraction of the population has access to the banking sector's proposed products and services. Out of India's 600,000 inhabited locations, only 30,000 have access to commercial banking services, as noted by Subhbarao's research. Two-thirds of the population lives in rural areas, which is severely underserved by the availability of financial services and products.

The banking business in India has expanded greatly in recent decades, both in terms of size and sophistication. Notwithstanding advancements in the financial industry, the underprivileged segments of society continue to be cut off from these new opportunities. This shouldn't be the case, as several aspects of financial viability and competitiveness have been greatly strengthened in recent years. Population per branch dropped from 14000 in 1991 to 13,503 in 2011 and to a low of 12,921 in 2013, indicating that the banking industry is struggling to keep up with the increasing number of unbanked Indians. Even though 55% of the population has access to a deposit account, India has the biggest demand for microfinance in the world. About 100 million 'no-frill' accounts, or accounts with zero or minimal balance and small overdraft facilities, have been made available to the poor thanks to efforts made by the Government and the RBI. Unfortunately, between 80% and 90% of them remain dormant because they are neither used by their owners nor pursued by financial institutions. Several people have called this type of economic expansion "jobless growth" because so much of the extra labour is used in subpar agricultural production. Although the Indian government deserves praise for its efforts, other developed and emerging economies are further along the path to financial inclusion than India is at the present time.

Financial Inclusion in India

In their study, the folks at CRISIL Inclusix, an index that tracks the expansion of financial services to the unbanked, combined three crucial factors that must be in place before basic banking can be made accessible to all. They are all rolled into one metric and include things like bank penetration, deposit penetration, and credit penetration. In total, India received a score of 40.1 out of 100, which is quite low and demonstrates quite clearly the underdevelopment for providing banking services across all of the states in India. Deposit penetration is the primary driver for achieving financial inclusion in India, the study found. When compared to deposit accounts, there is an extremely low number of loan accounts. But when measured against results from previous years, this performance is markedly better. Higher credit penetration, along with rising bank penetration, is responsible for this progress. The eastern United States is the least financially included, while the southern United States has the highest credit penetration. A possible explanation is that the literacy rate in the south is higher than in the east and the north-east. India's economy is growing at a phenomenal rate, passing Japan's in 2011. It is now the third largest in the world, behind only the United States and China, when measured in PPP terms. 1 More work is needed to close the gender gap, technological divide, and geographical gaps in rural areas. Nearly half of India's GDP comes from the 90% of the workforce that lives on the verge of poverty. Agriculture contributes about 15% to GDP, but access to credit is decreasing, leaving about half the population without access to funds for essentials [28]. There is a significant gender gap in access to agricultural credit, and feminization of agriculture and the use of women in agricultural labour is on the rise. The percentage of small farmers with bank accounts has been on the decline over the past two decades, and there appears to be no correlation between the use of no frills accounts and the subsequent programmes launched to address this problem.

To close the widening socioeconomic gaps typical of countries with persistent financial exclusion, financial inclusion is not only a necessary but also limitless social and business opportunity. The purpose of this paper is to examine the factors that affect financial inclusion in India on a state-by-state level. The goal is to determine whether or not a statewide impact exists in relation to the determinants of financial inclusion and, if so, to make policy recommendations in light of those results. Following the introduction are the paper's methods, findings, conclusions, and suggestions.

Data Description and Methodology

• Data Description and key Variables

Five years of data, from 2009 to 2013, are included in the study, broken down by state in a balanced panel design. The study includes annual data for a total of 30 locations, including all 26 Indian states and 4 union territories. Arunachal Pradesh, Mizoram, Telangana, Dadra and Nagar Haveli, Daman and Diu, and Lakshadweep, along with the rest of India, were left out since they lacked the necessary statistics. As a result, there is only one dependent variable and eight independent variables in this study, with a total sample size of 1503. All of the numbers above are from the Central Bank of India's online collection of the Basic Statistical Returns of Scheduled Commercial Banks in India. This equation summarises the empirical model commonly used to identify the variables that contribute to or detract from financial inclusion:

$$\ln FID_{it} = \alpha + \beta_1 \ln BC_{it} + \beta_2 \ln MAC_{it} + \beta_3 \ln FAC_{it} + \beta_4 \ln OC_{it} + \beta_5 \ln CDR_{it} + \beta_6 \ln NSDP_{it} + \beta_7 \ln GR_{it} + \beta_8 \ln NOF_{it} + \epsilon_{it}$$

Where,

FID = number of deposits as a proxy for financial inclusion BC = number of bank branches

MAC = number of male accounts FAC = number of female accounts OC = outstanding credit

CDR = credit-deposit ratio

NSDP = per capita net state domestic product GR= growth rate

NOF = number of factories

As a measure of financial inclusion (FID), the total number of savings, checking, and term deposit accounts in each state is used. The idea here is that if more people have bank accounts, more people will have access to the financial system. Since the amount distribution may be highly sensitive to outliers, the rate of inclusion per account is prioritised over the amount as a measure of depth. To the same end, Sarma [8] looked at the number of bank accounts open compared to the population as a proxy for the extent to which the banking system had been adopted. Kumar used a comparable metric in his research, which aimed to determine what factors in India contribute to the widespread availability of financial services.

The Reserve Bank of India (RBI) has taken a number of steps in recent years to increase the number of bank branches and make banking more convenient for the general public. This has necessitated extensive branch expansion by Indian banks across the country. Several researchers have used the total number of banking centres (BCs) or bank branches in each state as an independent variable. Access to and density of bank branches was also used as a determinant of financial inclusion in studies by the World Bank and Burgees and Pande. If the relationship between BC and FID is as anticipated, then FID should be positively correlated with BC.

To examine the effect of gender on financial inclusion, we have factored in the proportion of male and female account holders. Adewale, Mustafa, and Salami contend that in their research on Ilorin, Nigeria, they found no evidence of a moderating effect of gender on financial exclusion. They argue that if financial inclusion strategies like micro-lending were aimed specifically at women, it would have the opposite effect and increase the number of men who are financially excluded. However, a World Bank report found that countries and societies that practise gender discrimination also suffer from deeper poverty, a slower economy, and weaker governance. While it is encouraging that microfinance initiatives in India are working towards the goal of ensuring women's financial independence, it is not yet clear whether or not these efforts are bearing fruit. So, it is projected that when men are used as a benchmark, there will be a positive correlation between the Male Access to Credit (MAC) and Financial Inclusion (FID) indices.

The total quantity of credit extended by the nation's scheduled commercial banks is another exogenous factor. This is because a greater amount of outstanding credit in the banking system will lead to a greater number of people having access to formal financial services. We anticipate that this variable will have a positive effect on our dependent variable since an increase in the number of loans indicates an increase in people's access to finance, which in turn indicates an increase in the number of people who are part of the financially included circle. Credit-deposit ratio, a metric for the proportion of loan assets created by banks from deposits received, is also mentioned as a possible factor of financial inclusion in India. Higher credit deposit ratios are indicative of more active banking and investing sectors.

We have added the per capita net state domestic product to evaluate the effect of the states' economic and monetary position on the banking penetration system and the overall financial inclusion. Nitin Kumar [9], in his evaluation of the factors that influence the spread of banking services in India, comes at a similar conclusion. The growth rate of the states is calculated in the same way, by the total volume of goods and services generated inside the state during a given time period.

Similar to the previously discussed rationale, we estimate that a higher growth rate in the states should result in a larger probability of people being financially included. According to the research done before, industrialization is crucial in order to achieve financial inclusion. Hence, the Annual Survey of Industries (ASI) data on the number of factories in each state is included as a surrogate for industrialization. Since that employment data at the state level in India is unavailable due to the fact that the census in India is only released once every 10 years, this proxy is used as annual statistics. Similarly, those who are better off financially are more likely to participate in the economy as a whole. Hence, we have used the number of factories as a surrogate for industrialization in order to anticipate the degree of employment, especially among the lower and middle classes.

Tools of Statistical Analysis

Panel data encompasses the cross-sectional and time series dimensions because it can be used to learn about an individual's behaviour in the context of other individuals and over time. Or, N people were watched over a period of T days. 4 Due to data availability and the relative ease of statistical operations and assumptions, this study employs a balanced panel data, where the number of observations for every variable and for every individual is the same ($T_i = T$ for all i)

Asteriou and Hall argue that the pooling assumption, which assumes that all individual relationships have the same parameters, is the most crucial assumption of the panel data analysis. To ensure that all individuals in a dataset are treated consistently, a standard set of parameters is applied to all of the data. There are advantages and disadvantages to making the pooling assumption. Panel data eliminates the problem of missing-variable bias that affects single-person regressions. It is expected that the panel estimator will reveal a representative average estimate of the individual parameters, even if the pooling assumption is not true in the heterogeneous panel. Unfortunately, the panel methods are not very effective in this situation, yielding highly skewed outcomes. Moreover, when estimating samples, it is difficult to obtain significant t-ratios and F-statistics due to a lack of data. This is a common issue with time series estimations, and one solution is to combine the data into a panel of time series from various cross-sectional units. Dummy variables allow for the generation of differences in a number of cross-sectional and time-series observations at once. These dummies are typically used in what is known as a fixed effect model to capture systematic differences based on panel assumptions, while another option is known as a random effect model. The natural log of the aforementioned variables was calculated and subsequently used in analysis to facilitate straightforward comparative evaluation of the results obtained.

Findings and Discussion

Findings

During the course of 5 years, we examine the many factors that can affect the total quantity of deposits. Equation (1) lays out the foundation of an empirical model for identifying the factors that contribute to or detract from financial inclusion. Table 1 provides descriptive statistics for the data samples.

Table 1: Descriptive Statistics

Variable	Lfid	Lbc	lmac	lfac	Loc	lcdr	lnsdp	Lgr	lnof
Mean	7.508	6.179	7.983	7.009	11.789	4.017	10.583	2.010	7.541
Std. Dev	2.892	1.721	2.529	2.348	2.395	0.437	0.538	0.487	1.958
Variance	8.361	2.962	6.398	5.513	5.734	0.191	0.289	0.237	3.836
Skewness	-0.370	-0.672	-0.823	-0.504	-0.264	0.122	-0.018	-0.134	-0.675
Kurtosis	2.203	2.134	2.991	2.205	2.473	1.944	2.564	7.879	2.648
Obs	150	150	150	150	150	150	150	148	150
Sum of wgt	150	150	150	150	150	150	1501	150	150

Standard deviation for $lcdr$ is 0.4371, which indicates a small dispersion around the mean, while standard deviation for $lmac$ is 2.5294, which is significantly bigger. Dispersion from the mean is also quantified by the variance. Other than lgr (growth rate), all of the variables in this collection have a platykurtic distribution. In addition, with the exception of $lcdr$, all of the variables are negatively skewed and close to the value 0.

Panel Data Analysis

For exploratory data analysis, log transformation is a necessary metric due to the fact that operating data spans multiple orders of magnitude. We then declare the panel structure of our data after transforming the variables into logs. We can now run the initial OLS regression because our data is evenly distributed. Therefore, more evaluation is needed to determine if Generalized Least Squares is necessary or if simple OLS will do.

After obtaining the OLS model estimates, we use the Breusch and Pagan test to compare the OLS and random effect models. The measured quality is higher than the predicted chi square value. We therefore expect the discretionary effect to be more appropriate than the pooled OLS model, and hence the GLS technique is crucial.

Table 2: Breush and Pagan Langrarian multiplier test

chi2(1)	73.62
Prob > chi2	0.0000

We conclude that the random effects are more appropriate than the pooled OLS model because the calculated value is greater than the tabulated chi-squared value. And it shows that our data contains effects that vary by state. The random effect estimator provides a consistent and efficient estimator if the state-specific effects are uncorrelated with the regressors.

The fixed effects model, which allows for each state to have its own intercept value, is used to test for data heterogeneity and/or state-level uniqueness. Once again, outstanding credit and factory count are shown to be significant and to have positive effects on the proxy of financial inclusion. However, the Hausman test is used to determine if the fixed effects model is the right model to use or if the random effects model should be maintained.

If $H_0 = \text{Cov}(1, x_{it})$, then x_{it} is undefined (Random Effect)

If $(1, x_{it}) > 0$, then the H_A :Cov is negative (Fixed Effect)

We reject the null hypothesis that says the random effects model is appropriate and accept the alternative hypothesis that the fixed effects model is the most appropriate method for our study because the Hausman statistic is too large (73.63) and the p-value is too small.

The Hausman test indicates that the fixed effect model is the best fit for our data, so we check to see if time effects are necessary for the fixed effect model to function. Since the coefficients for each year are significantly different from zero when taken together, we conclude that there must be a time fixed effect. In the fixed effect model, we also look for state-specific effects. The findings are identical to those of the time fixed effect model. The results indicate that the common intercept hypothesis cannot be accepted for the sample of Indian states used in this analysis.

For practical and financial reasons, we should select the fixed effect model. It is reasonable to assume that differences in India's outstanding credit, number of factories, bank branches, etc. are at least in part attributable to state-specific impacts reflecting initial technology and resource endowments, economic conditions, environment, institutions, culture, and so on.

Table 3: Results of Panel data analysis

	Pooled OLS	Random effect	Fixed effect
Constant	1.34 (0.56)	0.98 (0.69)	-24.84 (-5.02)
ln BC	0.13 (2.03)**	0.2962247 (2.11)**	-0.6536805 (-1.08)
ln MAC	.0188568 (0.20)	0.0093032 (0.11)	-0.0571081 (-1.20)
ln FAC	.0129119 (0.13)	-0.0037972 (-0.04)	-0.0478373 (-0.99)
ln OC	1.561162 (23.75)***	1.643023 (27.25)***	1.647579 (36.41)***
ln CDR	-1.521083 (-6.55)***	1.574927 (-6.48)***	-0.426399 (-1.24)
ln NSDP	-.3065726 (-1.50)	-0.2876561 (-1.32)	0.9064265 (1.62)
ln GR	.0841062 (0.59)	0.0550815 (0.41)	-0.0449515 (-0.58)
ln NOF	-.6567829 (-5.28)***	-0.7251883 (-5.57)***	1.315544 (3.74)***
Breusch-Pagan LM Test	73.63 (0.0000)		
Hausman Test			59.67 (0.0000)
Observations	148	148	148
Heteroscedasticity (χ^2 - stat)			1603.43 (0.0000)
Multicollinearity (vif)			7.81
Serial Correlation (F-stat)			67.816 (0.0000)

Figures in the parenthesis are t-statistics, except for Breusch-Pagan LM test, Hausman test, Heteroscedasticity and Serial Correlation, which are p-values. *** sig. at 0.01, **sig at 0.05.

The table above summarises the outcomes of our panel data estimations for all indicators using the three approaches (OLS technique, random effects, and fixed effects).

Despite the fact that the gender lens does not provide the expected outcomes, the raw data makes it abundantly evident that the proportion of female to male accounts is vastly different. The Central Government or NABARD's microfinance initiatives may help women much in this situation, as they promote economic parity and work to reduce poverty. Efforts to improve women's financial literacy could pave the way for more women to achieve economic autonomy and join the ranks of the economically active. Swamy's research into the effects of a borrower's gender on their ability to secure credit indicated that financial inclusion programmes had a disproportionately positive effect on the economic well-being of rural women.

All three models suggest that access to outstanding credit contributes to greater financial inclusion. T-statistics obtained greater than 20 indicate statistical significance across all models. Hence, the greater the total amount of credit available, the greater the level of economic participation. However, this comes with some drawbacks, as the interest rates on such loans often trap rural residents in an endless cycle of debt. Since suicide rates among Indian farmers are incredibly high, and since half of all agricultural households carry debt, it is imperative that interest rates on such credit be reduced to a level that is manageable for these individuals.

The ratio of credit to deposits can also be used as a predictor of increased banking and investment activities. With a larger percentage, greater economic participation is anticipated. The credit-deposit ratio is not a significant variable, however, in the fixed effect model. However, it has a positive effect on the proxy of financial inclusion in the other two models. Therefore, taking into account the Indian states, we might agree with Beck et al. that this ratio is significant in terms of progressive banking penetration.

It is also observed that the number of factories per capita, which may be used as a stand-in for industrialization or the number of workers, is a crucial factor in determining which Indian states are the most financially inclusive. Devlin argues that those with higher socioeconomic position should not face economic discrimination. Based on this reasoning, we predict that the more manufacturing facilities there are in certain Indian states, the greater the proportion of the population that benefits from financial inclusion.

Discussion

Because of the country's great diversity, India's individual states have distinct educational systems, labour markets, economic environments, cultural practises, and linguistic varieties. A state like Kerala, which has a literacy rate of over 90%, may not have the same results as a state like Bihar, which has a relatively low literacy rate. According to our findings, states like Kerala have greater economic participation than states like Bihar. This finding helps to explain why the study was not carried out on a national scale, but rather took into account the diversity of India's individual states and their varying demographic and economic profiles.

The Indian economy is expanding at a rapid rate, and the country hopes to one day become an economic superpower. In this case, inclusive growth is essential, and so is fair distribution of the wealth produced by the population as a whole. Therefore, it is crucial that everyone in the country has access to adequate financial services in order to reduce the wealth gap and ensure that everyone makes a positive contribution to the country's development and prosperity.

Therefore, our research is consistent with the other major studies being conducted towards financial inclusion when it comes to outstanding credit. The availability of high-quality credit is seen as the single most important factor in determining whether or not a country is part of the financial inclusion sphere. However, it does come with a few drawbacks, the most significant of which are the high loan repayment rates that make it hard for the poor and underprivileged to get access to financial services and the high interest rate charged by money lenders that further indebted them, particularly farmers and rural people. Suicide attempts are more likely to occur in such a community if bad weather, such as a drought, follows such a disaster. The best way to combat this problem is for governments to implement reasonable interest rates, and for groups like NABARD5 to develop cutting-edge new initiatives to help those in need. Credit counselling for those in this position can be very helpful in terms of loan repayment. India is still far behind the rest of the pack in this area, and more effort is needed to combat social exclusion.

Financial inclusion is strongly correlated with a number of other socioeconomic factors. These include income, literacy, inequality, physical access, and technology. Due to unavailability of sufficient data however, literacy could be included in our study though we strictly believe that literacy rate has a direct relationship with financial inclusion. Schemes and initiatives to educate the masses about financial literacy has proved quite favourable in the situation to handle exclusion. As for income and employment we have used the number of factories as the proxy for industrialization. Assuming that most of the lower middle class is associated directly or indirectly with factories therefore higher the number of factories, higher will be the employment ratio among such class and more will be the financial inclusion. This in fact is beneficial to the general economy of the country as a whole too. Therefore, schemes that generate employment have various benefits as it does not only help in eradicating poverty but also improves the income level and improvement towards the overall financial inclusion.

Conclusion

This research offers an empirical examination of the variables that affect financial inclusion across the Indian states. It covers the years 2009 through 2013 and contains annual data for roughly 26 of India's states and 4 union territories. Our findings point to the existence of state-specific effects in our dataset. As might be anticipated, the various states of India vary greatly from one another in terms of fundamentals such as literacy rates, per capita income, the availability of certain occupations, cultural

norms, and even the languages spoken. These effects are only seen in certain states, which is why we see them in our data. In addition, the number of factories and the total amount of outstanding credit both have a positive effect on financial inclusion. This suggests that expanding access to credit for the unbanked would help more people join the financial mainstream. In a similar vein, a rise in the number of factories and the rate of industrialization will help more people become financially included because the unemployed will have a greater chance of finding work and, with a steady income, more people will be able to take advantage of the financial services on offer.

The Reserve Bank of India (RBI) and the Government of India have taken important steps towards financial inclusion, and these have borne fruit. Studies show that more than 70% of the adult population in emerging markets is unable to benefit from banking services, despite the fact that the problem of exclusion is faced worldwide and numerous models are being proposed by various countries to tackle it. Since India is a developing country with great potential for microfinance, much more work needs to be done in this area.

India has made great strides in recent years towards solving the problem of financial exclusion by using a multifaceted strategy. However, state-wise initiatives must be taken in addition to overall initiatives taken by the Central government to curb the problem of financial exclusion in India, which is only one of many states.

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A HYBRID APPROACH OF REFINED CONVOLUTION NEURAL NETWORK AND ADAPTIVE CLUSTERING FOR IMAGE SPLICING AND COPY MOVE FORGERY DETECTION

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ABSTRACT

Mankind is not new to forgeries but it is a very old problem. In the past, it was limited to art and literature, but it did not affect the public. Digital images are widely used in all aspects of our lives in important activities such as media, forensics, forensic services, online commerce and medical diagnosis. Above information, images or documents. They can also be used as evidence in court and in the press to adjust the meaning of the image in order to influence the reader's opinion. Today, thanks to the developments in digital image processing software and editing tools, images can be easily edited and changed. It is difficult for people to understand whether an image is an original image or a modified image. Digitally fake images are proliferating in mainstream media and online. This model introduces a major limitation and reduces the reliability of digital images. Therefore, it is important to develop a process to verify the authenticity and authenticity of digital images, especially images used as evidence in court, as part of document newsletters, medical records, or financial records. In this sense, detection of fake images is one of the main goals of image forensics. As machine learning is increasingly used to create fake photos and videos, also known as deepfakes, the same technology can be used to detect and report fake photos. In this article, we will focus on image compositing and printing movement in fake images.

KEYWORDS: Image Forgery, Image Splicing, CNN, Copy Move, Adaptive Clustering.

Introduction

Digital images play an important role in transferring information and are widely used in many areas of daily life. However, with the development of modern technology, various software has also been developed. This leads to the deception of digital images. Image manipulation refers to the use of digital images. Many researchers have offered different solutions for detecting fake images. Images can convey more than text content. We believe almost everything we see. The ease with which the source and content of digital visual information can be simulated has always been questioned and its reliability questioned. The proliferation of social media has affected how audiences view news and information. As image processing has a major impact on the medical, forensic, media and financial industries, the need for fraud detection has emerged. Fraud detection is designed to identify non-uniform patterns that should be present in the image. Allows comparison of different image forgery detection technologies. It also provides an overview of the different data used in different search methods. Although there are many

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tricks and tools that are easy to use and take the complexity out of editing and managing images, this article will focus on the two most popular types of tricks, print driver and image compositing. Copying and pasting a part or part of the image within the same image to create a new image is called copy-move forgery. In image stitching forgery, two or more images are combined to create a single spliced or composite image. We now present the most common forgeries and manipulations found in context. The application just discussed. Copy-Move Forgery Copy-Move is performed by copying one or more regions. Copy the image and paste it to another location in the same image. copy move counterfeit It is generally used to hide information or to clone and seriously alter objects/people. Semantic content of the target image. adhesion. This forgery is similar to copy-move, but the pasting part is different. Areas/objects are cropped from one or more other images. Joining fakes can be done as follows: To hide some content or show a fake situation

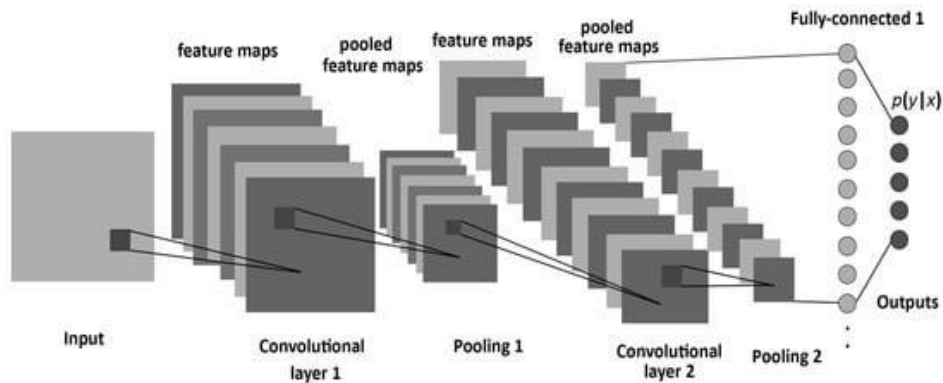


Fig. 1: Architecture of CNN

Convolution Neural Network

Convolutional neural network Convolution Neural Networks (CNNs) are widely used in the following fields: I have been using it recently. I found it to be particularly well suited for computers. Vision tasks such as object detection and semantic segmentation Image classification. CNN has two basic ideas: Architecture that makes computer applications successful visual work. First, the CNN architecture uses: There is usually a strong correlation between pixels in surrounding areas. Unlike most neural networks, CNNs use clustering. Local connection rather than direct connection Every pixel. Second, because it is based on CNN design Each channel (or output feature map) when sharing features rice. 1. CNN architecture It is performed using the same convolution operation. Filter anywhere. CNN architecture design idea Used to detect connection tampering. CNN maybe It is used to determine if an image has been manipulated or manipulated. Use random splices. CNN inspired by humans The visual system is designed to be non-linearly interconnected. Neuron. The proposed CNN architecture design can be used. Detects different types of fraud. CNN can follow the link Check if the photo has been doctored or manipulated. CNN The design is inspired by the human visual system. Non-linearly interconnected neurons. they demonstrated It has amazing capabilities in many computer vision applications. Includes image classification and object detection. they can It is useful for a variety of purposes, including screening. It has already proven its outstanding potential in various fields. Computer vision applications including image segmentation and object detection. It can be useful for a variety of purposes. For additional purposes, including forensic imaging [20]

- **C2RNet:** C2RNet consists of coarse convolutions. Neural Network (C-CNN) and Improved CNN (R-CNN) Extract differences in unaffected image properties. Pseudo-regions in image patches with different scales. Image-level CNNs are introduced to replace patches. Reduce computational complexity with C2RNet's CNN layer. The proposed method studies the different differences. Image properties that ensure stable detection performance. Detect areas suspected of spoofing using C2RNet. Finally, the detected spoofing regions are generated using the proposed method. An adaptive approach to clustering. The experimental results are The proposed method provides promising results compared to existing methods.

Modern ways to detect splice fraud Various attack conditions Specific methodology used to calculate results The proposed connection tampering detection method is not mentioned. From the

source provided. This document does not provide details about: Using evaluation metrics or specific data sets Experiment. However, the proposed method is noteworthy. We obtain relatively promising results compared to state-of-the-art techniques. There are different methods for detecting counterfeit art splices. Attack conditions. To reduce computational complexity, Instead of patch-level CNN, image-level CNN is introduced. Traditionally used in C2RNet. This innovative fix the approach shifts the focus of computation to be individual-centric. Significantly reduced by patching the entire image rice. 2. Model accuracy Improve model power by reducing computation time. Identify potentially manipulated areas. Increased efficiency and speed.

Adaptive Clustering

Adaptive Clustering Adaptive clustering is a data analysis technique that provides: Flexibility and sensitivity to local variations due to tuning Clustering process that takes into account the characteristics of the data set. Unlike existing clustering methods, Parameters of the adaptive clustering algorithm change dynamically. Requirements based on density and dispersion data. DBSCAN (Density-Based Spatial Clustering). Noisy applications are well-known examples of: Combine clusters by taking into account the density of surrounding data. points. Due to its flexibility, the algorithm can identify: Due to clusters of various sizes and shapes, especially This is useful in situations where clusters display atypical patterns. Applications for adaptive clustering can be found in many places. Areas including forensic imaging. Commonly used adaptive clustering approaches Combined with feature extraction methods such as convolutional Neural networks (CNNs) help remove image anomalies. Breach detection provides valuable information Used for tasks such as content analysis and counterfeit detection. these the adaptive nature of the algorithm allows us to overcome these problems. Extremely valuable data set due to its complexity and variety Resources for identifying patterns and structures in the real world data

Experimentation

Using ForensicNet model and CASIA dataset the most popular and trusted dataset in image analysis. So we're going to create a confusion matrix that tells us: Accuracy of our experiments. The data set consists of aggregates. Parameters: 15,179,330, Trainable Parameters: 15,147,842, and Untrained parameters: 31,488. Tables are made up of layers. (type), output format, parameter number and connection A property that allows for distinction. We evaluate the proposed detection and its effectiveness. Different circuits involved, divided randomly for each data set. Divided into six equally sized groups, each group consists of one group. One-sixth of non-repeating authentic and counterfeit images are randomly generated Taken from the dataset. And the basis of this play is Average of six independent experiments. In all experiments One group of images, real and fake, was selected for work. The remaining 5 groups are tested and used for SVM training. Classifier.

Table 1: Datasets details used in the Experiments.

Type	Dataset	Tampering Type	#Authentic/ #Tampered Images	Image Size	Mask
IMAGE	RFF [34]	Generated using StyleGAN	70k/70k	256x256	No
	CASIA [31]	Copy-Move	7491/5123	240x160	No
		Copy-Paste		900x600	
	COVERAGE [32]	Copy-Move	100/100	Multiple	Yes
	DRESDEN [14]	Copy-Move	14000/0	1024x1024	No
	MANIP [33]	Copy-Move	48/48	3020x2300	Yes
IMD [15]	Copy-Move	0/2010	3000x2300	Yes	

For CASIA v1.0 and CASIA v2.0 databases Image patches of size 128x128 from training group to training CNN-based descriptor. To prepare the fake patch: We have several image samples (fake images and their Source) Every time I remove this from the image label We reduce the noise in the resulting difference image and reveal it. Borderline forgery. The result is positive learning Patches are randomly sampled along monotonic boundaries. From the doctored image, you get a negative image. Coincidentally from a real image. And 5/6 extracted patches CNN descriptors are randomly selected to train Pause is used to test performance. When training together We initialize the weights using color

spots from the CASIA dataset. It is in the first convolutional layer of the CNN model. In this work, we use three popular datasets to detect image forgery. Items used: RFF, CASIA and COVERAGE. Details and other features are described below. (1) Real Faces and Fake Faces (RFF) are open source images. The fake detection dataset is available on Kaggle5. He includes: 70,000 high- quality real face images provided by FFHQ (Flickr-Faces- HQ) dataset 6 and 70,000 artificially generated fake images. We use StyleGAN. The dataset is provided in JPEG format. The resolution is 256x256 and the size is approximately 4GB. (2) CASIA version 1.0 is a collection of 1721 color images. Of these, 921 images are cut-and-pasted fake images. Available in 384x256 resolution in JPEG format. Version 2.0 7 contains 12614 color images, of which 5123 are fake. Images with both cut-paste and copy-move. this Available in several formats with resolutions 320x240, 900x600. The dataset also provides a mask of real information over fake information. region. (3) COVERAGE is a small set of copy and move modulated data. Contains 100 PhD images and matching GT masks. The dataset resolves detection ambiguities due to: Self-similarity in natural images.

Implementation Detail

This section provides a detailed overview of the proposed method. Hardware and technical details. All models are made from: Keras machine learning library and training from Adam Optimizer with adaptive learning rate from $10e-4$ to $10e$. LR collapse 10 times for every 10 steps. The model was trained for 200 epochs; The entire network was trained for 150 epochs and consisted of: Different era. All experiments were implemented at Google. Colab Pro on a single Tesla P100 GPU with a batch size of 64. The virtual workstation comes with 25 GB of RAM and 160 GB of disk space. The proposed model is estimated at the image level using references. Metrics: Precision, recall, point and precision. table number 1 We demonstrate the performance of ForensicNet on various benchmarks. Data sets and metrics. Higher values indicate better performance. Model.

Table 2: Performance of Forensicnet on Popular Image Forgery Datasets

Dataset	Precision	Recall	F1 Score	Accuracy
RFF	0.952	0.945	0.940	97.48%
CASIA	0.906	0.948	0.926	98.93%
COVER	0.814	0.807	0.805	82.19%

Table 3: Accuracy Comparison against Different Image Forgery Detection Methods. Bold Represents the Best Accuracy

Method	Base Model	Accuracy
Zhang et al.	Stacked Autoencoders	91.09%
Bi et al.	U-Net + Residual propagation and feedback process	765
Wu et al.	CNN + Two- branch Fusion module	77.49%
Chen et al.	CNN + Median Filters	85.14%
Wu et al.	CNN + Self supervised learning	83.6%
Ali et al.	CNN + Image compression	92.33%
Zhou et al.	CNN + Two stream Network	79.5%
ForensicNet	CNN + Inverted residual blocks + Downsampling	98.93%

Conclusion

In this paper, we propose a new method to detect image forgery. This subsection compares the performance of Forensic- Net against different Image forensics methods. The proposed model compares different works using metrics: It is a method based on CNN (Deep Convolutional Neural Network). The proposed CNN has several custom image designs. Hacking detection application. Instead of a random

strategy, Weights are initialized at the first level of the network. Effectively uses 30 basic high-pass filters used in spatial models (SRM) for image stereoscopic analysis. Suppresses effects and speeds up complex image content. Network convergence. In the CNN method the model serves as a local descriptor of the pretrained patches. The boundaries of the images were carefully drawn and forged separately based on labeled sample patches. Pre-trained CNN It is then used to extract dense features from the test image. And using the method of combining functions we get: Final discriminative feature for SVM classification. discursive Experiments were conducted on several publicly available datasets. This demonstrates the excellent performance of the proposed proposal. Comparison of CNN-based techniques with other state-of-the-art image forgery techniques Detection method.

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A SPATIAL-TEMPORAL APPROACH FOR GNSS ANTI-SPOOFING

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ABSTRACT

Global Navigation Satellite Systems (GNSS) are integral to various critical applications, such as navigation, timing, and synchronization. However, they are susceptible to spoofing attacks that can severely compromise their reliability and security. This research paper presents a novel Spatial-Temporal Approach for GNSS Anti-Spoofing (STAGAS) to enhance the robustness of GNSS systems against spoofing threats. STAGAS leverages both spatial and temporal characteristics of GNSS signals to detect and mitigate spoofing attacks. Through a comprehensive evaluation using real-world scenarios and simulation studies, our approach demonstrates remarkable effectiveness in detecting and mitigating various spoofing techniques. The results highlight STAGAS as a promising solution for safeguarding GNSS applications in critical domains, ensuring the integrity and security of location-based services.

KEYWORDS: GNSS, STAGAS, DOA, SSMUSIC, ULA, SNR.

Introduction

In an era defined by the ubiquity of satellite-based navigation systems, the Global Navigation Satellite System has become an integral part of our daily lives. From precise positioning in personal navigation to essential applications in transportation, agriculture, and surveying, GNSS technology has revolutionized the way we navigate and gather location-based information. However, the widespread reliance on GNSS has also made it a prime target for malicious activities, particularly in the form of spoofing attacks. These attacks can lead to potentially disastrous consequences, not only endangering lives and property but also undermining the very fabric of our interconnected, location-centric world.[1]

In this context, safeguarding the integrity and trustworthiness of GNSS signals has become an urgent necessity. Researchers and experts worldwide have engaged in the development of robust anti-spoofing techniques, aiming to protect GNSS users from malicious signals and ensure the resilience of GNSS infrastructure. One promising avenue in this endeavor is the spatial-temporal approach, which seeks to enhance the security and reliability of GNSS signals by exploiting the unique characteristics of the spatial and temporal domains.

This Scopus journal paper explores the innovative landscape of GNSS anti-spoofing techniques, focusing on the spatial-temporal approach as a powerful means to mitigate the ever-evolving threat of spoofing attacks. By integrating spatial and temporal information, this approach offers the potential to detect and counteract spoofing attacks in real-time, thereby preserving the integrity of GNSS navigation

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and positioning. This paper endeavors to make a significant contribution to the advancement of robust GNSS anti-spoofing solutions by conducting a thorough examination of existing methodologies, empirical investigations, and introducing innovative spatial-temporal techniques.[2]

As we delve into the spatial-temporal approach for GNSS anti-spoofing, we will explore the fundamental concepts, state-of-the-art methods, and the unique challenges that researchers face in this dynamic field. The insights and findings presented in this paper have the potential to shape the future of GNSS security, ensuring the continued reliability and trustworthiness of these essential satellite-based navigation systems.

The primary contributions of this study are outlined below:

- Introduction of a novel GNSS anti-spoofing technology utilizing antenna arrays, addressing the challenge of differentiating between low-power spoofing and multipath spoofing. This technology enhances signaling to mitigate multipath and spoofing effects.
- Enhancement of spatial spectrum estimation and energy estimation, offering Direction of Arrival (DOA) and energy metrics that can bolster subsequent spoof positioning efforts.
- Execution of all operations within standard frequency parameters, ensuring compatibility to prevent receiver malfunctions and tracking issues. Additionally, these operations are designed to maintain simplicity within the GNSS receiver architecture, without introducing unnecessary complexity.

Signal Model

It is important to mention that the current signal models used for antenna arrays mainly concentrate on actual signals, which can lead to deceptive reception patterns. Nevertheless, in real-life situations, GNSS receivers frequently encounter different challenges. These problems arise from spoofing of multipath signals, which are very close to real signals and therefore pose a significant challenge in detecting spoofing, especially in its initial stages. Therefore, the main purpose of this article is to distinguish between real signals, multipath signals, and spurious signals when received by the M -element antenna array. Given the absence of service signals, we posit that all spoofed signals originate from a single antenna, irrespective of whether they emanate from conventional spoofing or generator-based spoofing. Once received, the signal undergoes an initial decision process at sampling frequency f_s , resulting in a representation of $M \times 1$ signal vectors:

$$\mathbf{x}(nTs) = \mathbf{S}\mathbf{a}(nTs) + \mathbf{S}_s(nTs) + \mathbf{S}_m(nTs) + \mathbf{V}(nTs) \quad (1)$$

In the given model, the sampling interval is denoted by $T_s = 1/f_s$, and the complex additive white Gaussian noise vector is denoted by $\mathbf{V}(nTs)$. The real signal $\mathbf{S}\mathbf{a}(nTs)$ is represented as the summation of legitimate signals, where $\mathbf{a}(\theta_i)$ denotes the steering vectors and $\mathbf{S}_i(nT_s)$ represents the i th authentic satellite signal at time nT_s . Similarly, the spoofing signal $\mathbf{S}_s(nTs)$ and multipath signal $\mathbf{S}_m(nTs)$ are represented as the summation of spoofing and multipath signals, respectively. The variables N_a , N_m , and N_s denote the number of real satellite signals, multipath, and spoofing, respectively. The steering vectors of legitimate signals, multipath, and spoofing are represented by the symbols $\mathbf{a}(\theta_i)$, $\mathbf{a}(\theta_q)$, and $\mathbf{a}(\theta_s)$, respectively. Additionally, $s_i^i(n)$ represents the i th spoofing signal, $s_q^q(n)$ represents the q th multipath signal, and $s_i(n)$ represents the i th authentic satellite signal. In the event of a GNSS receiver takeover, the power ratio of spoofing signal $s_i^i(n)$ to authentic signal $s_i(n)$ typically exceeds 1, whereas the power ratio of multipath signal $s_q^q(n)$ to authentic signal $s_i(n)$ generally remains below 1.

Given the use of the ULA, the steering vector for the incident angle θ_k can be written as:

$$\mathbf{a}(\theta_k) = [1, e^{-j2\pi d \sin \theta_k / \lambda}, \dots, e^{-j2\pi d(M-1) \sin \theta_k / \lambda}]^T \quad (2)$$

In this investigation, we denote the spacing between consecutive array elements as 'd,' set to $\lambda/2$. Here, λ represents the wavelength of the GPS L1 signal, calculated as $\lambda = c/f$, where f denotes the frequency and c represents the speed of light. Our signal model includes a Uniform Linear Array (ULA) comprising sixteen omnidirectional sensors.

Proposed Scheme

The proposed anti-spoofing strategy functions through two primary phases: Direction of Arrival (DOA) estimation and spoofing detection/mitigation. In the DOA estimation phase, a preprocessing method is applied to address signal model discrepancies arising from low Signal-to-Noise Ratio (SNR) and associated factors. Utilizing a forward/backward spatial smoothing technique helps diminish

correlation among genuine signals, spoofing attempts, and multipath signals. The eigen-spatial spectrum, derived from the Preprocessed Matrix (PM), is then employed to determine DOAs. Spoofing detection and mitigation involve power calculation, spatial channel separation, monitoring time-domain cross-correlation peaks, and implementing spoofing countermeasures, all conducted on raw digital baseband signals.

- **DOA Estimation**

[3] At this stage, an improved location DOA estimation algorithm is introduced. Signal preprocessing is especially important when signal noise is low. Using real-time modeling and self-integration of GNSS signals, the difference matrix is designed to reduce noise interference. Spatially smoothed music technique (SSMUSIC) is used to improve DOA estimation accuracy by reducing the correlation between different locations. This involves splitting the Uniform Linear Array into overlapping grids and performing a denoising process for forward/backward spatial smoothing.

- **Signal Preprocessing**

To address low SNR, periodic structures, and self-coherence of GNSS signals, a covariance matrix is formulated, removing noise components. Multiple data blocks and corresponding reference data blocks are utilized to lower estimation covariance and enhance DOA estimation performance.

$$\mathbf{R}_{xx} = E\{\mathbf{x}(n)\mathbf{x}^H(n)\} = \mathbf{A}\mathbf{P}_{PRNs}\mathbf{A}^H + \sigma_v^2\mathbf{I} \quad (3)$$

- **Spatial Smooth MUSIC (SSMUSIC)**

The SSMUSIC technique divides the ULA into overlapping subarrays to enhance DOA estimation accuracy. The process involves computing denoised forward/backward spatial smoothing matrices, which serves to enhance the rank of the covariance matrix. This enhancement facilitates the identification of DOA for correlated sources. Moreover, improving the resolution of DOA estimation is achieved by augmenting the number of subarray elements.

[1]Eigen-Spatial Spectrum Construction (3.1.2) A refined eigen-spatial spectrum method is presented, utilizing a preprocessed covariance matrix to address issues arising from low signal-to-noise ratio (SNR) and associated signals. This approach circumvents the need for eigen decomposition, thereby improving computational competence. The subspace DOA estimation algorithm is modified to break the Rayleigh limit. [5]The resulting DOAs are obtained by searching peaks in the novel eigen-spatial spectrum, utilizing the derived covariance matrix and corresponding subspace.

$$\mathbf{R}_{xx}^{(G)} \approx \frac{1}{N} \mathbf{X}_N \mathbf{X}_{Nref}^H \quad (4)$$

The final equations crucial to the proposed scheme include the formulation of the covariance matrix (Equations 3 & 4), the denoised forward/backward spatial smoothing matrices (Equations 5 & 6), and the eigen-spatial spectrum (Equation 7). These equations represent key steps in the signal preprocessing, SSMUSIC technique, and eigen-spatial spectrum construction, essential for robust DOA estimation and subsequent spoofing detection.

$$\mathbf{R}_b = \frac{1}{p} \sum_{k=1}^p \mathbf{Q}_k (\mathbf{R}_{xx}^{(G)}) \cdot \mathbf{Q}_k^H = \mathbf{A}\mathbf{R}_s^b\mathbf{A}^H \quad (5)$$

$$\mathbf{R}_{fb} = \frac{1}{2} (\mathbf{R}_b + \mathbf{R}_f) = \frac{1}{2} \mathbf{A} (\mathbf{R}_s^f + \mathbf{R}_s^b) \mathbf{A}^H = \mathbf{A}\mathbf{P}_{PRNs}\mathbf{A}^H \quad (6)$$

$$f(\theta) = \frac{\mathbf{a}^H(\theta) \mathbf{R}_{fb}^{-1} \mathbf{a}(\theta)}{\mathbf{a}^H(\theta) \mathbf{U}_0 \mathbf{U}_0^H \mathbf{a}(\theta)} \quad (7)$$

- **GNSS Spoofing Detection and Mitigation**

Our methodology is a strong one in the field of GNSS (Global Navigation Satellite System) spoofing detection and mitigation. [6] First, considering the high-resolution estimated Direction of Arrival (DOA) of numerous event sources, we propose an optimization problem for power estimation. The denoised sample covariance matrix $\mathbf{R}^{(G)}_{xx}$ and the associated theoretical covariance matrix are used to estimate the power. This results in an optimization problem whose solution is decided by certain matrix operations. It is handled as an inequality constrained least squares problem.

One of the main components of our methodology is the enhanced power estimation, which uses the denoised sample covariance matrix to both improve power estimation and accomplish high-resolution DOA estimation. [7] Subsequent GNSS spoofing detection procedures heavily rely on the provided DOA

and power characteristics. Our methodology combines cross-correlation and power comparison methods, using oblique projections to extract individual signals. [8] Subsequently, a complex beamforming and subspace oblique projection interference mitigation system is employed to diminish multipath and spoofing signals while amplifying genuine signals.

Equation (8) articulates the optimization problem regarding power comparison, with its resolution elucidated in Equation (9). Additionally, Equation (10) delineates the cross-correlation function. The decision-making process, elucidating detection outcomes under diverse scenarios, is expounded in Table 1. Lastly, Equations (26)– (31), detailing our interference mitigation approach, adeptly address instances of observed spoofing. They offer customized solutions for a range of situations, including exclusive spoofing, multipath, or their coexistence.

Table 1

Result	Decision
The power differential is negligible. No peaks in the cross-correlation.	Absence of intervention
Only one cross-correlation peaks between two certain signals.	Only multipath
Multiple correlation peaks between the signal with highest power and others	Only spoofing
Multiple correlation peaks; One correlation peak between two certain signals.	Spoofing and multipath

[9] To sum up, power estimation, cross-correlation, and interference mitigation approaches are combined in our GNSS spoofing detection and mitigation strategy to improve the resilience and dependability of GNSS systems.

Power Comparison Optimization Problem

$$\min_{\hat{\theta}_k} \left\| \hat{R}_{xx}^{(G)} - A(\hat{\theta}_k) P_{PRNS}(\hat{\theta}_k)^H \right\|_F^2 \quad (8)$$

Power Comparison Solution

$$\bar{P}(\hat{\theta}_k) = [B^H B]^{-1} B^H v \quad (9)$$

Cross-Correlation Operation

$$R_{cross} = IFFT \{ FFT(Z^k) \cdot (FFT(Z^p))^* \} \quad (10)$$

In order to summarize the proposed anti-spoofing scheme, all steps are described in Algorithm 1 in Fig. 1. [10]

Algorithm 1: GNSS Anti-Spoofing Scheme

DOA Estimation

Input: $x(n)$

- 1: Construct the covariance matrix by Equation (5) to suppress the noise component.
- 2: Reduce the correlation between sources according to Equation (13).
- 3: Estimate the DOAs for sources through Equation (18).

Output: Estimated DOAs

Spoofing Detection and Mitigation

Input: Estimated DOAs

- 1: The enhanced power estimation is performed by Equation (19).
- 2: Separate the incident signals according to Equation (24).
- 3: Obtain the cross-correlation results by Equation (25).
- 4: Make decisions based on power comparison and cross-correlation results.
- 5: Calculate the output signal according to the decision results.

Fig. 1

Fig 2. below illustrates the relationship between Signal-to-Noise Ratio and the Root Mean Square Error in the estimation of Direction of Arrival. [10]

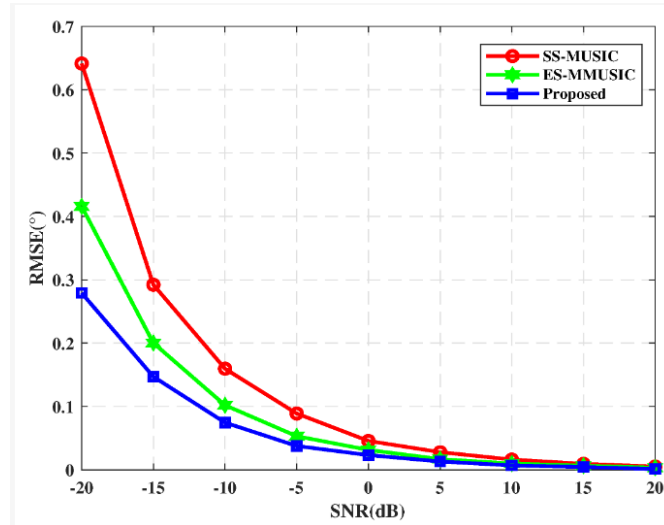
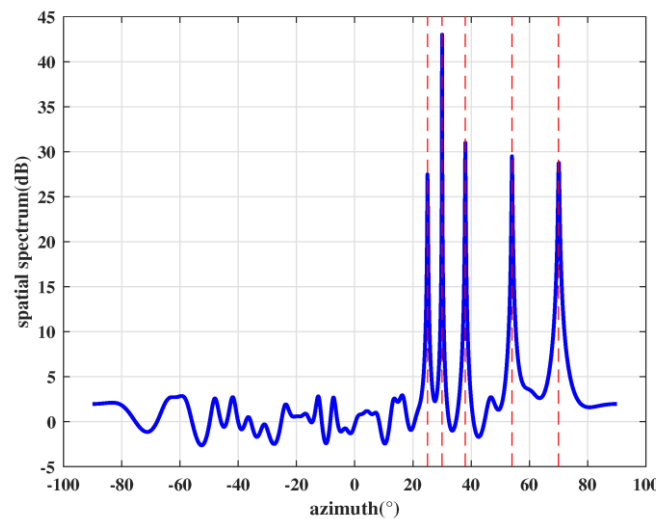


Fig 2

Results

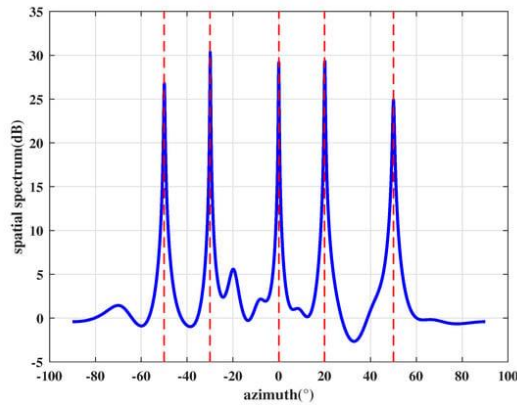
Notable are the results of the antenna array-based spatial-temporal signal processing technique for GNSS anti-spoofing and interference reduction. The efficiency of the suggested method in differentiating between spoofing, multipath interference, and genuine signals was demonstrated through extensive simulations.

In the first case, the effective attenuation method creates a deep zero offset in the spoofing direction, thus preserving the maximum gain of the real satellite signal. Beam structure and cross-correlation data demonstrate the robustness of this approach to perturbation.



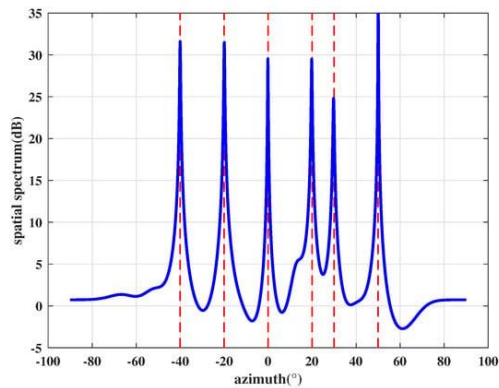
Graph 1: Spatial Spectrum Estimation Results

Scenario 2, which tested the method's performance in a multipath environment, showed that the suggested DOA estimation technique extracted all signals' directions with accuracy, including multipath and legitimate signals. Even with differing power levels, the technique showed that it could identify multipath interference and distinguish it from real signals.



Graph 2: Spatial Spectrum Estimation Results for 2nd Scenario

The proposed method effectively distinguished spoofing signals from both multipath and satellite signals. In Scenario 3, which combined spoofing, multipath, and genuine signals. Subspace oblique projection-based interference reduction was then used to effectively reduce spoofing and multipath while boosting signals from real satellites.



Graph 3: Spatial Spectrum Estimation Results for 3rd Scenario

Together, these findings demonstrate the suggested method's resilience and adaptability to fight GNSS spoofing in a range of difficult situations. The results provide a useful and efficient approach for realistic real-world applications, making a substantial contribution to the fields of GNSS security and signal processing.

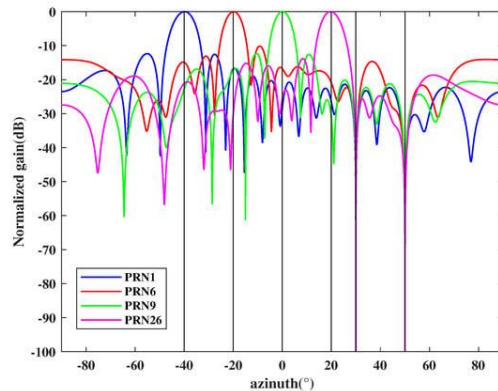


Fig. 3: Beam Graph Pattern Verifying Satellites' Authenticity

Conclusion

The aim of this investigation is to introduce a spatial-temporal signal processing technique utilizing antenna arrays to enhance the safety and reliability of GNSS receivers against spoofing. The method comprises two phases. Initially, a refined eigen space generated by PM enhances Direction of Arrival (DOA) estimation. Pre-dispreading, noise removal exploits the self-coherence of GNSS signals. A rank restoration method mitigates correlation effects to counter inaccurate DOA estimation due to correlation among GNSS spoofing, multipath, and authentic signals. Subsequently, the second phase employs cross-correlation peak monitoring and power computation to address spoofing across various scenarios. Signal power derived from estimated DOA informs cross-correlation processes, aiding spoofing identification. Through the reduction of spoofing and multipath, an interference suppression technique employing beamforming and subspace oblique projection fortifies genuine signals.

Simulation results affirm the efficacy, particularly in scenarios with intertwined signals and low signal intensity. Even in situations with low-power spoofing or high-power multipath, the proposed anti-spoofing method adeptly detects and mitigates spoofing and multipath. Notably, the technique involves pre-dispreading of the raw digital baseband signal from GNSS receivers to discern spoofing from satellite signals based on spatial-temporal disparities, obviating the necessity for external hardware.

However, the proliferation of spatially diverse interference sources poses a challenge, especially when considering military electronic countermeasures. The ULA-based anti-spoofing system, due to its limited flexibility, exhibits constraints in real-world deployment. Although the suggested preprocessing diminishes correlation, it comes at the expense of effective aperture. Further exploration into enhancing array antenna topologies and augmenting spoofing detection capabilities in practical GNSS applications is warranted given current technological advancements.

Acknowledgments

First and foremost, I would like to thank the Lord Almighty for his presence and immense blessings throughout the project work.

I wish to express my heartfelt gratitude to my supervisor Dr Pushpinder Singh Patheja, for continually guiding and actively participating in my project, giving valuable suggestions to complete the project work.

I would like to thank both of my reviewer Dr. Subash C. Patel and Dr. N D Patel respectively, for their expertise and assistance throughout all aspects of my study and research.

Last, but not least, I am deeply indebted to my parents who have been the greatest support while I worked day and night for the project to make it a success.

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AI: ARTIFICIAL INTELLIGENCE: PROS & CONS

Krishna Gopal Varshney*

ABSTRACT

A program that has the ability to learn and think is called an artificial intelligence program. Anything that consists of a program carrying out a task that we would typically assume a human would perform can be classified as artificial intelligence. AI offers a computer programs the capacity for independent thought and learning. It is the artificial simulation of human intelligence in machines to perform tasks for which humans are typically needed.

Depending on what it can do, artificial intelligence can be divided into three categories: weak, strong, and super.

- **Weak AI:** focuses on a single task and is limited in what they can accomplish (common in our daily lives)
- **Strong AI:** can learn and comprehend any intellectual task that a human can (strong AI is a goal that researchers are working toward)
- **Super AI :** exceeds human intellect and is capable of performing any task more effectively than a human (still a concept)

Applications of artificial intelligence have huge benefits and have the potential to completely transform any industry. The following is a list of a few of them.

KEYWORDS: Artificial Intelligence, Artificial Simulation, Human Intelligence, Weak AI, Strong AI, Super AI.

Introduction

Removes the Possibility of Human Error

Human error originated from the fact that mistakes are occasionally made by people. It also makes sense. If computers are properly programmed, they are not prone to these errors. Artificial intelligence makes decisions based on past performance collected data using a specific set of algorithms. As a result, mistakes are decreased and there's a potential to achieve accuracy with more precision.

Cut Down on Risk (Zero Risk)

It is among artificial intelligence's greatest benefits as well. Artificial intelligence technology has made it possible for robots to transcend many of our dangerous constraints and perform dangerous tasks for humanity, such defusing bombs, extracting coal and oil, and venturing into the deepest region of the sea, etc. It therefore aids in the worst of circumstances, whether natural or human-caused calamities. When intervention could be dangerous, AI robots can be employed.

24/7 Accessibility

Artificial intelligence algorithms are always available, while humans labor eight hours a day. Machines are always in operation, and chatbots with AI capabilities may assist customers even when they are not in use. This can assist businesses in producing more and offering a better customer experience than they could if they relied solely on human labor.

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Carry Out Repetitive Tasks

In our daily lives, we carry out a great deal of repetitive tasks, like sending birthday and anniversary wishes, automatically responding to emails, and verifying documents, among other things. Because of this, artificial intelligence (AI) assists in automating the business by handling these tedious tasks.

Improved Processes

One of artificial intelligence's many benefits is an increase in productivity in the workplace. The main causes of this are the time and money savings. When combined with the accuracy of contemporary AI, this results in a workflow that is better and more economical.

Improved Analysis of Data

Finding patterns in large amounts of data can be a laborious process. There's always a chance of missing some patterns, or the analysis can't be done thoroughly due to financial and time constraints. One benefit of AI in this situation is that it can, with an properly trained algorithm can identify important patterns, disclose vital information, and even suggest fixes to aid in well-informed decision-making..

Not Worn Out or Deteriorated

Humans have physical limitations. They are unable to endure extreme pressure or any kind of physical environment for an extended length of time. AI can be useful in this situation to go places that humans are unable to. This covers high-pressure settings like deep maritime investigation. The hardware's tunable mechanical structure reduces the likelihood of irreversible wear and tear or damage.

Lowering of Costs

AI can work continuously, producing more value in a single day than a human worker, as we discussed above. Additionally, AI frees up workers for higher-skilled tasks by helping to replace manual and tedious tasks. In the end, that adds greater value for the user or customer.

Given all of the benefits mentioned above, implementing AI for your company right now might seem like a no-brainer. However, it's also wise to thoroughly weigh the possible drawbacks of making such a significant adjustment. While there are many advantages to implementing AI, there are also drawbacks, such as implementation costs and gradual degradation.

A Deficiency in Originality

AI lacks original thought, despite being tasked with producing everything from computer code to visual art. It is limited to what it is aware of. It is unable to think creatively, if you pardon the pun. What it can eat is its limit.

High Implementation and Design Costs

Artificial intelligence solutions aim to emulate human behavior. It's not easy to develop a system that can not only mimic human thought processes but also adapt and customize responses. Companies must devote a significant amount of staff, capital, time, and resources to develop an advanced AI system. Even the most basic ones demand a great deal of skill and attention to detail, which is expensive. Additionally, manufacturers need to advance along with technology and user behavior patterns. The hiring organization also has to consider the cost of upgrading technology and usage trends on a regular basis.

Absence of Responsibility

The absence of liability associated with using AI for decision-making is another significant drawback. A tool supported by AI is the result of many people's efforts. The challenging part now is determining who is to blame when the tool malfunctions, whether it misclassifies a person, denies a loan, or crashes a self-driving car.

Humans Lose Skills

While most experts point to AI's ability to relieve humans of tedious and repetitive tasks as a benefit, some worry that this particular advantage comes with a drawback: a loss of human skills. People frequently learn and master simple repetitive tasks first, which helps them understand how those tasks fit into the larger chunks of work they must accomplish to complete an objective. This helps people advance their knowledge as well as their personal and professional crafts. However, some have expressed concerns that people may lose their ability to know and understand how to perform those tasks as AI takes over entry-level jobs. That might hinder their capacity to become true experts in a trade or profession and deprive them of the skills needed to step in.

Emotionless

Since we were young children, we have been taught that machines and computers are emotionless. Since humans function best in teams, managing a team is essential to reaching goals. Undoubtedly, machines perform far better when operating at peak efficiency, but it's also true that they can never fully replace the interpersonal relationships that define a team.

Absence of Non-Traditional Thinking

Only the jobs for which they are intended or programmed can be completed by machines; otherwise, they frequently malfunction or produce unrelated results that could have serious consequences.

Finally, these are the most of the benefits and drawbacks of artificial intelligence. Every new development or invention will contain both, but it is up to us as humans to handle that and harness the benefits of the innovation to make the world a better place. The field of artificial intelligence holds great promise for improving living conditions. Artificial intelligence has benefits and drawbacks, but there is no denying its influence on the world economy. Additionally, some claim that if artificial intelligence falls into the wrong hands, it has the potential to wipe out human civilization. Even so, none of the large-scale AI applications have the ability to annihilate or subjugate humankind.

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E-BANKING AND URBAN CUSTOMERS: AN OVERVIEW

Dr. Arun Mondal*

ABSTRACT

Banks provide e-banking services properly to urban customers with the help of advanced technology. Many customers avoid e-banking due to security threat. Banks deliver e-banking facilities accurately to increase the level of customer satisfaction. Urban customers avail e-banking services from their home. Banks focus on the service quality of e-banking to retain customers. Many people avoid e-banking due to inadequate knowledge. Customer satisfaction plays important role to enhance customer loyalty. Urban customers avail e-banking facilities more than traditional banking. The study is based on primary data and secondary data. Primary data has been collected from West Bengal. Secondary data has been collected from journal articles. In this paper, an attempt has been made to find out various aspects of e-banking and urban customers.

KEYWORDS: Bank, e-Banking, Customer, Urban, Secondary Data.

Introduction

Banks provide e-banking services to the customers with the help of advanced technology. E-banking includes tele banking, virtual banking, internet banking, mobile banking, digital banking, national electronic fund transfer, real time gross settlement, automated teller machine etc. Banks focus on customer satisfaction to survive in the competitive environment of banking sector. Customer satisfaction depends on several factors like convenience, accessibility, security, cost, web portal management etc. bank delivers high quality e-banking services to the customers to increase the level of customer satisfaction. Banks focus on customer satisfaction as it helps to enhance customer loyalty. Many people avoid e-banking due to security threat. Customer suffer due to poor internet service. Many people avoid e-banking due to inadequate knowledge. Private sector banks provide better e-banking facilities in comparison to public sector banks. The employees of private sector banks are more efficient than public sector banks. Highly educated people prefer e-banking more than traditional banking. The inclination of urban customers towards e-banking is more than rural customers. Customer satisfaction plays important role to retain customers. Banks provide e-banking services appropriately to retain the customers. Customers prefer e-banking than traditional banking as they can avail banking facilities from their home. The objective of the study is to find out various aspects of e-banking and urban customers.

Literature Review

Banks are able to provide e-banking services to customers due to development of technology (Zafar et al., 2011). Banks are compelled to focus on customer satisfaction due to increased competition in banking industry and recent technological development (Cabanillas et al., 2013). Banks emphasize on customer satisfaction due to various reasons like technological development, global competition and customer awareness (Esmaeilie et al., 2013). Many people avail mobile banking easily as they use mobile phones (Deshwal, 2015). Many bank employees are not aware about the modern technology and they are not able to deliver e-banking services accurately to the customers (Sahu, 2016). Security factor is very important behind the adoption of internet banking (Yadav, 2016). Banks face difficulties to deliver e-banking services properly due to poor internet service (Jindal, 2016). Banks should emphasize on service quality to enhance customer satisfaction (Kampakaki and Papthanasion, 2016). Employees of

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banks have inadequate knowledge about e-banking (Singhal, 2017). Banks adopt modern technology as it helps to deliver accurate e-banking services to customers (Ayyash, 2017). Online banking depends on internet but traditional banking depends on branch banking (Santhiya and Saravanan, 2018). Some customers avoid e-banking as a result of lack of security (Prasad et al., 2019). Banks deliver advanced technology based services as preference of customers changes with the change in technology (Sunith, 2019). Quality of e-banking services plays important role behind customer satisfaction (Madavan and Vethirajan, 2020). The preference of customers has been changed due to e-banking as they can avail banking services without visiting bank office (Peter, 2020). Bank delivers high quality e-banking facilities as it helps to gain customer loyalty (Saravanan and Leelavathi, 2020). E-banking provides the facilities to the customers to conduct a wide range of financial transactions (Faisal and Tayachi, 2021). Digital revolution in banking sector has compelled the banks to offer technology based services to customers (Mansuri, 2021).

Methodology

The study is based on primary data and secondary data. Primary data has been collected from the urban customers of West Bengal. The sample size of the study is one hundred. 65% of the respondents are male and 35% of the respondents are female.

Data Collection and Data Analysis

- Urban customers prefer e-banking more than rural customers:

Agree	:	92%
Disagree	:	08%

 92% of respondents agree and 08% of respondents disagree.
- Private sector banks provide better e-banking services than public sector banks:

Agree	:	81%
Disagree	:	19%

 81% of respondents agree and 19% of respondents disagree.
- Private bank employees are more efficient than public bank employees regarding e-banking:

Agree	:	54%
Disagree	:	46%

 54% of respondents agree and 46% of respondents disagree.
- Urban customers face difficulties in availing e-banking services due to poor infrastructure of banks :

Agree	:	82%
Disagree	:	18%

 82% of respondents agree and 18% of respondents disagree.
- Urban customers avoid e-banking due to security threat:

Agree	:	63%
Disagree	:	37%

 63% of respondents agree and 37% of respondents disagree.
- Urban customers prefer e-banking more than traditional banking :

Agree	:	58%
Disagree	:	42%

 58% of respondents agree and 42% of respondents disagree.

Conclusion

Urban customers avail e-banking services more than rural customers. Private sector banks deliver better e-banking facilities than public sector banks. Many customers avoid e-banking due to security threat. The customers face difficulties due to poor infrastructure of bank. Customers suffer due to poor internet service. The inclination of urban customers towards e-banking has increased in recent years. Urban customers prefer e-banking more than traditional banking.

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LIFE INSURANCE FORECASTING AND SUSTAINABILITY: A MACHINE LEARNING APPROACH

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ABSTRACT

This abstract explores the application of machine learning in predicting life insurance outcomes and assessing the sustainability of such predictions. Leveraging data-driven models, this study aims to enhance accuracy in forecasting life insurance trends. Leveraging machine learning for life insurance forecasting not only enhances risk assessment but also aligns with the industry's shift towards sustainable practices. The analysis delves into the potential societal and economic impacts, contributing valuable insights to the ongoing discourse on the sustainable integration of machine learning in the insurance sector. Predicting life insurance outcomes and assessing sustainability through machine learning involves analyzing various factors such as age, health, lifestyle, and economic indicators. Models can be trained to predict policyholder behavior, identify high-risk individuals, and optimize underwriting processes for sustainability. Regular updates to the model using real-world data contribute to its accuracy and relevance over time. Additionally, ethical considerations and transparent algorithms are crucial for ensuring the responsible and sustainable use of machine learning in the insurance industry. The study can contribute insights into optimizing policies, improving financial stability, and fostering long-term environmental and social responsibility within the life insurance sector.

KEYWORDS: LIC, Machine Learning, Sustainability, Predictions.

Introduction

Underinsurance is defined as having insufficient life insurance coverage to cover expenses, and it has been shown to have a substantial impact on a family's sustainability and financial health. However, insurance businesses must have a thorough understanding of potential policyholders. Customer profiling has become one of the most important marketing methods for any long-term organization, including the insurance industry, in order to identify potential life insurance buyers. Machine learning is a widely used tool for customer profiling and segmentation. Today, the insurance industry is a competitive industry. This is a risk-based sector that is always dependent on 'Statistics'. Nowadays, this industry has a lot of data and information for risk assessment. It assesses risk using 'Big Data Technology'. It also focuses on customer acquisition and retention by developing various tactics. In this research paper, the researcher focuses on four areas where companies employ machine learning to save costs and provide better service to their clients, resulting in customer happiness. Now, Indian insurance companies use these technology for prediction and sustainability.

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Literature Review

Ackert L.F. *et al.* (2002) The research paper titled "The Asset Allocation Decision and Investor Heterogeneity: A Puzzle?" The Journal of Economic Behavior & Organization, Volume 47, Issue 4, April 2002, Pages 423-433, explores portfolio allocation decisions for a large sample of demographically varied survey respondents using finance theory and financial advisor recommendations. The researcher investigates if asset allocation decisions differ for respondents with different characteristics such as gender, home ownership, age, net worth, and psychological orientation. The decisions made by the sample respondents are congruent with popular advice and financial theory. The researchers discovered that only age influences the mix of hazardous securities.

Politecnico di Milano (2021) The research paper titled "A machine learning model for lapse prediction in life insurance contracts" Volume 191, 1 April 2022, 116261 of Expert Systems with Applications in Elsevier examines the use of the Random Forest methodology to predict policyholders' decisions to lapse life insurance contracts. Even after factoring in feature interactions, the technique beats the logistic model. The researcher uses global and local interpretability techniques to study how the model operates. The researcher demonstrates that non-economic features (the time passed between the inception of the contract and the time to expiry, as well as the insurance company and its commercial approach) have a significant impact on the lapse decision, whereas economic/financial features (except the disposable income growth rate) have a limited effect. The investigation demonstrates that linear models, such as the logistic model, are unable to reflect the variety of financial decisions.

Objective of the Study

The Study aims at:

- To know the approach of Machine Learning in Insurance Industry.
- To identify the problems faced by Life Insurance in sustainability.
- To highlight the different strategy adopted by Life insurance in sustainability.
- To Offer certain suggestions.

Hypothesis of the Study

Ho: There is no significant relationship between the activities of Life Insurers and sustainability.

H1: There is significant relationship between the activities of Life Insurers and sustainability.

Research Methodology

The study is based on secondary sources of information. To gather secondary material, a variety of books, journals, periodicals, newspapers, annual reports, and websites were consulted. This research is both descriptive and exploratory in character. The study's analysis uses data collected from 2016-17 to 2022-23.

Life Insurance

It protects beneficiaries in the event of an accidental death or other unexpected incident. However, in countries with well-established social security systems, demand for life insurance is typically minimal. The perception of mortality risk, as well as attitudes toward life insurance, are important considerations when acquiring a policy. Most households are aware of the financial risk associated with mortality. However, this does not result in the acquisition of life insurance, which may have an impact on their financial stability.

Sustainable Insurance

Sustainable insurance is a strategic approach in which all activities in the insurance value chain, including interactions with stakeholders, are conducted in a responsible and forward-thinking manner by identifying, assessing, managing, and monitoring risks and opportunities related to environmental, social, and governance issues. Sustainable insurance seeks to decrease risk, create creative solutions, boost corporate performance, and contribute to environmental, social, and economic sustainability.

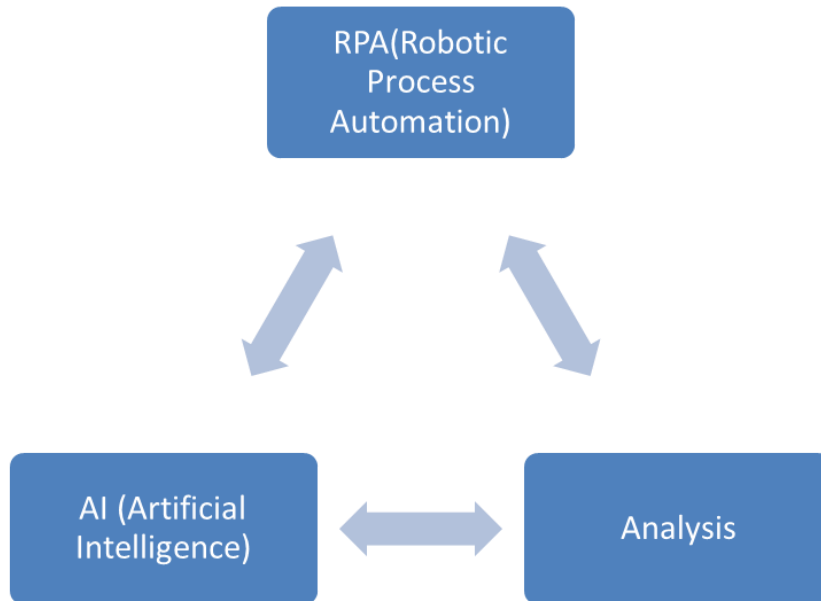
Major Areas in Insurance of Machine Learning

The following are the main area of machine learning in Insurance Industry.

- Automation & Process Improvement
- Better Underwriting
- Customer Lifetime Value Prediction
- Fraud Detection and Prevention

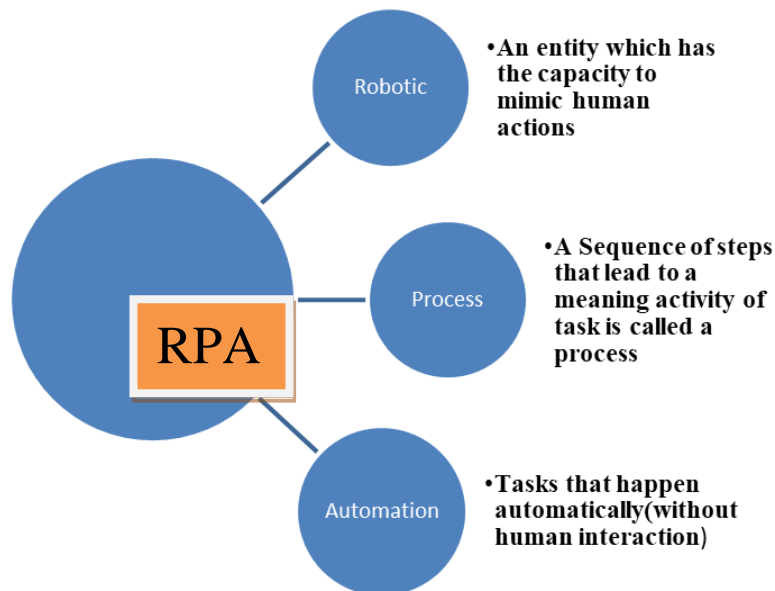
Automation & Process Improvement

Figure 1



Source: Self compiled

Figure 2



Source: <https://images.app.goo.gl/Kke8nBXxRw3T7k4y6>

Insurance Industry has various legal formalities. Due to this for settlement of thousands of claim take time. Machine learning helps in this. It assess the associated risk, resolve customer queries and settled the claim automatically without any human intervention. The process becomes simplified. From initial stage i.e; analysing report to resolving complaints of customers all become possible with the help of machine learning. It saves time and helps in rendering high quality services, which help the industry in sustainability practices. For e.g. “Capricity”

After launching 'Captricity' it is possible to read handwritten customer applications and feed the data to server quickly in few minutes. In the language of Machine Learning it is called "Optical Character Resolution" (OCR). OCR technology read the text or image from any document. At the time of mediclaim when the patient is in hospitalization, it works fast and settle the claim in few minutes.

"Lemonade" company has made algorithm, which settle claim within few minute with 99.99% accuracy. Catbot takes few details of customers at the time of hospitalization. Then the company processes these data in its algorithm and it accept or rejects claim.

Better Underwriting

Insurance industry has underwriters, who assess the risk and decide amount of premium. This can be explained with the example; If you want to take health insurance policy then the company will check your health and then it assess risk with you and then it decide the amount of premium accordingly. If your health record is poor then the company will charge high premium vice versa. The risk assessment, decision of amount of premium is being done with the help of underwriter, but now a day these work are being performed by Machine Learning. It keeps the health record of customers and analyzes the data for assessing the risk so that the decision of amount of premium can be done.

For e.g. "Daisy Intelligence" is a company which creates various model which assess the risk of individual customer through the data related to age, location, blood test etc. These data are being feed in the app and it predict the insurance premium.

Customer Lifetime Value Prediction

Customer lifetime value (CLV) is the total revenue or profit generated by a customer over the entire course of their relationship with your business. The company predicts customer life time value by observing customer behavior. The company using machine learning analyse the behavior of customer that whether the customer surrender the policy in near future or he will continue. This is termed as "Churn". If Customer Lifetime Value is good then company generates personalized offer for such customer for their retention and satisfaction.

Fraud Detection and Prevention

This is the main problem in insurance industry. In 2019, there were committing fraud ₹45000 crores in this sector. If company minimizes their fraud then the profit will increases. In such case machine learning play a significant role in detection and prevention of fraud. Machine learning algorithm uses classification model which uses customer's claim data then it classify whether such claim is fraud or non-fraud.

Machine Learning in Indian Insurance Market

- Max New York Life Insurance launches AI(artificial intelligence) based campaign which name is "SURAKSHA" . It helps to identify the need of customer and affinity and it recommend best product to customers accordingly.
- Max New York Life Insurance also makes predictive underwriting engine for issuing policies, which name is "Shield and Fincheck". It checks the insurance application in different angles and predict its early lapse of chances of frauds. Thus it helps in issuing policies fast and the work of underwriter becomes easy.
- Max New York Life Insurance makes "Deep Learning Based Image Recognition Tools" which scan the photograph of customer and match with their KYC documents for knowing the genuine customer. With the help of this tools, the claim settlement rate was 99.22% in the year 2020, which is the highest in India.
- ICICI Pru Life has launched "AUSIS" tools for speed up verification of policies. This is "Automated Smart Underwriting Technology" which start process within 60 seconds and it verify data of customer in few minutes. This tool is made with the partnership with "ARTIVATIC.AT" Company which underwriting fully automated.
- HDFC Standard Life Insurance launched AI based virtual assistant namely "InstA" in 2019. It analyze the feedback, query and do rendering fast services. It is mobile application which helps day to day business operation and increases efficiency of employees. This application is available 24hours 7days for solving query.

- HDFC Standard Life Insurance launches AI based “SPOK” which address the complaints of customers in Mili-second. Now, company solves the query with these tools. For making these tools, the HDFC Life has made partnership with the “SENSEFORTH” company.

Analysis

Table 1: Life Insurers (Claim Settlement Ratio)

Company	2020	2021	2022	2023
Aditya Birla Sun Life Insurance Co. Ltd	97.54	98.04	98.07	98.12
Aegon Life Insurance Co. Ltd.	98.01	99.25	99.03	99.03
Ageas Federal Life Insurance Co. Ltd.	0	95.07	97.03	96.06
Aviva Life Insurance Co. Ltd.	97.53	98.01	98.39	98.39
Bajaj Allianz Life Insurance Co. Ltd.	98.02	98.48	99.02	99.04
Bharti AXA Life Insurance Co. Ltd.	97.35	99.05	99.09	99.1
Canara HSBC OBC Life Insurance Co. Ltd.	98.12	97.1	98.44	99.01
Edelweiss Tokio Life Insurance Co. Ltd.	83.44	97.01	98.09	99.2
Exide Life Insurance Co. Ltd.	98.15	98.54	99.09	99.09
Future General Life Insurance Co. Ltd.	95.28	94.86	96.15	95.04
HDFC Life Insurance Co. Ltd.	99.07	98.01	98.66	99.39
IndiaFirst Life Insurance Co. Ltd.	96.65	96.81	96.92	97.04
ICICI Prudential Life Insurance Co. Ltd.	97.84	97.9	97.82	97.8
Kotak Mahindra Life Insurance Co. Ltd.	96.38	98.5	98.82	98.82
Max Life Insurance Co. Ltd.	99.22	99.35	99.34	99.51
PNB Metlife India Insurance Co. Ltd.	97.18	98.17	97.33	99.06
Pramerica Life Insurance Co. Ltd.	98.42	98.61	98.3	98.8
Reliance Nippon Life Insurance Co. Ltd.	98.12	98.49	98.67	98.6
Sahara India Life Insurance Co. Ltd.	89.45	97.18	97.08	99.7
SBI Life Insurance Co. Ltd.	94.52	93.09	97.05	98.39
Shriram Life Insurance Co. Ltd.	91.61	95.12	82.39	97.4
Star Union Dai-ichi Life Insurance Co. Ltd.	96.96	95.96	97.42	97.42
TATA AIA Life Insurance Co. Ltd.	99.06	98.02	98.53	99.01
Life Insurance Corporation of India	96.69	98.62	98.74	98.6

Source: Annual report of IRDAI

According to the IRDAI report 2022-23, the leading Life Insurance providers with the highest CSR are

- Max Life Insurance – 99.51%
- HDFC Life Insurance – 99.39%
- Sahara India Life Insurance – 99.7%

Table 2

Year	Total New Life Insurance Policies (in Lakh)	Total Life Insurance Premium (₹in Crores)	Life Insurance Penetration (In Percentage)	GDP (in Percentage)
2016-17	264.56	418476.62	2.72	6.80
2017-18	281.97	458809.44	2.76	6.45
2018-19	286.48	508132.03	2.74	3.87
2019-20	288.46	572910.19	2.82	5.83
2020-21	281.27	628731.04	3.2	9.05
2021-22	291.13	692614.14	3.2	7.00
2022-23	285.17	782503.96	3	7.2

Source: Annual Report of IRDAI

Interpretation

This above table shows new life insurance policies issued, Life insurance premium earned, Life Insurance Penetration, and GDP. Life insurance Policies issued and Life Insurance Premium table shows that as machine learning use in insurance industry increases the penetration and GDP in Economy increases. This is positive use of machine learning in insurance industry.

Finding

- REGRESSION
- /MISSING PAIRWISE
- /STATISTICS COEFF OUTS R ANOVA
- /CRITERIA=PIN(.05) POUT(.10)
- /NOORIGIN
- /DEPENDENT Penetration
- /METHOD=ENTER Issued Policies LIP
- /RESIDUALS HISTOGRAM(ZRESID)
- /SAVE ZPRED SEPRED.

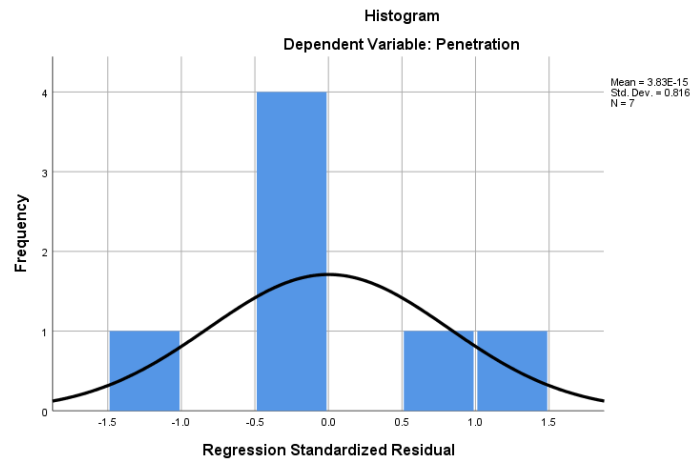
Regression

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	LIP, Issued Policies ^b	.0	Enter
a. Dependent Variable: Penetration			
b. All requested variables entered.			

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.763 ^a	.582	.374	.16825
a. Predictors: (Constant), LIP, Issued Policies				
b. Dependent Variable: Penetration				

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.158	2	.079	2.790	.174 ^b
	Residual	.113	4	.028		
	Total	.271	6			
a. Dependent Variable: Penetration						
b. Predictors: (Constant), LIP, Issued Policies						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.578	2.571		1.003	.373
	Issued Policies	-.001	.010	-.060	-.148	.889
	LIP	1.300E-6	.000	.798	1.977	.119
a. Dependent Variable: Penetration						



Conclusion

Thus it can be concluded that the Machine Learning helps in reduction of cost, settlement of claims, prevention from errors & frauds. It assess the risk and decide the amount of accurate premium, which helps insurance industry in its sustainable development.

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FROM ADAPTATION TO INTEGRATION: A REVIEW PAPER ON THE INDIAN ACCOUNTING STANDARDS (IND AS) IN GLOBAL FINANCIAL REPORTING CONVERGENCE

Dr. Renu Gupta*

ABSTRACT

This research paper provides a comprehensive review of the evolution, current practices, and future directions of Indian Accounting Standards (Ind AS) in light of global convergence with International Financial Reporting Standards (IFRS). The objective was to analyse the harmonization of Ind AS with IFRS, the sector-specific implications of Ind AS adoption, and the integration of technological advancements in financial reporting. Through an extensive literature review and comparative analysis, this paper highlights the significant milestones in the adoption of Ind AS, the challenges encountered during the transition period, and the impact on various sectors including banking, insurance, and manufacturing among others. Key findings suggest that while the convergence has significantly enhanced transparency, comparability, and reliability of financial reporting in India, it has also posed challenges related to technical complexities, regulatory interpretations, and operational integrations. The paper further explores recent technological trends such as XBRL, blockchain, and AI, and their implications for financial reporting. The synthesis of literature underscores the critical role of continuous learning, adaptation by stakeholders, and the dynamic nature of global accounting practices. The implications for investors, analysts, auditors, regulators, and corporate management are discussed, emphasizing the importance of strategic planning, compliance, and leveraging technology in navigating the complexities of global financial reporting standards.

KEYWORDS: *Indian Accounting Standards (Ind AS), International Financial Reporting Standards (IFRS), Financial Reporting, Technological Advancements in Accounting, Global Accounting Convergence.*

Introduction

Introduction to Indian Accounting Standards (Ind AS)

The evolution and implementation of Indian Accounting Standards (Ind AS) mark a significant milestone in the journey towards global financial reporting convergence. With the objective of aligning Indian accounting practices with International Financial Reporting Standards (IFRS), the Ministry of Corporate Affairs (MCA) initiated a phased adoption of Ind AS starting from 2015. This transition aimed at enhancing the transparency, reliability, and comparability of financial statements among Indian companies and their global counterparts.

The genesis of Ind AS can be traced back to the increasing need for Indian businesses to access global markets and attract foreign investments. Recognizing this, the Institute of Chartered Accountants of India (ICAI) played a pivotal role in formulating and revising the standards to ensure compatibility with IFRS, thereby facilitating a smoother integration with international financial reporting norms (A. Gupta & A. Pandey, 2019).

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The adoption of Ind AS has profound implications for financial reporting in India. By embracing these standards, Indian companies not only ensure greater transparency and comparability with global peers but also enhance investor confidence both domestically and internationally. The convergence with IFRS underpins India's commitment to adhering to high-quality financial reporting standards, facilitating easier access to global capital markets and fostering an environment of trust among stakeholders (Hayder Abdul Hameed Khadim, 2017; A. Tarca, 2012).

Despite the clear benefits, the transition to Ind AS posed significant challenges, ranging from technical complexities to training and capacity building. To address these, regulatory bodies and professional accounting organizations in India undertook extensive efforts to prepare the corporate sector for the shift. These included issuing guidance notes, conducting training sessions, and providing transition reliefs to ease the adoption process (Zhuquan Wang & Javed Miraj, 2018).

The dynamic nature of global business necessitates continual updates and revisions to accounting standards. Ind AS is no exception, with regular amendments reflecting changes in IFRS and addressing emerging accounting issues. This adaptive approach ensures that Indian accounting standards remain relevant and continue to meet the needs of a rapidly changing business environment (Maliah Sulaiman, N. Ahmad, & N. Alwi, 2004; Kameliya Savova, 2021).

The introduction of Ind AS represents a critical step towards enhancing the global comparability and quality of financial reporting in India. As companies navigate the complexities of these standards, the ultimate goal remains clear: to foster transparency, reliability, and investor confidence in Indian financial markets.

Harmonization with International Financial Reporting Standards (IFRS)

The globalization of financial markets and the consequent need for standardized accounting practices have led to the emergence of International Financial Reporting Standards (IFRS) as a benchmark for accounting and financial reporting across the globe. In an effort to align with these international standards and enhance the comparability of financial statements, India adopted its own set of accounting standards, known as Indian Accounting Standards (Ind AS), which are largely based on IFRS. This part of review paper aims to scrutinize the harmonization of Ind AS with IFRS, highlighting the similarities and differences between the two sets of standards and evaluating their impact on Indian companies across various sectors. Through a comparative analysis of key accounting aspects such as revenue recognition, financial instruments, leases, and more, this review sheds light on the challenges and opportunities faced by Indian entities in the global financial reporting landscape. The table provided encapsulates a distilled comparison drawn from scholarly work, offering insights into the practical implications of these standards on Indian businesses, supplemented by relevant examples and academic citations.

Aspect	Similarity	Difference	Impact on Indian Companies	Example	Citation
Revenue Recognition	Both Ind AS and IFRS require revenue to be recognized when it is probable that future economic benefits will flow to the entity.	Ind AS provides more guidance on the sale of goods, rendering of services, and interest, royalties, and dividends.	Indian companies need to assess revenue contracts more carefully, especially with multiple deliverables.	Sale of products with warranties.	(Gupta & Pandey, 2019)
Financial Instruments	Both sets of standards classify financial instruments under amortized cost,	Ind AS has carve-outs related to the derecognition of financial assets and liabilities.	Impact is significant for banks and financial institutions, requiring reclassification	Classification of equity investments.	(Epizitone & Nxumalo, 2021)

	fair value through OCI, and fair value through P&L.		and measurement.		
Leases	Both Ind AS and IFRS introduce a single lessee accounting model, requiring lessees to recognize assets and liabilities for all leases.	Ind AS 116 provides exemptions for short-term leases and low-value assets.	Significant impact on companies with large operating leases, such as retail and airlines.	Lease of retail space.	(Nijam & Athambawa, 2016)
Property, Plant, and Equipment	Both standards allow for the revaluation model as an alternative to the cost model.	Ind AS permits a component approach for depreciation, whereas IFRS has a more generalized approach.	Affects companies with significant fixed assets, requiring detailed component tracking.	Depreciation of an aircraft.	(Trabelsi, 2015)
Impairment of Assets	Both Ind AS and IFRS require testing assets for impairment when there is an indication that an asset may be impaired.	The methodology and timing for conducting impairment tests have minor differences.	Companies need to closely monitor indicators of impairment and may need to perform more frequent tests.	Impairment of goodwill.	(Kingsly, 2017)
Employee Benefits	Both frameworks have similar requirements for the recognition and measurement of employee benefits.	Ind AS provides specific guidance on measuring the leave encashment liability which is not as explicit under IFRS.	Affects companies with significant employee benefits, particularly with long-term benefits.	Calculation of gratuity and leave encashment.	(Dovbush, 2021)
Consolidation	Both standards require consolidation of financial statements where control is present.	Ind AS has specific exemptions for certain types of investment entities from consolidation.	Affects investment companies and those with complex structures involving numerous subsidiaries.	Consolidation of subsidiary companies.	(Combs, Samy, & Myachina, 2013)
Fair Value	Both Ind AS	Ind AS	Increased	Valuation of	(Idowu, 2016)

Measurement	and IFRS have a fair value measurement framework.	includes additional disclosures for non-financial assets.	disclosure requirements for companies, particularly in real estate and investments.	investment property.	
Income Taxes	Both require deferred tax accounting for temporary differences between the carrying amount of assets and liabilities and their tax bases.	Ind AS has specific exemptions and differences in the recognition of deferred tax assets for unrealized losses.	Impacts companies with significant deferred tax assets or liabilities, affecting tax planning.	Recognition of deferred tax assets on loss carryforwards.	(Becker, Bischof, & Daske, 2021)
Business Combinations	Both frameworks require the acquisition method for business combinations.	Ind AS has different treatment for contingent consideration from that of IFRS.	Affects companies involved in mergers and acquisitions, particularly with complex deal structures.	Accounting for earn-outs in acquisitions.	(Street & Shaughnessy, 1998)

The table above presents a systematic comparison of Ind AS with IFRS, across several crucial accounting dimensions. It is evident that while Ind AS strives for congruence with IFRS to ensure global comparability, certain carve-outs and additional guidance have been incorporated to cater to the unique business and regulatory environment in India. These modifications, while fostering alignment with international practices, also introduce complexities in application and interpretation for Indian companies.

Revenue Recognition and Financial Instruments segments, for example, underscore the necessity for Indian companies to undertake meticulous contract assessments and reclassifications, driven by Ind AS's detailed guidance and carve-outs. This not only affects operational practices but also demands enhanced disclosures, as seen in the Fair Value Measurement and Leases sections, significantly impacting sectors like retail, banking, and real estate.

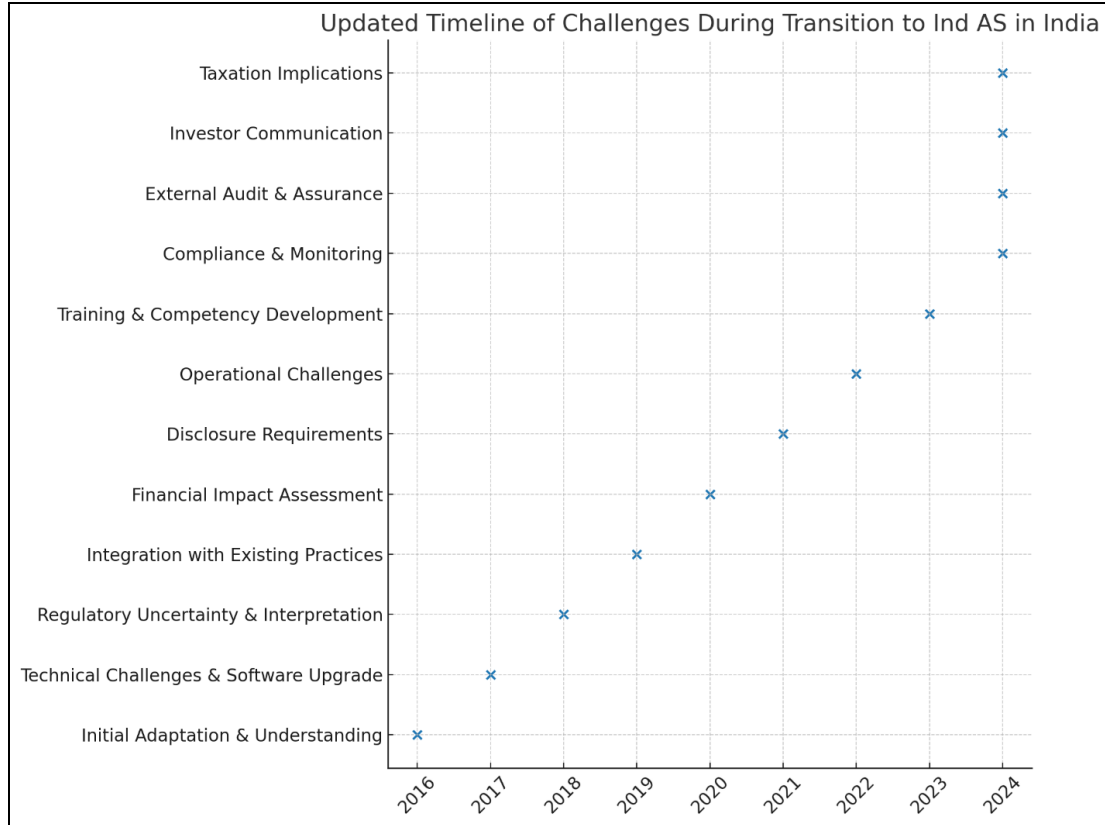
Property, Plant, and Equipment and Impairment of Assets reflect Ind AS's emphasis on a more detailed and component-based approach, impacting companies with substantial fixed assets. The nuanced differences in methodologies for impairment testing and depreciation highlight the standards' focus on reflecting the true economic value of assets.

The sections on Employee Benefits and Consolidation reveal Ind AS's specific guidelines on measuring liabilities and exemptions for investment entities, illustrating the standard's adaptability to Indian corporate structures and employment practices. Income Taxes and Business Combinations further illustrate how Ind AS modifications influence tax planning and the accounting for complex mergers and acquisitions, with implications for financial strategy and corporate governance.

In summary, the harmonization of Ind AS with IFRS embodies a strategic initiative towards global financial reporting convergence, offering Indian companies a platform for international comparability. However, the nuanced differences necessitate a deep understanding of both sets of standards, underscoring the need for continuous education and adaptation by stakeholders. This integration process not only challenges but also provides opportunities for Indian businesses to refine their accounting practices and enhance transparency and accountability in financial reporting, paving the way for greater participation in the global marketplace.

Adoption and Transition Challenges

The adoption of Ind AS has been a phased process, tailored to enable companies to gradually adapt to the complex requirements of these standards. Each phase of adoption has presented unique challenges ranging from initial understanding and technical adaptation to compliance and operational integration. This review seeks to delineate the myriad of challenges encountered by Indian companies throughout the transition period, identifying the impact on their operations and the adaptive measures employed to mitigate these challenges. Through a systematic review of scholarly works, this part of paper synthesizes the key hurdles during the Ind AS adoption timeline, providing insights into the phased approach, specific challenges, their implications, and the strategies devised to overcome them.



Year	Challenge	Impact on Companies	Adaptive Measures	Citation
2015-2016	Initial Adaptation & Understanding	Difficulty in grasping the comprehensive changes Ind AS brings.	Training and workshops for staff.	Roy & Vishwanathan, 2018
2016-2017	Technical Challenges & Software Upgrade	Upgrading accounting software to comply with Ind AS standards.	Investing in Ind AS compliant software.	Schuetz & Venkatesh, 2020
2017-2018	Regulatory Uncertainty & Interpretation	Ambiguity in the interpretation of certain Ind AS provisions.	Seeking clarification from regulatory bodies.	Luthra, Garg, & Haleem, 2015
2018-2019	Integration with Existing Practices	Aligning existing accounting practices with new standards.	Phased integration and parallel accounting for a transitional period.	Kazmi, 2008

2019-2020	Financial Impact Assessment	Evaluating the financial impact of transition on balance sheets.	Conducting thorough financial impact assessments.	Bhattacharyya, 2010
2020-2021	Disclosure Requirements	Increased and more complex disclosure requirements.	Enhancing the financial reporting process.	Singh & Chaudhuri, 2009
2021-2022	Operational Challenges	Adapting operational processes to new reporting standards.	Streamlining operations to accommodate new processes.	Gupta, Singh, & Suri, 2018
2022-2023	Training & Competency Development	Lack of skilled workforce knowledgeable in Ind AS.	Ongoing training and competency development programs.	Bhattacharya, Momaya, & Iyer, 2021
Ongoing	Compliance & Monitoring	Continuous monitoring for compliance with Ind AS.	Establishing a dedicated compliance team.	Thanki & Thakkar, 2018
Ongoing	External Audit & Assurance	Ensuring audits are conducted in accordance with Ind AS.	Collaborating with auditors experienced in Ind AS.	Mendon, Salins, & Aithal, 2019
Ongoing	Investor Communication	Communicating the effects of transition to investors.	Transparent reporting and investor relations initiatives.	Durgaprasad & Prasad, 2023
Ongoing	Taxation Implications	Understanding the tax implications of adopting Ind AS.	Consulting with tax experts for Ind AS-related tax planning.	Sharma, Joshi, Kannan, Govindan, Singh, & Purohit, 2020

The transition to Ind AS has been a journey fraught with challenges, yet it has also opened avenues for Indian companies to refine their financial reporting practices. The table provided offers a chronological exploration of the obstacles companies faced, starting from the initial adaptation phase, where the primary challenge was understanding the depth and breadth of Ind AS changes, to ongoing challenges such as compliance, monitoring, and ensuring external audit and assurance align with the new standards. Each phase of the transition not only tested the resilience and adaptability of companies but also highlighted the importance of strategic planning and resource allocation.

The adaptive measures adopted by companies, such as intensive training and workshops, investment in compliant software, and seeking regulatory clarifications, underscore the proactive steps taken to mitigate the impact of these challenges. Moreover, the engagement with external auditors and tax consultants points towards an ecosystem-wide effort to embrace the complexities of Ind AS, ensuring that financial reporting not only complies with national standards but also resonates with global best practices.

The ongoing challenges, including compliance monitoring, investor communication, and understanding taxation implications, reflect the dynamic nature of financial reporting standards. They necessitate a continuous investment in training, technology, and processes to uphold the principles of transparency, accountability, and comparability in financial reporting. Furthermore, the phased approach to Ind AS adoption has allowed companies to gradually integrate these standards into their existing practices, minimizing disruption and facilitating a smoother transition.

In conclusion, the journey towards Ind AS compliance has been intricate and demanding, yet it has significantly contributed to aligning Indian accounting practices with international standards. The challenges and adaptive measures highlighted in this review not only provide a roadmap for companies still navigating their transition but also offer insights into the evolving landscape of global financial reporting. As companies continue to adapt and integrate Ind AS into their financial reporting frameworks, the emphasis on continuous learning, process improvement, and stakeholder communication will be paramount in overcoming future challenges and leveraging the opportunities presented by global financial reporting convergence.

Sector-specific Implications of Ind AS

The adaptation and integration process of Ind AS present a unique set of challenges and opportunities for each sector, directly impacting their financial reporting practices, transparency, and comparability on a global scale. This review paper delves into the sector-specific implications of Ind AS, scrutinizing how these standards reshape accounting treatments, and consequently, the financial reporting landscape across diverse sectors. Through an examination of scholarly works, this part of paper aims to provide a comprehensive overview of the nuanced effects of Ind AS across sectors such as banking, insurance, manufacturing, IT & software, real estate, telecommunications, retail, pharmaceuticals, education, energy, automotive, and hospitality. The analysis is structured to highlight the impact of Ind AS, the subsequent accounting treatments under these standards, and the broader implications for financial reporting within each sector.

Sector	Ind AS Impact	Accounting Treatments Under Ind AS	Implications for Financial Reporting	Citation
Banking	Enhanced disclosure of financial instruments and risk management practices.	Fair value measurement for financial instruments.	Improved transparency in financial risk reporting.	Kamath, 2007
Insurance	Requirement for more detailed disclosure on insurance contracts and risk exposure.	Measurement of insurance contracts based on the present value of future cash flows.	Increased clarity on insurance liabilities and asset valuation.	Shaikh & Karjaluo, 2015
Manufacturing	Impact on revenue recognition, especially for long-term contracts.	Implementation of the new revenue recognition model.	Changes in timing and amount of revenue recognized, affecting profitability and tax.	Singh et al., 2016
IT & Software	Significant changes in revenue recognition for licensing and post-sales activities.	Detailed guidance on recognizing revenue from contracts with customers.	More precise revenue recognition that aligns with delivery of services.	Zhou et al., 2023
Real Estate	Changes in the recognition of sales and leasing transactions.	Application of the control model to determine when to recognize revenue from sales of real estate.	Timing of revenue and profit recognition could shift, impacting reported financial performance.	Donner & Tellez, 2008
Telecommunications	Alters the way companies account for bundled services and contracts.	Allocation of transaction price to performance obligations in the contract.	Could lead to earlier revenue recognition for bundled contracts.	Tiron-Tudor et al., 2022
Retail	Impact on loyalty programs and return policies.	Accounting for customer loyalty programs and return liabilities.	Changes in how liabilities are measured and recognized, affecting expenses and liabilities.	De George et al., 2016
Pharmaceutical	Recognition and	Capitalization of	Could lead to	Boot &

s	measurement of research and development costs.	development costs if certain criteria are met.	increased asset values and different expense recognition patterns.	Thakor, 2009
Education	Treatment of government grants and funding.	Specific guidance on accounting for government grants related to income.	Affects the presentation of grants and may impact the timing of income recognition.	Bhatia & Mehrotra, 2016
Energy	Implications for asset retirement obligations and environmental provisions.	Recognition and measurement of decommissioning, restoration, and similar liabilities.	Could result in higher liabilities and expenses recognized earlier.	Bhattacharya et al., 1995
Automotive	Changes in lease accounting and revenue recognition from sales with financing elements.	New standards for lease accounting requiring recognition of lease assets and liabilities.	Impacts balance sheet presentation and could affect debt covenants.	Priya & Tom, 2023
Hospitality	Recognition of revenue from customer loyalty programs and breakage.	Estimation and recognition of breakage income in customer loyalty programs.	Could lead to earlier recognition of certain types of revenue.	Boot & Thakor, 2009

The sector-specific examination of Ind AS implications reveals a significant shift towards enhanced transparency, more detailed disclosures, and a greater emphasis on fair value measurement across sectors. Notably, sectors like banking and insurance witness a substantial enhancement in the disclosure of financial instruments, risk management practices, and insurance contracts. This shift not only increases the clarity on liabilities and asset valuation but also advances the transparency in financial risk reporting.

In sectors with intricate revenue recognition models such as manufacturing, IT & software, real estate, and telecommunications, Ind AS introduces new models that align revenue recognition more closely with the delivery of services or products. This change affects the timing and amount of revenue recognized, which in turn impacts profitability, tax planning, and reported financial performance. Particularly, the implementation of these standards could lead to earlier revenue recognition for bundled contracts in the telecommunications sector, altering how companies account for such transactions.

Moreover, the adoption of Ind AS significantly affects the accounting for leases, loyalty programs, return policies, research and development costs, and government grants across various sectors. These changes not only modify how liabilities and assets are measured and recognized but also could lead to increased asset values and different patterns of expense recognition. For instance, the pharmaceutical sector might see a rise in asset values due to the capitalization of development costs, provided certain criteria are met.

Additionally, sectors like energy and automotive are confronted with new challenges in accounting for asset retirement obligations, environmental provisions, and sales with financing elements. These standards necessitate a more rigorous recognition and measurement of liabilities, which could result in higher liabilities and expenses being recognized earlier than in previous accounting practices.

In conclusion, the integration of Ind AS across different sectors underscores a transformative impact on financial reporting in India. While it steers entities towards global financial reporting norms, it also demands meticulous attention to the sector-specific requirements and implications of these standards. This convergence fosters greater transparency, comparability, and reliability of financial statements, thereby enhancing the credibility and efficiency of financial markets both domestically and internationally. The ongoing adaptation to Ind AS across sectors will continue to evolve, as entities and

stakeholders alike navigate through the complexities and capitalize on the opportunities presented by global financial reporting convergence.

Recent Developments and Trends

The landscape of global financial reporting is undergoing a profound transformation, driven by technological advancements and the push towards standardization and transparency. This part of review paper delves into the nuances of this transition, focusing on the recent developments and trends that have shaped the trajectory of financial reporting, not just in India but across the globe. The evolution of financial reporting is emblematic of the broader trends in accounting and financial management, reflecting the increasing importance of technology, the demand for more robust and transparent reporting mechanisms, and the need for global harmonization in financial practices. Through an examination of various scholarly works, this paper aims to elucidate the impact of these developments on businesses, the accounting profession, and the global financial ecosystem at large.

Update	Description	Impact on Businesses	Technological Advancements	Citation
XBRL Adoption	XBRL has become a global standard for digital financial reporting, enhancing accuracy and efficiency.	Improves financial data transmission and analysis capabilities.	Facilitates automated data comparison and aggregation.	Liu, 2013
IFRS Integration	XBRL's integration with IFRS aims to improve the comparability and reliability of financial information.	Standardizes financial reporting across borders, aiding in global investment decisions.	Enhances the ability to transmit standardized financial data globally.	Shanmuganathan, 2016
Blockchain in Accounting	Blockchain technology is explored for its potential to revolutionize financial data management and transmission.	Could significantly enhance the accuracy and security of financial transactions.	Offers a decentralized ledger system for transparent and immutable record-keeping.	Mahdani et al., 2023
AI in Financial Reporting	Artificial intelligence is being integrated into financial reporting for predictive analysis and data mining.	Streamlines processes and offers advanced analytical capabilities for financial data.	Provides tools for more accurate forecasting and trend analysis.	Omar, 2023
Enhanced Disclosure Norms	Recent trends indicate a push towards more comprehensive and transparent disclosure requirements.	Increases accountability and transparency, potentially affecting investor relations and compliance costs.	Relies on advanced software and systems to manage and present complex disclosures.	Lander & Auger, 2008
Digitalization of Accounting	The shift towards digital accounting practices is accelerated by technological advancements.	Facilitates more efficient, real-time financial reporting and analysis.	Employs cloud-based solutions, AI, and blockchain for enhanced data management.	Fathy, 2023
Regulatory Challenges	Adapting to new technological	Necessitates updates to internal	Involves integrating new	Ayoub et al., 2019

	standards poses regulatory challenges and compliance costs.	control systems and compliance frameworks.	reporting technologies with existing regulatory requirements.	
Big Data in Accounting	The use of big data analytics in accounting is increasing, offering insights from large datasets.	Enhances decision-making with data-driven insights, impacting strategy and operational efficiency.	Utilizes data analytics tools and software for processing large volumes of financial data.	Teru et al., 2017
Impact on Audit Processes	Technological advancements are reshaping audit methodologies and processes.	Requires auditors to develop new skills and adapt to digital tools for audit efficiency.	Involves the use of AI, data analytics, and blockchain for auditing purposes.	Florin et al., 2013
Sustainability Reporting	There is an increasing trend towards incorporating sustainability and ESG reporting standards.	Affects how companies report on sustainability practices, with implications for stakeholder engagement.	Requires specialized software to track and report on sustainability metrics.	Beattie et al., 2004 Gupta, R., & Motwani, A. (2022)
Technological Training in Accounting	The need for technological proficiency among accounting professionals is growing.	Impacts hiring practices and professional development in the accounting industry.	Encourages ongoing education and training in new accounting technologies and standards.	Howieson, 2003
XBRL's Global Impact	XBRL is influencing financial reporting standards worldwide, improving the efficiency of data sharing.	Enhances the global comparability of financial information, facilitating international investment and analysis.	Supports the global adoption of a standardized digital reporting language.	Tanjung, 2021

The recent advancements in financial reporting and accounting, as outlined in the table, encapsulate a diverse range of technological and regulatory changes that are reshaping the industry. The adoption of XBRL (eXtensible Business Reporting Language) and its integration with IFRS underline a global move towards digital standardization, offering enhanced comparability and reliability of financial information. This digital leap, accompanied by the exploration of blockchain technology and the integration of artificial intelligence (AI) in financial reporting, signifies a radical shift towards more efficient, secure, and insightful financial management practices.

The implications of these developments are multifaceted, affecting businesses in several ways. On one hand, there is a clear trend towards improved efficiency, accuracy, and security in financial transactions and reporting, facilitated by technological advancements. On the other hand, these changes bring about regulatory challenges and the need for significant investment in technological infrastructure and training. The increasing emphasis on enhanced disclosure norms, sustainability reporting, and the utilization of big data analytics in accounting further reflects a broader shift towards transparency, accountability, and data-driven decision-making in financial practices.

Moreover, the impact of these advancements is not limited to businesses alone. The accounting profession is at a crossroads, with a growing need for professionals to adapt to new technologies and

standards. This evolution reflects a broader educational and professional development imperative, highlighting the need for ongoing training in digital accounting practices, regulatory compliance, and the ethical dimensions of financial reporting.

In conclusion, the integration of Ind AS within the global financial reporting framework, alongside the adoption of technological innovations, marks a pivotal moment in the evolution of financial reporting. These developments reflect a broader trend towards a more integrated, transparent, and technologically advanced global financial ecosystem. The implications of these trends are profound, affecting businesses, regulatory bodies, and the accounting profession at large. As we move forward, the challenge will lie in balancing the benefits of technological advancements with the need for ethical standards, regulatory compliance, and the professional development of accountants to navigate this new landscape effectively.

Conclusion and Implications

The evolution and recent developments in Indian Accounting Standards (Ind AS) underscore a transformative journey towards aligning with global accounting practices, primarily through convergence with the International Financial Reporting Standards (IFRS). This synthesis not only highlights the key milestones in the adoption and adaptation of Ind AS but also delves into the broader implications for various stakeholders, including investors, analysts, and auditors.

The journey of Ind AS reflects a strategic endeavor to enhance the transparency, comparability, and reliability of financial reporting in India. Beginning with the decision to converge with IFRS, the phased implementation of Ind AS since 2015 marked a pivotal shift for Indian companies, transitioning from local GAAP to globally recognized standards (Gupta & Pandey, 2019). This move aimed at facilitating cross-border financial reporting and investment, thereby integrating Indian businesses into the global market more seamlessly.

Recent advancements in Ind AS have been characterized by the integration of technological innovations such as XBRL for digital reporting, the exploration of blockchain for enhancing the reliability of financial transactions, and the consideration of AI in financial analysis and auditing processes. These technological strides aim at refining the efficiency and accuracy of financial reporting and auditing, reflecting a forward-looking perspective in accounting standards (Mahdani et al., 2023; Omar, 2023).

Implications for Stakeholders

- **Investors:** The convergence with IFRS through Ind AS has significantly benefited investors by providing a more transparent, reliable, and comparable financial reporting framework. This facilitates better investment decisions, particularly in a global context, where investors can now compare the financial health of Indian companies with their international counterparts more effectively (Verma, 2023).
- **Analysts:** For financial analysts, the adoption of Ind AS has necessitated an adaptation in their evaluation methodologies. The enhanced disclosure requirements and the shift towards fair value measurement provide analysts with a deeper insight into a company's financial position, thereby enabling more accurate and comprehensive analysis (Wang & Miraj, 2018).
- **Auditors:** The transition to Ind AS poses both challenges and opportunities for auditors. While it demands an upskilling in understanding and applying the new standards, it also offers a chance to leverage emerging technologies like XBRL and blockchain for auditing purposes. This can significantly enhance the efficiency and effectiveness of audit processes, marking a shift towards more innovative and technology-driven auditing practices (Lew, 2019).
- **Regulators:** The implementation of Ind AS has underscored the need for continuous monitoring and regulation to ensure compliance with the new standards. For regulators, this involves updating regulatory frameworks to incorporate these standards and developing mechanisms to oversee their adherence. The evolution of Ind AS necessitates a dynamic regulatory approach to accommodate ongoing changes in accounting practices (Baker & Barbu, 2007).
- **Corporate Management:** For the management of companies, the transition to Ind AS has highlighted the importance of internal control systems and governance practices that align with the new reporting requirements. This involves a strategic reevaluation of accounting policies, internal reporting mechanisms, and financial communication strategies to ensure compliance and leverage the benefits of Ind AS for strategic decision-making and investor relations (Hopper, Lassou, & Soobaroyen, 2017).

In conclusion, the evolution and recent developments in Ind AS represent a significant step forward in aligning Indian accounting practices with global standards. This transition not only enhances the quality and comparability of financial reporting in India but also has far-reaching implications for various stakeholders. By embracing technological advancements and adapting to the changing landscape of financial reporting, stakeholders can navigate the complexities of Ind AS more effectively, contributing to a more transparent, reliable, and globally integrated financial ecosystem.

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A STUDY ON USAGE OF DIGITAL PAYMENT MODES ON E- COMMERCE PLATFORMS BY THE CUSTOMERS OF PATNA

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ABSTRACT

The technological era changed the lives of common man. It changed the way of doing businesses for businessmen and shopping for customers. It provides opportunities to small businesses to start their business with low investment and wide customer reach. On the other hand, for consumers e-shopping is convenient, time saving and safe to purchase quality products at reasonable time on time. Moreover, the revolution in the financial sector results in the availability of online payment modes such as card payment, UPI, e- wallet and so on. COVID-19 played a catalysing role in the growth of digital payments and other online transactions. This study is based on 100 sample respondents from Patna town who use a digital payment system on online shopping apps. This study is conducted to know the customers' perception regarding the use of digital payment systems on e- commerce platforms, to understand the challenges faced by the customers and an overview on growth of digital payment system and e- commerce and at last will provide some suggestions.

KEYWORDS: E- Commerce Platform, E- Shopping, Digital Payment System, Customer Satisfaction, Confidence.

Introduction

The revolution in the technological field has changed our life drastically. It changes experiences of online shopping and online payments. Consequently, the e- commerce industry is growing. When e-shopping was introduced, it was based on Cash on Delivery (COD) but now, due to technological growth in the field of finance various options of payments are available to improve customers' experience.

E- commerce or e- shopping refers to undertaking business through online mode or over the internet. In other words, buying and selling goods and services over the internet is called e- commerce and the payment in exchange of goods and services over the internet is called e- payment system is known as digital payment system. For instance, there are various e- commerce platforms such as Amazon, Flipkart, Nykaa, Purple etc. On the other hand, cards, e-wallet, Unified Payment Interface (UPI), mobile banking and so on are some options for digital payments.

Traditionally, cash, cheques, demand draft are some offline modes of payment which are still in use and cash is still the most popular mode of payment. Digital modes of payment reduce the cost of printing currency, curb black money, counterfeit currency from the economy and lots of trees. Digital payment system is regarded as the foundation of e- commerce and it is one of the most vital aspects and contributes towards the GDP of the country.

Growth of Digital Payment System and e- Commerce Platforms

The demonetization policy by the government of India has accelerated the development of the ecosystem for digital payment in India. Before demonetization, only 10% of transactions were digital

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payments. In November 2016, honourable Prime Minister Shri. Narendra Modi announced demonetization of ₹500 and ₹ 1000 banknotes of Gandhi series which were 86% of circulated cash in the economy.

This step of the government was considered as a strategic movement for the adoption and promotion of the digital ecosystem in India. In 2019, due to COVID- 19, the tremendous growth of digital payment solutions had been accelerated. There are a number of factors involved in the growth of digital payment solutions. There are a number of factors involved in the growth of the digital economy in India. Apart from government push, mobile penetration and internet penetration also contributed towards growth of the digital economy.

Figure 1: Total number of digital transactions during last five years

Financial Year	Total Number of Digital Transactions (₹in Crore)
2017-2018	2071
2018-2019	3134
2019-2020	4572
2020-2021	5554
2021-2022	8840

Source: RBI, NPCI and banks (till 31st December,2022)

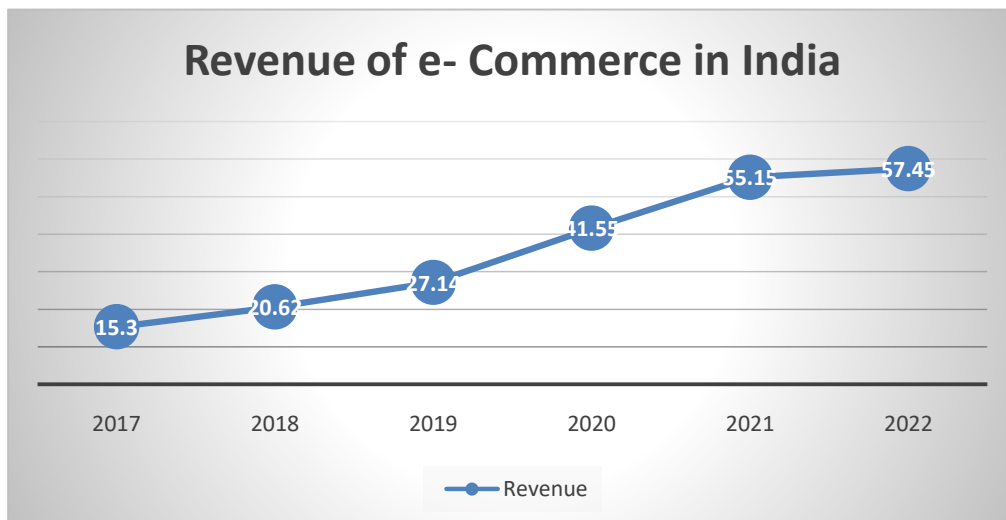
Figure 2: Total value of digital transactions during last five years

Financial Year	Value of Digital Transactions
2017-2018	1962
2018-2019	2482
2019-2020	2953
2020-2021	3000
2021-2022	2050

Source: RBI, NPCI and banks(till 31st December,2022)

E-Commerce also acts as a driving force to promote digital payment systems as it offers a number of modes of digital payment such as UPI, mobile wallets, card payments and so on. The market of e- commerce is growing and is expected to grow in the future. The e-commerce platform gained its popularity due to convenience, wide variety and reasonable price. It provides opportunities to small businesses to reach a global audience also. The use of digital payment systems on e- Commerce platforms has changed customers' experience of shopping and the way of doing business for businessmen.

Figure 3: Percentage growth of revenue of e- commerce in India



Source: Statistical, 2023

Review of Literature

(Karamjeet & Ashutosh, 2015) in their article titled "E- payment on E- commerce in India" conducted study on 200 respondents through interview method found majority of people believe e- payment system is better than cash payment but at the same time, they think it is not reliable. This study also revealed that there are various factors that affect the usage of payment system on e-commerce such as consumer preference, ease of use, cost, industry agreements, non- refutability, accessibility, security authentication, reliability and public policy.

(Kowsalya, et. al, 2017) in their article named, "A Study on the Perception of Customers towards e- commerce and e- payments in local survey" studied 100 respondents and found 80% users are more comfortable in using debit and credit card. Quality customer service, greater reach, time saving, customer loyalty, easy access to information, 24 hours access, reduce paper work affects the customers perception towards e- payments and e- commerce. Moreover, it is also said that the use of cards will reduce in future and mobile technology and internet industry will grow.

(Khan & Jain, 2018) in their article titled, "A Study on Usage of e- payments for Sustainable Growth of Online Business" revealed after studying 100 respondents that people are using e- payment system because they find it convenient. Family, friends and relatives influenced most of the people to adopt e- payments. At last, this study, concluded that e- payment system will contribute towards the sustainable growth of the online business.

Objectives of the Study

Following are some objectives of the study:

- To know whether the customers are confident to use digital payment modes on e- commerce platforms.
- To know the growth of digital payments and e- commerce business in India.
- To identify the challenges of shopping on e- commerce platforms.

Hypothesis

H₀: Customers have no confidence in the digital payment modes on e- commerce platforms.

H₁: Customers have confidence in the digital payment modes on e- commerce platforms.

Research Methodology

Data Collection and sample size

This study is based on both primary and secondary data. It included responses of 100 customers of Patna. This study is conducted through survey questionnaire. Questionnaire was divided into two parts first part belongs to demographical information and second part included ten questions related to the study and one question about difficulty or changes regarding e- commerce and online payment was asked.

Sampling Technique

Simple random sampling method and convenient sampling method.

Statistical Tool

One way ANOVA test is calculated on MS Excel to know the confidence of customers in digital payment systems on e- commerce platforms.

Data Analysis and Interpretation

ANOVA: Single Factor

Summary						
Groups	Count	Sum	Average	Variance		
Column 1	5	282	56.4	785.8		
Column 2	5	218	43.6	785.8		

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	409.6	1	409.6	0.521252	0.490869	5.317655
Within Groups	6286.4	8	785.8			
Total	6696	9				

Interpretation: The above table shows p value =0.490869 which is more than 0.05 which means values are not statistically significant. Therefore, null hypothesis is accepted and it can be concluded that customers have no confidence on the use of digital payment modes on e- commerce platform.

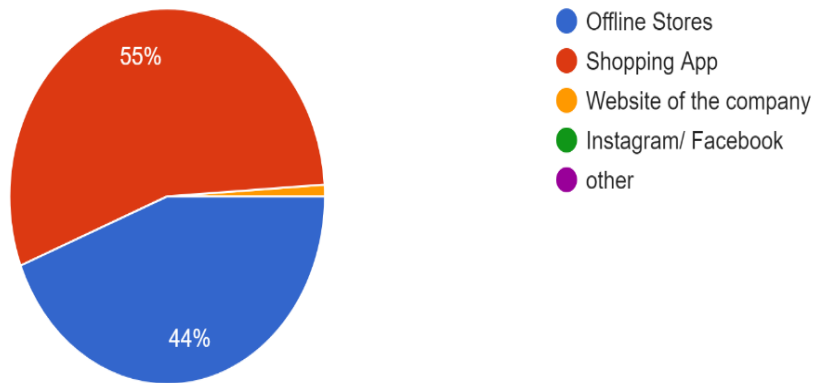
Findings of the Study

Following are some major findings of the study:

Chart 1: Which of the following is most preferred shopping platform for you?

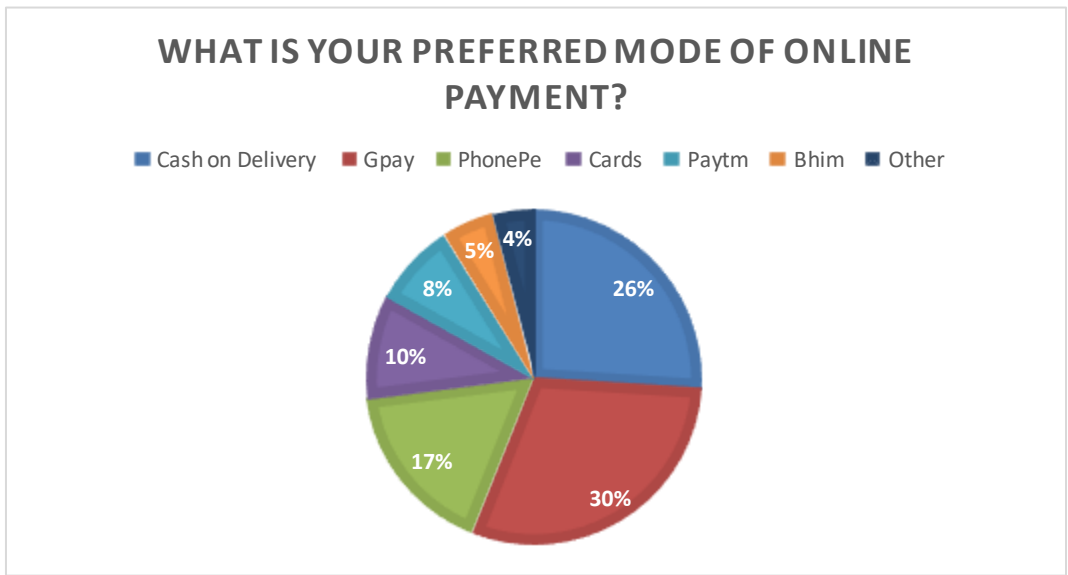
Which of the following is most preferred shopping platform for you?

100 responses



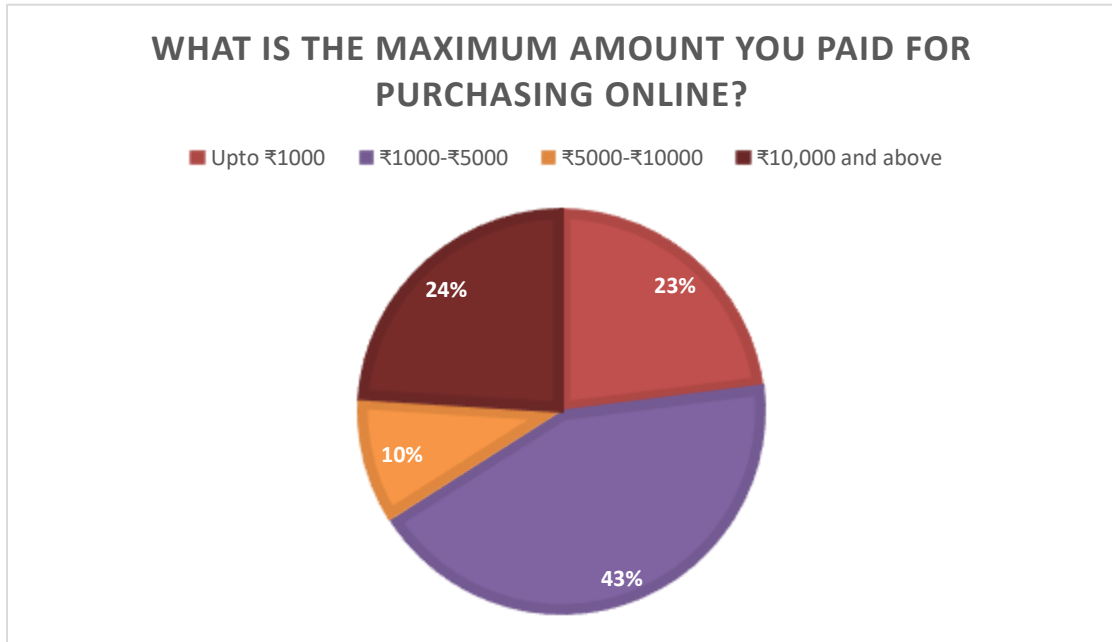
From the above pie chart, we can say, in this technological era, people would like to prefer online shopping through shopping app. But still people are confident about purchasing offline i.e., 44%

Chart 2: What is your preferred mode of online payment?



On basis of above observation, the most preferred payment mode is Gpay, then cash on delivery, PhonePe, cards payment, Paytm and so on. It shows people are using online payment modes but cash on delivery is the one of the popular mods.

Chart 3: What is the maximum amount you paid for purchasing online?

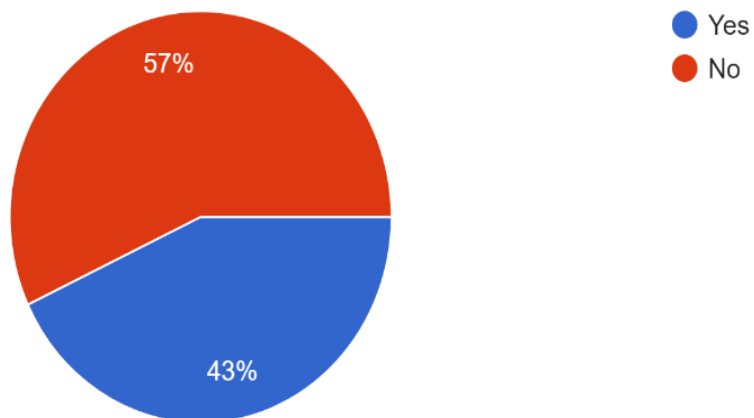


The above observation is regarding maximum amount paid by the customers shows their confidence level on e-commerce platforms for digital payments. Only 24% respondents have high confidence over e-commerce platforms for payments and 23% customers spent upto ₹1000. Moreover, majority of respondents i.e., 43% maximum purchases between ₹1000- ₹5000. Hence, it shows people are still not very confident about online payment for online shopping.

Chart 4: Do you save card details on shopping app or websites?

Do you save your card details on shopping app or websites?

100 responses

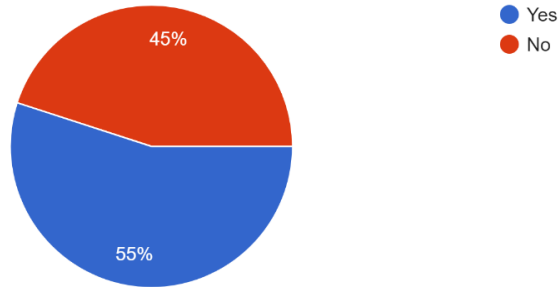


The above pie chart shows, 57% people do not save their card details on e-commerce platforms which shows low confidence over e-commerce websites and they are more concerned about security and privacy of card details.

Chart 5: Do you hesitate to share OTP for delivery verification?

Do you hesitate to share OTP for delivery verification ?

100 responses

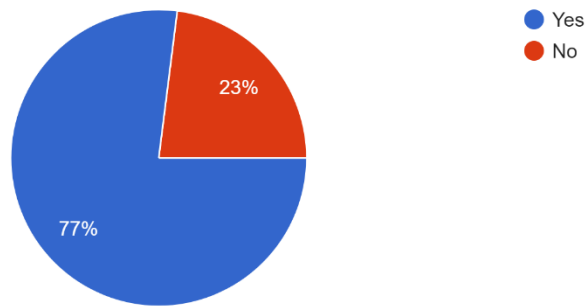


This diagram depicts 55% people hesitate in sharing OTP for delivery verification which shows they are not confident about sharing card details on e-commerce platforms. On the other side, 45% people have confidence on e- shopping platforms and they feel it secure.

Chart 6: Do you have fear of losing money or being scammed while online shopping?

Do you have fear of losing money or being scammed while online shopping?

100 responses

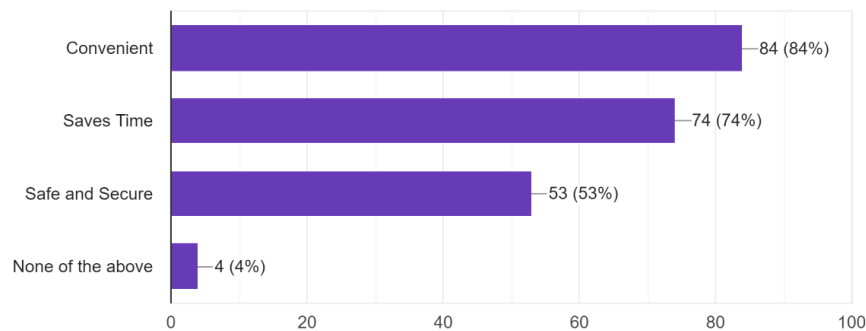


The above chart shows majority of respondents have fear of losing money i.e., 77% because of increasing cases of scam. Due to this, it is hard for them to believe on e- commerce platforms and digital payments.

Chart 7: The use of digital payment mode on e- commerce platform is:

The use of digital payment mode on e- commerce platform is :

100 responses

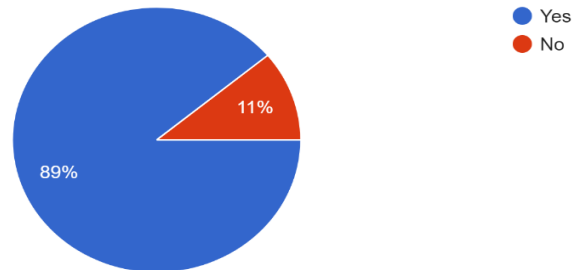


Above graph shows the perception of customers about payment on e-commerce platforms. 84% respondents believe it convenient, 74% believes it saves time and 53% thinks it is safe and secure.

Chart 8: Would you like to continue with digital payment modes while shopping online?

Would you like to continue with digital payment modes while shopping online ?

100 responses



In the above presentation, people are asked whether they want to continue digital payment modes on e-commerce platforms, 89% respondents answered positively that they would like to continue digital payments on e-commerce websites due to convenience, saves time and security.

Challenges or Problems of E- Commerce Platforms

On the basis of response collected in form of open-ended questions from the customers of Patna town regarding the use of digital payment mode or use of e-commerce platform, it is concluded:

- They face declining payment due to server issues.
- They have fear of fraud, scam and data leak.
- Sometimes, they receive wrong and damaged products due to poor packaging or involvement of unauthorised intermediaries who exchange the product with garbage. Due to this, many people start losing their trust on online payments. It leads to inconvenience and wastage of time.
- Many people have accepted they were directed to fake websites through links for e-shopping and lose money there.
- Some respondents reported that they lost money while sharing OTP for delivery verification.

Suggestions

- Issues like declining payment or amount deducted but payment failed are very common and there is nothing to worry, concern platform should try to create awareness about this.
- People have less confidence while making payment on e-shopping platforms due to fear of fraud, scam or data leak. To overcome such fear, e-commerce companies or government should take initiative to create awareness about scams or fraud. On the other hand, customers must not allow to save card details on that platform and read terms and conditions before agreeing on them.
- For customers' satisfaction the correct product must be delivered but some miscreants between seller and buyer exchange those products with garbage. Companies must have a grievance cell for such complaints and random inspection must be undertaken to catch them.
- Customers must be conscious that they are shopping through genuine websites and never click unknown links. In the name of "Product Delivery Verification Code" is suggested to provide by the company instead of OTP. So that it leads less confusion and they will be able to make proper distinction between banking transaction verification and delivery verification.
- As Artificial Intelligence (AI) is a revolutionary change in the industry, the introduction of AI i.e., chatbot in e-commerce enables businesses to understand customer behaviour and improvement of shopping experience of customers. It will improve the interaction and experience of customers.

Conclusion

The use of digital payment modes for e- shopping is convenient, saves lots of time and is secure. Moreover, it provides a wide variety of options of good quality at reasonable prices for customers. As per the study conducted, 82% respondents accepted that they are using online payment for e-shopping because of attractive offers, discounts and coupons. But they do not have enough confidence on usage of digital payment on e-commerce platforms. In order to improve customers' satisfaction, more attractive offers should be provided by companies. And advertisements to build confidence, awareness regarding fraud, and scam must be undertaken by the government or company. It is observed that there is significant growth in digital payment systems and e-commerce platforms which provides an opportunity to multiple start-ups and emergence of fintech companies. Consequently, smartphone and internet penetration will continue to grow. Therefore, it can be said the future of digital payment and e-commerce businesses is bright and will continue to grow in the future.

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