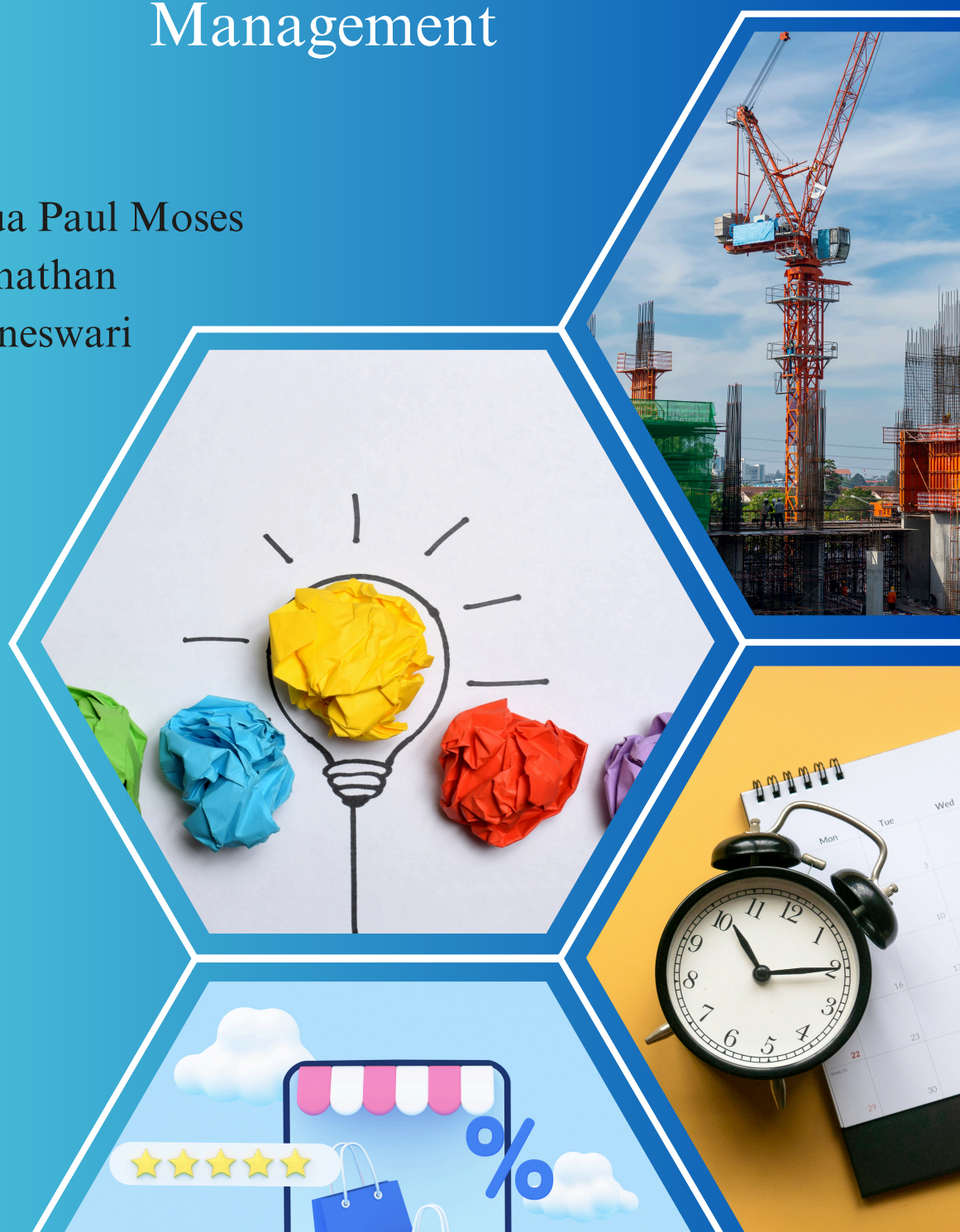**2025 | March**

Dr.BGR
Publications

Industrial Reinforcement and Emerging Innovation in Business and Management

Editors

Dr. L.Joshua Paul Moses
Dr. S.Selvanathan
A.N.Bhuvaneswari

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Preface

Businesses worldwide are experiencing disruptions in their sectors due to emerging technologies that lead to innovation in business models. The business sector is always changing, with new technologies acting as both the catalyst and the result of this evolution. During the era of the digital revolution, advancements in technology are evolving at a remarkable speed, influencing various industries and careers. Nevertheless, to benefit from this progression, it is crucial to grasp the trends and techniques involved and to foresee future developments.

The aim of this E-ISSN Journal entitled *International Journal of Business and Economics Research (IJBER)* to publish special edition titled **"Industrial Reinforcement and Emerging Innovation in Business and Management"** is to deliver an extensive and thorough examination of Industrial Reinforcement and New Innovations in Business and Management that will transform the commercial sector in the upcoming years. For the purpose of this E-ISSN Journal, recent research and expert analyses will be utilized to clarify each technology, exploring its features, possible uses, and impacts on companies.

Our sincere gratitude goes to the paper contributors, for sharing their knowledge and expertise in the publication of this E-ISSN Journal. Hope this E-ISSN Journal will bring the Innovation in Business and Management and also make attractive and presentable to the youth workforce.

Editors
Dr. L. Joshua Paul Moses
Dr. S.Selvanathan
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Impacts of AI in Education Systems - Perception of People

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Abstract

The influence of AI in the future of education reflects a changing landscape in which technology is improving teaching strategies, enhancing student experiences, and equipping people to succeed in a world that is becoming digitally connected and networked every day. Most of the time, it's considered by the government, society, educational institutions, and the general public. The primary objective of this study is to ask the opinions of fifty people in Theni City through a questionnaire on how individuals see the effects of artificial intelligence on the current education system. SPSS and a five-point Likert scale will be used. The primary objective of this research is to explore the impacts of AI on education systems from the viewpoint of people.

Keywords: AI, People, Perception, Students experience

Introduction

Artificial Intelligence (AI) is large subject computer science devoted to the development of intelligent computers capable of doing tasks that would typically need human intelligence. Ai Programming focuses on three cognitive processes: Learning, reasoning, and self-correction.

The main aim of this study the people perceptions towards what are the impacts of AI in current education system. The researcher was carried out with 50 respondents and the likert scale five-point scaling method used with SPSS. And this method used for the calculation of one way ANOVA. The concluding observations are that there is no relationship between the dependent variables and Independent variables. The most of the considering with sum related factors of Government, Society, Education Institution and General reasons.

Statement of Problem

Nowadays, people are more interested in the applications of artificial intelligence. Especially now, the changes in artificial intelligence are mostly expected in the field of education. The impact of artificial intelligence on education and students is multifaceted, revolutionizing their educational journey. However, the role of artificial intelligence in education is diminishing. The purpose of this research paper is to find out whether society, government, quality of education, or other reasons are the reasons for the limited amount of artificial intelligence offered to students.

Objectives of this Study

- To understand Education system on impacts of AI in current situation
- To know about the future impacts of AI in future education systems
- To analyze the people perception towards the impacts of AI in Education system
- To conclude suitable suggestions based on the findings.

Hypotheses of the Study

H01: There is no significant relationship between dependent and independent variables which are age of the respondents and people perception towards the impacts of AI in Education system.

Methodology

This is a descriptive and analytical study based on both primary and secondary data.

Dependent variables: Government, Society, Education Institution and General reasons

Independent variables: Demographic Economic Profile of the Respondents

Statistical Tools: One way ANOVA

Table 1.1

Impacts of Education system with One way ANOVA

Factors	Variables	F-Value	Sig.
Government	Government's casual approach	0.163	0.921
	Financial exchequer	0.534	0.661
	Sustained functional electricity supply	3.478	0.023

Society	Socio-religious taboos in adapting AI	2.656	0.059
	Socio-economic back ground of learners	2.656	0.059
	No dedicated policy on AI at national level	2.745	0.054
	Potential threat to human civilization and race	3.595	0.020
	Potential encouragement to materialistic society	0.106	0.956
	Arts and Humanities subject at the risk of fading away	1.494	0.229
	No chance of guidance and counseling	3.595	0.020
Education	Schools' inability to adapt the AI driven education system	2.631	0.61
	Poor infrastructures at every ladder of education	1.772	0.166
	AI trained staff	1.128	0.347
	No physical involvement of teachers	3.939	0.014
	Public and Private; Urban and Rural gap among the students' approach to AI	2.403	0.080
	Sharp cut in employment opportunity for teachers and other staff	3.143	0.034
	Issues of correct programming of AI	0.438	0.727
	Possibility of centralized control of entire education system	1.448	.241
	Staff and Students' at potential health risk	1.694	.181
General Reason	Sustained functional internet connectivity	3.150	0.034
	Possibility to deterioration of value system	1.632	0.195
	Threat to cyber security	3.595	0.20
	Issues of correct programming of AI	2.631	0.061
	Data management issues	1.772	.166
	Information and data based education than knowledge based	0.438	0.727

Source: Computed data

Note: * denotes significant result ** denotes insignificant result

- ➢ One-Way ANOVA Technique has been applied to find out the significant between the age and the perceptions of the respondents towards impacts of AI in Education system. It is value that the p is insignificant between age and the Government factors viz Government's casual approach (0.921), Financial exchequer (0.661), Sustained functional electricity supply (0.023)

- ➢ One-Way ANOVA Technique has been applied to find out the significant between the age and the perceptions of the respondents towards impacts of AI in Education system. It is value that the p is insignificant between age and the Society factors viz Socio-religious taboos in adapting AI (0.059), Socio-economic back ground of learners (0.059), No dedicated policy on AI at national level (0.054), Potential threat to human civilization and race (0.020), Potential encouragement to materialistic society (0.956), Arts and Humanities subject at the risk of fading away (0.229), No chance of guidance and counseling (0.020)

➤ One-Way ANOVA Technique has been applied to find out the significant between the age and the perceptions of the respondents towards impacts of AI in Education system. It is value that the p is insignificant between age and the Education factors viz Schools' inability to adapt the AI driven education system(0.61), Poor infrastructures at every ladder of education(0.166), AI trained staff (0.347),No physical involvement of teachers(0.014), Public and Private; Urban and Rural gap among the students approach to AI(0.080), Sharp cut in employment opportunity for teachers and other staff(0.034),Issues of correct programming of AI(0.727), Possibility of centralized control of entire education system(.241), Staff and Students' at potential health risk(.181)

➤ One-Way ANOVA Technique has been applied to find out the significant between the age and the perceptions of the respondents towards impacts of AI in Education system. It is value that the p is insignificant between age and the General reasons factors viz Sustained functional internet connectivity (0.034), Possibility to deterioration of value system (0.195), Threat to cyber security (0.20), Issues of correct programming of AI (0.061), Data management issues (.166), Information and data-based education than knowledge based (0.727)

Findings

- It is value that the p is insignificant between the age and the perceptions of the respondents towards impacts of AI in Education system of Government factors viz., Government's casual approach (0.921), Financial exchequer (0.661)

- It is value that the p is significant between the age and the perceptions of the respondents towards impacts of AI in Education system of Government factors viz., Sustained functional electricity supply (0.023)

- It is value that the p is insignificant between the age and the perceptions of the respondents towards impacts of AI in Education system of Society factors viz., Socio-religious taboos in adapting AI (0.059), Socio-economic back ground of learners (0.059), No dedicated policy on AI at national level (0.054), Potential encouragement to materialistic society (0.956), Arts and Humanities subject at the risk of fading away (0.229).

- It is value that the p is significant between the age and the perceptions of the respondents towards impacts of AI in Education system of Society factors viz., Potential threat to human civilization and race (0.020), No chance of guidance and counseling (0.020)

- It is value that the p is insignificant between the age and the perceptions of the respondents towards impacts of AI in Education system of Education factors viz., Schools' inability to adapt the AI driven education system(0.61), Poor infrastructures at every ladder of education(0.166), AI trained staff (0.347), Issues of correct programming of AI(0.727), Possibility of centralized control of entire education system(.241), Staff and Students' at potential health risk(.181)

- It is value that the p is significant between the age and the perceptions of the respondents towards impacts of AI in Education system of Education factors viz., No physical involvement of teachers (0.014), Sharp cut in employment opportunity for teachers and other staff (0.034)

- It is value that the p is insignificant between the age and the perceptions of the respondents towards impacts of AI in Education system of General Reasons factors viz., Possibility to deterioration of value system (0.195), Threat to cyber security (0.20), Issues of correct programming of AI (0.061), Data management issues (.166), Information and data based education than knowledge based (0.727)

➢ It is value that the p is significant between the age and the perceptions of the respondents towards impacts of AI in Education system of General Reasons factors viz Sustained functional internet connectivity (0.034)

Suggestion

➢ The government ought to step up and offer pupils reliable, functional power for their growth.

➢ Opportunities for the best advice and direction available for human civilization and the race should be made available.

➢ Instructors shouldn't work with their entire body involved.

➢ For teachers and other staff members, it provides the majority of work options.

➢ It is necessary to have a reliable, functional internet connection.

Conclusion

However, the overall influence of Artificial Intelligence on education proposals a additional customized, flexible, and well-organized learning knowledge. AI's participation in creating the future of education reflects a changing atmosphere as tech improves teaching methods, improves student experiences, and prepares people for success in an increasingly digital and linked world. AI has the potential to significantly contribute to the achievement of the SDGs. AI can assist in enhancing

access to education, healthcare, and clean water while simultaneously combating climate change, poverty, and hunger. Still, it is critical to guarantee that Artificial Intelligence is created and used lawfully and ethically to enable avoiding surprising negative consequences. This is research in the study of people's perceptions using the impacts of Artificial Intelligence in the education system.

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Opinion of Bank Employees towards E-HRM Practices of in Virudhunagar District

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Abstract

Through human resource management of an organization, the ability, skills, knowledge etc., of the employees can be utilized again and again. The process of management that manages and develops the human beings is the vital part of human resource. Electronic Human Resource Management (E-HRM) is the use of technology to manage employees records and develop human resources (HR) processes, including role analysis, recruiting, selection, training, performance management, and compensation. E-HRM includes the process and transmission of digitized information of the human resource. It helps in the easy interactions between the employer and the employees. This article highlights the E-HRM practices that are followed in the banking sector. The opinion of the bank employees towards the E-HRM practices are measured with the help of ranking technique, and the data was further analysed with the help of garret ranking technique.

Introduction

In India, banking is the foundation for the country's economic progress. With the growth of technology and consideration of people's demands, major changes in the banking system and administration have occurred over time. The banking business is in charge of a country's finances, including cash and credit. Banks are institutions that accept deposits and extend credit to individuals and businesses, and they play an important role in a country's economic stability. A country's banking system is an important pillar that supports the financial system of the country's economy. The mobilisation of deposits and the dispensing of credit to diverse sectors of the economy are the primary functions of banks in a financial system. India's current, complex financial structure has developed over several decades.

Electronic Human Resource Management

Electronic Human Resource Management (E-HRM) is the use of technology to manage employees" records and develop human resources (HR) processes including role analysis, recruiting, selection, training, performance management, and compensation. E-HRM includes the process and transmission of digitized information of the human resource. It helps in the easy interactions between the employer and the employees. In other words, through the guided help of web technology-based networks, E-HRM is a way of enforcing HRM methods, policies and practices in an enterprise. e-HR refers to the strategic application of web-based technology to HR-related systems, which, when combined with other organizational reforms, will result in broader access to HR data and additional chances for data management. e-HRM is a web-based technology which gives online solution to human resource management through information technology. Digitalization of information utilized in Human Resource Management, such as text and sound information, from one device to another is referred to as e-HRM. The phrase „e-HR" refers to the role of technology in HR Managers and staff in human resource management conducts daily activities such as payroll, training and development, performance appraisal, and learning programs, among others.

Review of Literature

Anchal Rastogi and Garima Srivastava (2017), studied the "E-HRM: Emerging HR Practices in Private Banks". This study is carried out in Lucknow City. The data are collected from the employees of HDFC, ICICI and IndusInd Bank using convenience sampling method. The alternate hypothesis is accepted that E-HRM plays a significant role in improving HR activities. It is concluded that the duplicacy of work and workload of the administration can be reduced by implementing E-HRM at all levels.

Hassan. N. Rawash and Serdar Saydam (2012), in their paper "The Impact of Electronic Human Resource Management on Organization's Market Share: An Empirical Study on the Housing Bank for Trade and Finance in Jordan" discussed about the importance of electronic management in the human resource management of housing bank for trade and finance in Jordan. Hypotheses are framed. Simple Linear Regression analysis is used to test the hypotheses. The study found that electronic management was a integrating factor between human resource management and organizational performance.

Kannan P and Mohana Priya D (2016), made a study on "Impact of E-HRM in Private Sector Banks of Coimbatore District". In this study simple random sampling method is used to identify the sample respondents in the Coimbatore district. Percentage analysis, Chi square test and t-test were used for the analyses purpose. Hypothesis is framed that there is no significant relationship between E-HRM application serve as self-service and level of expertise in HR using E-HRM. T-test is used to test the hypothesis and the results revealed that the calculated value is more than the table value the hypothesis is accepted. It was suggested that the optimum use of E-HRM can be updated on routine basis.

Preeti Bharti (2015) attempt to study the "Impact of E-HRM system on organizational Performance: A Case study on banking sector". The study intends to find the cause-and-effect relationship. Data are collected from 100 respondents from two public and private sector banks namely CBI, SBI, ICICI and HDFC. Hypotheses are framed and tested using chi square test. The results interpreted that there is exists a significant positive relation with the employee performance. The study found that both the public and private sector were at higher level in the banks of the study area.

Shaumya K and Anton ArulrajahA (2018), studied about the "The Impact of Electronic Human Resource Management (e-HRM) Practices on Bank's Environmental Performance". The study was undertaken in the Batticaloa region of Sri Lanka. The primary data for the study were collected using self administrated questionnaire. Data were collected from 155 employees of selected commercial banks in the study area. Disproportionate Stratified Sampling method was used to identify the sample respondents. The researcher used multiple regression technique in which it was found that communication have a positive and significant impact on employee performance.

Statement of the Problem

E-HRM may be the most powerful driving force for achieving organizational effectiveness. IT continues to impact the HRM function. For a decade now, digital possibilities are challenging the traditional ways of delivering HRM services within business. Banking Sector plays a vital role in the economic development of our country. It has become highly competitive sector in India. The banking organizations, since the beginning of this decade, have been facing greater challenges in terms of technological revolution, service diversification and global banking. The banking sector in India is growing vastly nowadays. In order to be a successful banker, each and every banks must improve the

HRM practices. Banks are adopting the electronic human resource management techniques with the help of which banks are recruiting, selecting, providing training facilities and doing performance appraisal. Virudhunagar district comprises of many industrial towns, therefore the banking transactions will be huge in number. Hence the researcher intends to study the Electronic Human Resource Management Practices of Scheduled Commercial banks in the Virudhunagar District.

Objectives of the Study

In order to ensure the above research question the following objectives are framed by the researcher.

1. To study the Electronic Human Resource Practices adopted by the banks in the study area.
2. To offer suitable suggestions to the banks for improving the E-HRM practices based on the findings of the study.

Methodology

This study is both descriptive and analytical in nature. It covers both primary data and secondary data. The researcher has collected the primary data from the bank employees in the Virudhunagar district and the secondary data from the various national and international journals, standard books, magazines, websites and so on.

Sampling Design

The article covers a sample of 180 bank employees in the study area with the help of convenient sampling method.

Analysis Findings of the Research

E-HRM Practices

The respondents are asked to rank their responses about the E-HRM practices. To identify the most effective E-HRM Practices Garret's ranking test is used. Based on the E-HRM practices of the banks the following classification is made

Table 1

E-HRM Practices of Banks

S. No.	E-HRM Practices	Rank							Total
		I	II	III	IV	V	VI	VII	
1	E – Application	22	30	10	26	52	8	32	**180**
2	E – Recruitment	32	41	36	15	22	24	10	**180**
3	E – Selection	26	28	34	42	10	18	22	**180**
4	E – Performance Management	34	39	26	24	18	22	17	**180**
5	E – Learning	58	42	22	18	20	14	6	**180**
6	E – Compensation	22	35	28	14	22	25	34	**180**
7	E – Employee Profile	46	32	29	21	25	11	16	**180**
	Total	180	180	180	180	180	180	180	

Source: Primary Data

Garrett Scores

The Garrett ranks are calculated by using appropriate Garrett ranking formula. First, the percent positions are calculated by using appropriate Garrett ranking formula. Then based on the E-HRM practices, the Garrett values are ascertained. The Garrett value and scores of each E-HRM practices are multiplied to find out the Garrett scores for each sources. Finally, by adding each row, the total Garrett scores have been obtained.

Percent position = 100 (Rij - 0.5)/Nj

Rij = Rank given for ith item by the jth sample respondents

Nij = Total rank given by the jth sample respondents

Table 2

Garrett Scores – Percent Position and Garrett Value

S.No	100(Rij – 0.5)/Nj	Calculated value	Garrett value
1.	100 (1 – 0.5)/7	7.14	79
2.	100 (2 – 0.5)/7	21.43	66
3.	100 (3 – 0.5)/7	35.71	57
4.	100 (4 – 0.5)/7	50.00	50
5.	100 (5 – 0.5)/7	64.29	43
6.	100 (6 – 0.5)/7	78.57	34
7.	100 (7 – 0.5)/7	92.86	21

Source: Computed data

Table 3

Calculation of Garrett score

S. No	E-HRM practices	Rank							Total
		I	II	III	IV	V	VI	VII	
1.	E – Application	22*79 =1738	30*66 =1980	10*57 =570	26*50 =1300	52*43 =2236	8*34 =272	32*21 =672	**8768**
2.	E – Recruitment	46*79 =3634	32*66 =2112	29*57 =1653	21*50 =1050	14*43 =602	11*34 =374	16*21 =336	**9761**
3.	E – Selection	26*79 =2054	28*66 =1848	34*57 =1938	42*50 =2100	10*43 =430	18*34 =612	22*21 =462	**9444**
4.	E – Performance Managemen	58*79 =4582	42*66 =2772	22*57 =1254	18*50 =900	20*43 =860	14*34 =476	6*21 =126	**10970**
5.	E – Learning	34*79 =2686	39*66 =2574	26*57 =1482	24*50 =1200	18*43 =774	22*34 =748	17*21 =357	**9821**
6.	E – Compensation	22*79 =1738	35*66 =2310	28*57 =1596	14*50 =700	22*43 =946	25*34 =850	34*21 =714	**8854**
7.	E – Employee Profile	32*79 =2528	41*66 =2706	36*57 =2052	15*50 =750	22*43 =946	24*34 =816	10*21 =210	**10008**

Source: Computed data

The above table shows that the Garret scores. First the Garret values are calculated by using appropriate Garret ranking formula. Then based on the Garret values, the Garret table scores are ascertained. The Garret values and the scores of E-HRM practices in table 4 are multiplied to find out score. Finally by adding each row, the total Garret scores are obtained.

Table 4

E-HRM Practices– Garrett Ranking

S. No	E-HRM practices	Garrett Score	Garrett Rank
1.	E – Application	**8768**	VII
2.	E – Recruitment	**9761**	IV
3.	E – Selection	**9444**	V
4.	E – Performance Managemen	**10970**	I
5.	E – Learning	**9821**	III
6.	E – Compensation	**8854**	VI
7.	E – Employee Profile	**10008**	II

Source: Computed data

The above table shows that the scores for E-HRM practices. The Garrett scores are ranked according to their values. The I rank is given for E- Performance Management, II rank is given for E-Employee Profile, III rank is given for E-Learning, IV rank is given for E-Recruitment, V rank is given for E-Selection, VI rank is given for E-Compensation and VII rank is given for E-Application.

Suggestion and Conclusion

Many of the respondents find it difficult to use the electronic compensation benefits; therefore, user friendly and less complicated applications can be used to design for the benefit of the employees. The respondents find it difficult to edit electronic applications and sometimes they are not aware of the examination date if the exams are postponed, therefore messages or mail can be sent to the candidates individually. The satisfaction of the employees towards E-HRM practices can be improved if the above stated suggestions are implemented.

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Enthusiastic Insights Aptitudes within the Age of AI: Audit

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Abstract

Enthusiastic insights (EI) is getting to be truly imperative in today's work environments, particularly with robotization and Fake Insights (AI). As AI and mechanization rethink work parts, EI abilities will gotten to be fundamental for representatives at all levels. Whereas machines exceed expectations at logic-based assignments, understanding and reacting to human feelings stay tricky for AI. In this manner, developing EI gets to be fundamental to remain important within the advancing work scene. This article gives a audit on five papers with respect to the part of EI in today's in the world. It was found that EI may be a key aptitude for all occupations, not fair for administrative parts. Numerous individuals get it that EI is imperative, but not numerous full of companies are actually doing anything approximately it, particularly for non-managerial workers EI isn't indeed taken into thought in execution review. In this paper it is appeared how anybody can learn to move forward their EI capacity, and in this way become good in each day social assignments and have a better likelihood of victory within the genuine world. In conclusion, in a world where as robotization reshapes the workforce scene, organizations must adjust by prioritizing passionate insights as an basic competency for representatives at all levels. The selection of EI-focused hones and advances will offer assistance organizations construct a more sincerely shrewdly workforce, guaranteeing versatility and victory in an advancing work environment.

Keywords: Emotional Intelligence, Artificial Intelligence, Machine Learning

Introduction

Emotional insights alludes to the capacity for individuals to recognize and see feelings viably in existence. Daniel Goleman, clinician, science writer, and a master on enthusiastic insights, and Richard E. Boyatzis, creator, teacher and a master in authority advancement and emotional intelligence, gather these abilities into four fundamental categories as follows:

Self-Awareness: It demonstrates a personal capacity to get it ones claim and others feelings and feelings.

Self-Management: It demonstrated how much a individual is able to control their feelings and respond appropriately.

Relationship management: Ability to candidly interface with others. Having an affecting identity, capacity to resolve conflicts.

Social Awareness: It demonstrates the capacity to examined any circumstance and feelings of individuals around, e.g., by means of compassion and organizational mindfulness. Passionate insights improvement has seen a rise in organizations since a few a long time, it is additionally getting to be a basic ability for employees at all levels. Robotization and AI are bringing modern openings within the work market while also making some human jobs redundant. As a result, today's workforce is experiencing significant disruptive shifts, As AI starts to take a significant stand in the industry, organizations have to make AI more human like in behavior thus making it Emotionally intelligent, like wise for humans to survive this AI competition they have to develop good EI to survive any situation.

Writing Review

Capgemini Investigate (2019) To get it whether organizations and its workers recognize the significance of Enthusiastic insights a consider was conducted by Capgemini in 2019, 750 Officials and 1500 workers were met. The objective of this investigates think about was to illustrate the taking after: Why passionate insights is set to gotten to be a must-have aptitude within the following one to five years. The need for organizations to require steps to construct enthusiastic intelligence. The benefits that enthusiastic insights offer to the organization and workforce. Procedures for organizations to construct a workforce showing tall levels of passionate intelligence.[1]. The Key Findings: are 74% of officials and 58% of non-supervisory workers accept that EI will ended up they must-have a technical™ skill. 61% of officials and 41% of non-supervisory representatives accept that it'll become so within the following one to five years. The monetary benefit industry will see the most elevated request for EI skills. Companies in which workers have tall EI aptitudes for the most part perform superior than their competitors, they have showcase share and less representative attrition. A consider was conducted on the enlisting hones of deals operators for EI Or AI based on certain EI aptitudes. The consider found that representatives with tall EI abilities beat other sales representatives, on an yearly premise, by $91,370, coming about in a net income increment of $2,558,360.[1].

Characteristics of Emotional Intelligence Emotional intelligence can be compared and contrasted with a number of other parts of personality. These other parts are distinct from emotional intelligence both conceptually and empirically. Moreover, although a person may be high in emotional intelligence, they may be high or low in many of these other characteristics. Characteristics of Low and High EQ People

Empathy: including a feeling for others, sympathetic reactions to their feelings, and imaginative involvement in how the other person might be feeling.

Emotional self-efficacy: a person's belief that he or she possesses empathy and assertiveness as well as elements of social intelligence, personal intelligence, and ability emotional intelligence.

Socio-emotional effectiveness: an individual's capacity to navigate the social world in an effective manner, accomplishing his or her goals as needed.

Socio-emotionally effective behaviour: the observable acts of the individual the lead to emotional and social effectiveness of interactions with others. A person with High EQ

Expresses his feelings clearly and directly with three-word sentences beginning with "I feel..." Does not disguise thoughts as feelings by the use of "I feel like...." and "I feel that...." sentences. Is not afraid to express her feelings. Is able to read non-verbal communication. Lets his feelings lead him to healthy choices and happiness. Balances feelings with reason, logic, and reality. Acts out of desire, not because of duty, guilt, force or obligation. Is independent, self-reliant and morally autonomous. Is intrinsically motivated. Is not motivated by power, wealth, status, fame, or approval. Is emotionally resilient. A person with Low EQ Doesn't take responsibilities for his feelings; but blames you or others for them. Can't put together three-word sentences starting with "I feel..." Can't tell you why she feels the way she does, or can't do it without blaming someone else. An attack, blames, commands, criticize, interrupts, invalidates, lectures, advises and judges you and others.

Sahiti. S. (2019)

Manufactured Insights (AI) has gotten to be a transformative drive within the innovation industry, advertising arrangements to a wide run of challenges and upgrading proficiency. Be that as

it may, to bridge the hole between machines and people, AI ought to advance towards imitating human insights more comprehensively. This paper investigates the integration of enthusiastic insights (EI) into AI frameworks, emphasizing the potential for AI to advantage from EI in different areas, counting therapeutic, interview, instruction, and more. By imbuing AI with passionate insights, it cannot as it were limit the isolate between people and machines but moreover give progressed arrangements to complex issues. This integration empowers AI to comprehend and react to human feelings, making openings for made strides intuitive and problem-solving.[2] The paper talks about the usage of EI in AI and its capacity to improve arrangements, expand the scope of AI applications, and mirror human-like conduct. It highlights the significance of passionate clarity in decision-making and investigations how AI can address squeezing societal issues such as separation, mental wellbeing, instruction, and imbalance through the focal point of EI. Moreover, the investigate digs into the affect of AI on different segments, counting healthcare, gaming, instruction, and more. It highlights AI's commitments to these areas and its potential to revolutionize them encourage when combined with enthusiastic intelligence.[2].

The consider moreover touches on the challenges and restrictions of AI, such as its helplessness to control and abuse. It underscores the require for mindful AI improvement and moral contemplations. In conclusion, the integration of Enthusiastic Insights into AI frameworks holds incredible guarantee for upgrading machine-human intelligent, making strides problem-solving capabilities, and tending to societal challenges. As AI proceeds to development, leveraging Passionate Insights can lead to more compassionate, proficient, and human-like AI applications over different businesses. Furthermore, consolidating Enthusiastic Insights into AI frameworks can moreover offer assistance relieve predispositions and separation by advancing reasonable and impartial choice making forms. This could contribute to making more comprehensive and impartial AI advances that advantage different populace. Moreover, the integration of Passionate Insights can cultivate believe between people and AI, eventually clearing the way for more noteworthy acknowledgment and appropriation of these advances in society. Furthermore, joining Enthusiastic Insights into AI frameworks can offer assistance moderate inclinations and guarantee reasonable decision-making forms. By understanding and reacting to human feelings, AI can dodge propagating biased hones and advance inclusivity. Moreover, prioritizing dependable AI advancement and moral considerations will be vital in saddling the total potential of Enthusiastic Insights, whereas minimizing the dangers related with its usage. By consolidating Enthusiastic Insights, AI frameworks can superior get it and react to human feelings, driving to more personalized and custom-made

encounters. This not only moves forward client fulfilment but moreover opens up opportunities for AI to help in areas such as mental wellbeing bolster or client benefit. In any case, it is vital to set up clear rules and controls to guarantee that Enthusiastic Insights in AI is utilized dependably and morally, dodging potential inclinations or intrusions of protection. [2].

Operational Definitions Emotional Intelligence

Emotional Intelligence refers to a set of experiences, including management, self-awareness, mood self-motivation, managing relationships. Higher Secondary Students empathy, and by this, the investigator means that the students are studying in 11th and 12th standards. Objectives of the Study The following are the objectives of the present study:

1. To find out the level of emotional intelligence of Higher secondary school students

2. To find out the difference between the emotional intelligence of males and females of higher secondary school students.

3. To find out the difference between the emotional intelligence of arts and science of higher secondary school students.

4. To find out the difference between the emotional intelligence of rural and urban of higher secondary school students.

5. To find out the difference between the emotional intelligence of the nuclear family and the joint family of higher secondary school students.

6. To find out the difference between the emotional intelligence of father's occupation of higher secondary school students.

7. To find out the difference between the emotional intelligence of family monthly income of higher secondary school students.

Hypotheses of the Present Study

1. The higher secondary school students have low emotional intelligence

2. There is no significant difference between male and female higher secondary school students on their emotional intelligence.

3. There is no significant difference between arts and science higher secondary school students on their emotional intelligence.

4. There is no significant difference between rural and urban higher secondary school students on their emotional intelligence.

5. There is no significant difference in higher secondary school students from nuclear and joint family on their emotional intelligence.

6. There is no significant difference in higher secondary school students of different father's occupations on their emotional intelligence.

7. There is no significant difference in higher secondary school students of different family monthly income on their emotional intelligence.

Abeer Hmoud et. al. (2011)

This think about explores the affect of the impact applied by interpersonal self-awareness, self-assurance, self-discipline, intrapersonal compassion, positive thinking, and social obligation on innovation learning prepare levels (TLP). A comprehensive survey study was attempted, including 124 intentional respondents drawn from 10 IT organizations arranged inside Jordan. The discoveries revealed that the intrapersonal sub-dimensions of Passionate Insights (EI) accounted for a noteworthy 30% of the fluctuation within the foundational levels of TLP. It was assist set up that self-discipline risen as the sole variable able of determining TLP levels over fundamental, normal, progressed, and world-class categories, whereas positive thinking illustrated a vital prescient capacity for TLP levels, with the exception of the normal tier.[3]. Technology learning (TLP) is essential for developing a company's strategy, recognizing opportunities and problems, and raising technology awareness. The four stages of TLP—basic, average, advanced, and world-class—require different strategies and procedures. Since the industry has changed from one that is centered on manufacturing to one that is centered on services, emotional intelligence (EI) has attracted a lot of attention. The intrapersonal and interpersonal elements of EI are its two main components.

In spite of quick innovative alter and a changed workforce, organizational proficiency depends on passionate well-being. EI is related with the basic components that bolster development as well as the stages of development, counting creation, execution, and stabilization. Self-awareness, self-confidence, and self-discipline are illustrations of intrapersonal EI angles that have a useful affect on innovation learning levels. These qualities associated with sympathy, good faith, and social obligation; compassion makes it less demanding to get it the feelings and needs of others; positive thinking energizes an hopeful viewpoint; and social duty incorporates taking an interest in social groupings in a agreeable and profitable way. For supervisors and workers alike, collaboration is pivotal to Enthusiastic Insights and learning. Organizational elements are altogether affected by the

enthusiastic climate, which moreover bolsters the learning prepare. Organizational learning is closely related to passionate insights abilities such as passionate mindfulness, help, information, and control.

In this ponder, 124 members speaking to different official echelons were drawn from ten Jordanian IT organizations. The comes about appeared that the differences in fundamental TLP levels was essentially clarified by intrapersonal EI perspectives, especially self-awareness, self-confidence, and self-discipline. Representatives who are versatile and have the capacity to control their feelings and driving forces are qualified for assignments at the normal, progressed, and world-class TLP levels, such as key ngagement and procuring cutting-edge gear. With the special case of the normal level, which connected with the social duty variable, good faith developed as the as it were interpersonal EI characteristic altogether prescient of TLP levels. The discoveries given observational back for the interesting relationships between TLP levels and EI perspectives, which were hypothesized to exist.

It constitutes a pioneering effort in exploring the intricate relationship linking EI and TLP levels, offering empirical substantiation for an intriguing parallel between the two domains. The pragmatic implications of these findings suggest the inclusion of EI competencies in the processes of selecting and advancing IT personnel, alongside the strategic design of TLP training initiatives.

In conclusion, this ponder underscores the potential of passionate insights to figure a range of innovation learning levels. By illustrating the association between passionate insights and organizational and innovation learning standards, it gives important experiences for improving innovation alter administration activities. The suggestions amplify to the choice and progression of IT work force, as well as the plan and the usage of specialized workshops and preparing programs custom fitted to the passionate of insights competencies.[3].

Athanasios S. et. al (2018)

This think about investigates enthusiastic insights (EI), a complex concept that's imperative in numerous distinctive zones of life. It comprises a wide range of cognitive and passionate aptitudes that have an affect on diverse aspects of interpersonal flow and human cognition. We will draw on critical hypotheses of insights, such as Spearman's two-factor hypothesis and Thurstone's cognitive capacities system, which offer assistance clarify the profound relationship between EI and common insights, to comprehend its complex nature.[4].

Emotional insights (EI) includes more than fair sentiments; it moreover incorporates cognitive abilities like arranging, thinking, versatility, unique thinking, understanding of thoughts, dialect competency, and learning. Complementing social insights, enthusiastic versatility, enthusiastic sharpness, sympathy, practical intelligence, and propelling factors are these cognitive components of passionate insights. EI too incorporates identity properties like self-control, in some cases known as inner self quality, which involves the capacity to put off fulfilment, persevere disappointment, and control motivations.

Prevalent speculations of insights have generally concentrated on common insights (G) and specialized insights (S), outstandingly from Charles Spearman's two-factor hypothesis and Louis L. Thurstone's demonstrate. Whereas other speculations, such as Guilford's Structure of Judgment skills hypothesis, presented extra measurements and made refinements between merged and unique considering, Thurstone's system distinguished seven key cognitive characteristics. Cutting edge psychometric models that recognize between liquid insights (GF) and crystallized insights (GC), such as the Cattell-Horn (GF-GC) and Carroll Three-Stratum models, have shed light on the design of human insights. Conventional thoughts of insights were addressed by Robert Sternberg's triarchic hypothesis of insights, which included explanatory, imaginative, and common-sense insights. Comparative to this, Howard Gardner's Numerous Keen (MI) hypothesis contended that the human brain features a assortment of distinct shrewd, each of which exists freely.

As an essential perspective of the human encounter, feelings have a huge affect on how our lives turn out. Enthusiastic insights (EI) is the interface between feelings and cognition and is based on the capacity to recognize, get it and effectively control feelings. It is fundamental for overseeing stress, communicating, empathizing, settling clashes, understanding issues, and accomplishing common prosperity. The four fundamental expertise components that make up enthusiastic insights are enthusiastic recognition, feeling encouraged thought, passionate understanding, and enthusiastic administration. Self-awareness, interpersonal skill, and the capacity to arrange the weights of existence are all impacted by these qualities. Self-Mindfulness, Self-Regulation, Inspiration, Compassion, and Social Abilities are a few of the clusters that EI is as often as possible partitioned into. The Petrides and Furnham demonstrate of trait emotional insights combines self-perceived emotional. capacities and disposition to supply a comprehensive understanding of a person's passionate insights. The capacity EI demonstrate and the characteristic EI show, which both emphasize the importance of tall EI in foreseeing real-world victory, affecting social associations,

scholastic accomplishments, and mental well-being, are the two fundamental approaches investigated by investigate on EI.

Importance of Emotional Intelligence

To date, the importance that academics attach to the study of EI has been recognized by the literature in many areas, such as the workplace. For example, in professions where working with people is needed, burnout syndrome is common. It is a syndrome that is expressed by an increase in emotional exhaustion and indifference, as well as by a decrease in professional effectiveness [6]. To date, numerous studies have shown that EI can help change employee attitudes and behaviours in jobs involving emotional demands by increasing job satisfaction and reducing job stress [7–10]. Likewise, on the one hand, it has been found that certain psychological variables, including EI and social competence, are related to less psychological distress. On the other hand, the acquisition of emotional and social skills can serve to develop resilience, which is a protective variable against psychological distress [14]

The Nine Layer Enthusiastic Insights Show:

The Pyramid of Passionate Insights has been built up to offer a organized system for comprehending and making strides enthusiastic insights over numerous life ranges. This nine-layer show combines components of the Capacity EI and Characteristic EI models, counting highlights of self-worth, inspiration, social mindfulness, stretch administration, compassion, and more.

Emotional Stimuli:

Emotional boosts are handled by a cognitive instrument that decides what feeling to feel and, in this way, deliver an enthusiastic response which may impact the event of the behavior

Emotion Recognition:

The another level over the passionate jolts is the feeling acknowledgment regularly happening together. The capacity to precise and recognize feelings in others is an vital portion of the day by day human interaction and interpersonal relationships because it may be a representation of a basic component of human socio-cognitive capacities.[4]

Self-Awareness:

Crisp and Turner depicted self-awareness as a psychological circumstance in which individuals know their characteristics, sentiments, and behaviors. Advancement of self-awareness is the primary step in creating EI. The capacity to know inward self implies having the capacity to evaluate our qualities, shortcomings, our passionate state and our behavior.

Self management:

It permits a individual to control their responses so that they are not driven by passionate driving forces. With self-administration a individual has the capacity to control feelings and be more responsive of others feelings.

Social Awareness:

It is a development of enthusiastic mindfulness; social mindfulness alludes to the way individuals recognize other's feelings and sentiments and viably alter their claim behavior to realize the required results.

Social Skills:

It could be an aptitude on the off chance that created can be utilized to be the finest group player by having the capacity to tune in to everybody, resolve clashes, create believe and impact individuals. Social aptitudes beneath the department of emotional intelligence can incorporate Impact, Authority, Communication, Collaboration, and Collaboration.

Self-Actualization:

As before long as the underneath six levels have been accomplished, an person has presently come to the self-actualization space where the individual feels sympathy and family relationship towards humankind as a entire and so, that develops the all-inclusiveness of emotion.

Transcendence:

People who have come to this level help other individuals oversee their feelings and realize their full potential. Greatness is unequivocally related with self-esteem, passionate well-being and worldwide empathy.

Emotional Unity:

It is the beat most level within the EI pyramid. In enthusiastic solidarity one feels strongly joy, peace and a affirmation of extreme truth and the solidarity of all things. We are all interconnected, and the more we dig more profound into our heart and take after it, the less likely it'll be for us to do things that can hurt others or the planet in common.

In conclusion, Emotional Intelligence is an essential component of social interaction and human cognition in modern society. Understanding its complex nature is crucial for both individual and social well-being because it involves a variety of cognitive and emotional processes. More in-depth models that take into account emotional, cognitive, and metacognitive skills could be developed as a result of future study, offering a better grasp of this crucial concept.[4].

Constantinos Halkiopoulos et. al (2020)

This term paper investigates passionate insights (EI) as a changing identity characteristic and mental capacity, highlighting its noteworthiness in controlling cognitive forms. A test of individuals between the ages of 18 and 26 for the most part understudies and social arrange clients have their passionate IQ tried as portion of this study utilizing machine learning and information mining strategies. The objective is to get understanding of client behavior on social organizing destinations so that interface plan, social interaction inquire about, and substance conveyance strategies may all be improved.[5]

Methodology

The Trait Emotional Intelligence Survey may be a self-report survey that has been created to cover the characteristic EI examining space comprehensively. The information were collected by completion of the self-report survey Characteristic Enthusiastic Insights (TEIQue) and utilized for the application of information mining. Then the information was analyzed utilizing suitable changes for machine learning calculations. TEIQue gives comprehensive scope of the 15 aspects of the characteristic EI testing space organized beneath four factors:

It compromises of three characteristics to be specific joy, optimisms and self-esteem. It may be a degree of people groups recognition of how cheerful and substance they feel in life.

Self-control:

Self-control is the control of incautious responses. It comprises three diverse characteristics: Motivation control, stress management and enthusiastic regulation.

Emotionality:

The Emotionality figure comprises four diverse characteristics: Compassion, Feeling Recognition, Feeling Expression and Connections. Together they demonstrate how mindful a individual is of their possess and other's feelings and sentiments.

Sociability:

This factor indicates how much people feel comfortable in a social setting. Sociability is an important factor in leadership positions. It helps leaders motivate a variety of people in order to achieve goals and resolve difficult situations and underperformance.

Suggestions to enhance Emotional Intelligence in Education Setup

Some individual always know, when and how to express or speak up their emotions, to inspire others, whereas other persons are less competent of touching these outcomes. At the initial stage of teacher education courses itself; the level of emotional competence in students can be assessed so as to plan programmers' for them to improve in these skills. Teachers should smudge about how certain period of their surroundings influence their emotions, and in twist their impulse, value of teaching in exchanges with others. There is lot of scope for emotional empowerment in students, so this only can be carved with the help of teachers. There are several indirect ways to help students aware them by sharing and discussing positive and negative aspects of emotions talk about personal incidents, using few role-playing activities which offers them suitable way of expressing emotions. Taking lessons of emotional intelligence separately. Therefore, the main objective of organizing this activity are to: (1) enhance awareness of how emotions can affect the way we assuming and behaving, and (2) build up a set of ways for manipulating the emotions of oneself and of others in order to affect thought processing, behaviour, and especially in different spheres.

Conclusion

In conclusion, these investigate papers collectively emphasize the developing significance of passionate insights (EI) in our advancing world, especially within the setting of innovation, work situations, and social intuitive. They highlight the multifaceted nature of EI, its integration into

manufactured insights, its affect on innovation learning, and its part in understanding buyer behavior within the advanced age. As we explore the age of AI and robotization, developing passionate insights isn't fair a expertise for supervisors but a crucial competency for employees at all levels. It improves efficiency, bliss, and life span within the work environment, eventually profiting both people and organizations. Furthermore, the combination of Enthusiastic Insights with Fake Insights has gigantic potential for bridging the hole between individuals and computers, tending to complicated societal issues, and cultivating inclusivity and reasonableness. The association between passionate insights and mechanical learning also exemplifies how EI may be progressive in boosting organizational victory and learning adequacy, especially within the IT industry.

Lastly, the investigation of passionate insights within the domain of social organize buyers sheds light on how understanding emotional triggers and gender-specific contrasts can revolutionize promoting methodologies within the computerized time. In substance, these papers collectively emphasize that enthusiastic insights isn't fair an basic expertise but a energetic drive forming the way everybody works, interatomic, learns, and makes choices in their quickly changing world. Understanding and saddling the control of enthusiastic insights will proceed to be instrumental in cultivating sympathy, effectiveness, and significant human machine interactions over different spaces.

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Financial Performance of NIFTY 200 - Industrial Manufacturing Companies in India – An Empirical analysis through Altman Z Score

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Abstract

This study aims to assess the financial health of Industrial manufacturing companies by employing the Altman Z-Score model. The Z-Score, developed by Edward Altman, is a multivariate statistical model that predicts the likelihood of a company filing for bankruptcy. By analyzing key financial ratios, it provides a valuable tool for evaluating a company's financial risk. This study is mainly based on the secondary data and the data is collected from the annual report of selected company and websites of moneycontrol.com for the period of Ten years, which ended on 31st March. The period of the study is 2010-11 to 2019-2020. Edward Altman's Z score (Shivprasad et al 2013) is used as weight estimation measure and IGR and SGR under Du Pont analysis were used as dependent financial variable instead of other financial variables like EVA (Mukesh kumar Jain,2019), operating profit ratio, ROCE etc. (Suwaidan 2004, D P Singh 2012), Akinmulegun Sunday Ojo applied EPS and NAPS (2012) and Shailesh et al used RONW, ROCE and DE ratio. All the parameters have been analyzed with descriptive, Friedman F test, Karl Pearson's co efficient of correlation. The coefficient of determination has also been tested through weight estimation regression analysis. Friedman test proved that IGR, SGR and Altman Z score were significantly different with each other at 1% levels. IGR and SGR has no any significant relationship with Structural ratios, but has negative significant relationship with Altman Z score. DPS and ROCE have positive impact on IGR and SGR and influencing at 71% of Nifty 200 Industrial manufacturing companies in India during the study period.

Keywords: Altman Z score, DuPont Analysis of IGR, SGR, Financial Leverage and Nifty 200 Industrial Manufacturing companies

Introduction - Financial Performance

Company analysis is an thing of Economy-Industry-Company analysis sequence. Financial analysis starts with a traditional analysis of yields and dividend and its growth rate. Growth of economy depends on growth and development of corporate sector. Fundamental analysis is a method of measuring a security's intrinsic value by examining the related economic and financial factors. Financial statements are the medium by which a company discloses information concerning its financial performance. Followers of fundamental analysis use quantitative information gathered from financial statements to make investment decisions. Broadly speaking, fundamental analysis evaluates individual companies by looking at the firm's financial statements and examining various ratios and other metrics. This is used to estimate a company's intrinsic value based on its revenues, profit, costs, capital structure and cash flows. Company metrics can then be compared with industry peers and competitors. Any company which gives lower benefit to the shareholders, be considered as low standard company.

The literature review of Fiori et al (2009) financial performance be measured based on profitability, solvency, liquidity and repayment capacity. Babalola et al (2012) in Nigeria, Swati Goyal in India measured financial performances based on Profit After Tax. Bert Scholtens (2006), Brammer et al (2006) measured financial performance based on Profit after Tax and Market capitalization as stock market performances. Zhi Tang et al (2011) measured financial performances based on ROA. Dr Shiv Prasad et al (2013) applied Altman Z score as financial measure. The P/E ratio has a crucial role in the investment community. This ratio reflects the market's expectation of future growth and firm risk (Chan et al., 2003; Wu, 2013). The growth of a organization depends upon several factors like the Corporate Governance factors, age and nature of business, size of business and type of financing etc.

Kroll (1997) empirically examined the effect of financial performance and stated that Economic value added also helps in acquisition oa a another company.

Dr Shuveer and S Banawat (2013) explained the prediction model for determination of shareholders wealth has been developed with Market value added, finished goods turnover ratio and weighted average cost of capital for the period pertaining from 2003-2004 to 2007-2008 and applied rotated component matrix with a sample of 54 companies from BSE-A group, tested the regression model and concluded that there is no significant differences between the mean value of actual EVA and estimated EVA.

Bhuvana Ranjan Ahuja et al(2014) applied Altman Z score model and examined the financial soundness of 15 textil companies in India for the period from 2006-2011 and concluded that the mean value of Z scorefor the last six years being 02.52(Grey Zone) and indicated that many textile manufacturer in India are financially unsound.

Tahir Akhtar et al (2016) investigated the effect of Capital structure on Firm performance using the agency cost hypothesis and reverse causality hypothesis for the firms listed in the Karachi stock exchange Textile industry for the period from 2008-12 and applied DEA (Data Envelopment Analysis) and concluded that Ownership Structure and Leverage had a positive and significant relationship between them.

Urs von Arx and Andreas Ziegler(2008) provides empirical evidence for the effect of corporate social responsibility (CSR) on corporate financial performance by examining two different regions, namely the USA and Europe and applied Fama French three factor model instead of Capital Asset Pricing Model and concluded that positive effects on average monthly stock returns between 2003 and 2006 appear to be more robust in the USA and pointed out to biased parameter estimations if incorrectly specified econometric models are applied.

Margarita Tsoutsoura(2004) reviewed empirical studies and explained about eleven CSR dimensions based on DSI 400 Index and measured Corporate Financial Performance based on investors valuation of firms performance like ROA, ROE and ROS of S&P 500 Indexed socially responsible firms and applied cross sectional time series analysis through COMPUSTAT database and concluded that corporate social performance is positively linked with corporate financial performances.

Dr Mohinder Singh et al (2016) investigated the impact of capital structure on firm's profitability of the selected cement companies in India and found that significant negative relationship between debt and profitability meaning that companies with higher proportion of debt tend to have low profitability. Authors also concluded that financial problem persisted before and will always be there, and if an industry has to move on, it should prepare itself to tackle such challenges.

Dr Vishal Patidar et al (2016) made an attempt to predict the financial health of NTPC and NHPC for the period of Five years from 2009-10 to 2014-15, using Altman Z score model. Authors

found that that NTPC belongs to too healthy zone (Z score is more than 2.99) where it is successful in its financial performance and not to fall bankruptcy, but NHPC is not comes under healthy zone where its financial, if failure is certain.

J.Pavithra. et.al. (2017) in their paper titled, "A Study on the Analysis of the Financial Performance with Reference to Jeppiaar Cements Pvt. Ltd." made a conclusion about the financial performance analysis of Jeppiaar Cements Pvt. Ltd. The period of the study was taken for 5 years from 2009-2013. Comparative financial statements, ratio and trend analysis was employed to study the financial position over the years. It was found that the debtor's turnover ratio had an increasing trend which is not considered a good sign for the company and concluded overall profitability position to be good. The current ratio showed fluctuation but the creditworthiness of the company was observed to be good.

Dr B Radha et al (2017) studied the intrinsic value of the firm's equity and compare the calculation of intrinsic value with their corresponding market values. The data is analyzed by using financial models like discounted cash flow method, Dividend growth model applied for rubber Tyre companies and expected to reveal that how the Indian companies tend to reward better value to the shareholders that are measures the corporate valuation and encourages regulators to initiate further timely reforms to build a strong relationship between those who run the company and the stakeholders.

Dr K Aparna et al (2018) studied availability of number of economies for producing on a large scale and small size firms by availing particularly the internal economies, carried out to identify whether these internal economies derived from different functional areas are truly enjoyed or not and selected 9335 public limited companies under seven categories for their period of three years from 2014-2016 and applied Analysis of Variance, concluded that greater difference among the different categories of public limited companies with respect to their profitability, expenditure and turnover positions.

Dr Butala Ajmera (2019) used secondary data and analyzed the relationship between financial leverage and earnings dividend policy of selected Steel companies in India, applied Correlation matrix and concluded that DPS has significant and positive relationship with ROCE. Sfe also found that DPS has no any significant impact on independent variables, but negatively affected by degree of financial leverage.

Esra Nemli et al (2011) examined the relationship between Corporate Reputation and Corporate Financial Performance in Turkey for the period 2000-2010. The corporate reputation ranking from Capital Magazines Turkey's list used as proxy for Corporate Reputation. Return on Equity, Return on Asset and Market to Book value used as financial performance measures and concluded that there is casual relationship between Corporate Reputation and Corporate Financial performance and Corporate Reputation does not impact performance measure of ROE, but ROE improves corporate reputation

Altman Z Score

Edward Altman published formulae to access the probability that a firm will measure financial health. Z score includes five easily derived business ratios, weighted by coefficients. Edward Altman's Z score was calculated and used as financial performance parameter. (Z score = $1.20 X_1 + 1.40 X_2 + 3.30 X_3 + 0.60 X_4 + 0.99 X_5$, where X_1 is working capital / Total Assets, X_2 is Retained earnings/Total Assets, X_3 is EBIT/Total Assets, X_4 is Market Capitalization/ Total Value of Liability and X_5 is Sales /Total Assets).

Table-1: Standard Z score Parameters

Situation	Z Score	Zones	
I	Below 1.80	Bankruptcy Zone	Failure is certain
II	Between 1.80 -2.99	Healthy Zone	Uncertain to Predict
III	Above 2.99	Too Healthy Zone	Sustainable Success

(Source from Dr Shiv Prasad et al 2013)

Growth Performance of under Du-Pont Analysis

Return on Investment (ROA) is Profit margin *Assets turnover. ie PAT/Sales * Sales/Total Assets. When the investment turnover is multiplied by the Net profit ratio, the product is known as ROI. This pattern is also known as **DU PONT** Analysis.   Return on Equity is ROA* Equity multiplier. I e PAT/Sales * Sales/Total Asset* Total Asset/ Shareholder Fund. (PAT/SHF)

Measuring the Growth of the firm:

Internal Growth rate (IGR) is ROA * b/ 1 – ROA*b, where b is retention rate. Retention rate is 1- Dividend pay out ratio. Sustainable growth rate (SGR) is ROE * b / 1 – ROE *b.Under DU PONT analysis:

a. Operating Efficiency (as measured by profit margin)

b. Assets use efficiency (as measured Sales / Total Assets)

c. Financial Leverage (as measured by Equity Multiplier)

Financial Leverage

Financial leverage arising from the existence of fixed financing cost, which is associated with financing activities. Financial leverage commonly analyzed by Structural ratio like

1. Debt Equity Ratio = Long term debts/ Internal Liabilities
2. Debt to Asset Ratio = Long term Debts / Total Assets

Statement of the Problem

This study was descriptive in nature and expands the knowledge in the financial analysis area of Du Pont Analysis and financial leverages have significant impact on financial performance through Altman Z score is the considerable attention. In this study EPS, DPS, BV, ROCE, NP Margin, Asset Turnover, Current ratio, Quick ratio, Inventory Turnover, EV/Operating Revenue, Price/BV were treated as financial independent variables and IGR and SGR were used as modern financial dependent variables and Altman Z score used as weight estimation variable.

Objectives of the Study

The objective of the analysis is to identify the performance, financial and relative competitive strength.

1. To Calculate the Internal Growth Rate (IGR) and Sustainable Growth Rate (SGR) under Du Pont analysis
2. To determine the Altman Z score of selected companies
3. To find any significant difference between Altman Z score with IGR and SGR
4. To determine whether selected financial variables has any impact on IGR, SGR being Altman Z score used as weight estimation measure.

Methodology

The present study is mainly based on the secondary data and the data is collected from the annual reports of Nifty 200 Industrial Manufacturing companies in India and websites of moneycontrol.com, BSE.com etc for the period of Ten years, which ended on 31st March.(Siemens Ltd closing their books of account on Sept 30th every year) The period of the study is 2010-11 to 2019-20. Edward Altman's Z score used as weight estimation variable and IGR and SGR under Du Pont

analysis were used as modern financial variable under fundamental analysis technique, instead of other financial variables like operating profit ratio, ROCE etc. (Suwaidan 2004), Adam Lindgreen e al (2008), Jain Neeta et al, Zhi Tang et al (2010) Md Abdur Rouf (2011) and Yaghoub Alavi Matin et al.2011). Akinmulegun Sunday Ojo applied EPS and NAPS (2012) and Shailesh et al used RONW, ROCE and DE ratio. For the analysis Mean, Standard Deviation, Friedman F rank test, Correlation coefficients and weight Estimation regression analysis have been applied for its validity. Expected Outcomes

- Identification of financially distressed companies.

- Assessment of the Z-Score model's effectiveness in predicting bankruptcy for Indian companies.

- Comparison of the financial health of different sectors.

- Insights into the factors contributing to financial distress in Indian companies.

Limitations

The Z-Score model may not be equally effective for all sectors and company sizes. The model relies on historical data, which may not accurately predict future performance. The model may not capture all relevant factors affecting financial distress.

Analysis and Interpretations

Table 5.1: Descriptive Statistics

	N	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Std. Error
Internal Growth Rate	80	6.9775	7.38194	4.527	0.269
Sustainable Growth Rate	80	13.4638	11.90960	3.328	0.269
Altman Z Score	80	3.6780	1.48886	0.631	0.269
Earnings Per Share	80	27.7522	29.72553	2.575	0.269
Dividend Per Share	80	8.8948	8.24079	2.768	0.269
Book Value Per Share	80	161.5595	141.09648	2.636	0.269
NP Margin	80	12.7595	7.17486	0.632	0.269
Return on Cap Employed	80	17.0391	12.17093	2.913	0.269
Asset Turnover	80	76.6695	29.43477	0.081	0.269
Current Ratio	80	1.9606	0.64926	1.393	0.269
Quick Ratio	80	1.4438	0.46338	0.516	0.269
Inventory Turnover Ratio	80	6.2771	3.31180	0.324	0.269
Enterprise Value/Ope.Revenue	80	2.6558	1.59542	0.634	0.269
Price/Book Value	80	3.9279	2.48087	0.274	0.269
Debt -Equity ratio	80	0.2182	0.22987	1.056	0.269
Debt to Asset ratio	80	0.1054	0.09640	0.920	0.269
Valid N (listwise)	80				

The above table-5.1 shows that the Mean value of IGR is 06.9775. and SGR is 13.4638. Cummins Ltd, Graphite Ltd and HEG Ltd has higher value of IGR than the Nifty 200 Industrial manufacturing industry average level. Cummins Ltd, Graphite Ltd, HEG Ltd, Siemens Ltd and SRF Ltd has higher value SGR than the average level. The Mean value Altman Z score is 3.678, it represent that the Nifty 200 Industrial manufacturing companies had sound financial position during the study period, but Bharat Electronics Ltd, BHEL, HEG Ltd and SRF Ltd has lower Z Score then the average level during the study period. The mean value of EPS is 27.75, where HEG Ltd, Siemens Ltd and SRF Ltd has higher than the average level. Mean value of DPS is 8.4948, where Cummins Ltd, Graphite Ltd, HEG Ltd, Siemens Ltd and SRF Ltd has higher value than the average level. Mean value of BVPS is 161.56, where HEG Ltd and SRF Ltd has higher value than the average level. Mean value of NPM is 12.76, where Bharat Electronics, Bharat Forge Ltd, Cummins Ltd and Graphite Ltd has the higher value, than the average. Mean value of ROCE is 17.039, where Bharat Electronics, Cummins Ltd, Graphite Ltd, HEG Ltd and Siemens Ltd has the higher value, than the average. Mean value of Asset Turnover is 76.67, where Cummins Ltd, Siemens Ltd and SRF Ltd has higher value than the average level. Mean value of Current ratio is 1.96, where Cummins Ltd and Graphite Ltd has higher value than the average. Mean value of Enterprise value/Operating revenue is 2.65, where Bharat Forge, Cummins Ltd and Siemens Ltd has the higher value, than the average. The Mean value of Price/ Book value per share is 3.92, where Bharat Forge, Cummins Ltd and Siemens Ltd has the higher value, than the average. The Mean value of Debt equity ratio is 0.2182 where Bharat Forge, BHEL, Cummins Ltd, HEG Ltd and SRF Ltd has the higher value, than the average.

Null Hypothesis-1: That there is no any significant differences between IGR, SGR with Altman Z score of Nifty 200 Industrial Manufacturing (selected) companies in India

Table – 5.2: Table showing Friedman's Two Way Analysis of Variance test

Null Hypothesis	Test	Significance	Decision
The Distribution of IGR, SGR and Altman Z Score are the same	Related sample Friedman's Two-Way Analysis of Variance by Ranks	**0.000**	Reject the Null Hypothesis

Table 5.2 proved that there is significant differences exist among IGR, SGR and Altman Z score of Nifty 200 Industrial manufacturing companies in India. Hence reject the null hypothesis.

Null Hypothesis-2: That there is no any significant relationship between the dependent and independent variables of Nifty 200 Industrial manufacturing companies in India.

Table 5.3: Correlation Co efficient of Selected Dependent & Independent variables

Variables		IGR	SGR	Altman Z score	Results		
					1	2	3
Earnings Per Share	Correlation	0.457	0.454	0.164			
	Significance	**0.000**	**0.000**	0.146	Yes	Yes	No
Dividend Per Share	Correlation	0.769	0.724	0.590			
	Significance	**0.000**	**0.000**	**0.000**	Yes	Yes	Yes
Book value Per Share	Correlation	0.003	0.035	-0.139			
	Significance	0.975	0.756	0.218	No	No	No
Return on Capital Employed	Correlation	0.865	0.847	0.655			
	Significance	**0.000**	**0.000**	**0.000**	Yes	Yes	Yes
Net Profit Margin	Correlation	0.779	0.742	0.625			
	Significance	**0.000**	**0.000**	**0.000**	Yes	Yes	Yes
Asset Turnover	Correlation	0.377	0.297	0.785			
	Significance	**0.001**	**0.007**	**0.000**	Yes	Yes	No
Current Ratio	Correlation	0.346	0.182	0.352			
	Significance	**0.002**	0.107	**0.001**	Yes	No	Yes
Quick Ratio	Correlation	0.313	0.164	0.481			
	Significance	**0.005**	0.147	**0.000**	Yes	No	Yes
Inventory Turnover Ratio	Correlation	0.080	0.053	0.513			
	Significance	0.482	0.640	**0.000**	No	No	Yes
Enterprise Vale/ Operating Revenue	Correlation	0.239	0.158	0.709			
	Significance	**0.033**	0.160	**0.000**	Yes	No	Yes
Price/Book Value per share	Correlation	0.253	0.237	0.798			
	Significance	**0.024**	**0.034**	**0.000**	Yes	Yes	Yes
Debt Equity ratio	Correlation	-0.164	-0.053	-0.384			
	Significance	0.147	0.638	**0.000**	No	No	Yes
Debt to Asset ratio	Correlation	-0.165	-0.053	-0.432			
	Significance	0.143	0.641	**0.000**	No	No	Yes

Table 5.3 shows that all the selected independent variables have positive and significant relationship with IGR (except BVPS, ITR, Debt-equity ratio and Debt to Asset ratio) at 0.05 levels. EPS, DPS, ROCE, NP Margin, Asset Turnover and Price/ BV per share has positive and significant relationship with SGR at 0.05 levels. DPS, ROCE, NP Margin, Asset Turnover, Current ratio, Quick ratio, Inventory Turnover, Enterprise Value/Operating Revenue, Price/ Book value per share has positive and significant relationship with Altman Z score of Nifty 200 Industrial manufacturing companies in India at 0.01 levels and at the same time Debt equity ratio and Debt to Asset ratio has negative and significant relationship with Altman Z score at 0.01 levels. So authors rejected the null hypothesis.

Null Hypothesis-3: That there is no any significant relationship between the dependent and structural ratios of Nifty 200 Industrial manufacturing companies in India.

Table 5.3 showed that Structural ratios (Debt Equity and Debt to Asset ratio) have no any significant relationship with IGR and SGR at 0.05 levels, but has negative significant relationship with Altman Z score at 0.01 levels. So authors rejected the Null hypothesis.

Null Hypothesis-4: That there are no any significant differences between the selected independent variables of Nifty 200 Industrial manufacturing companies in India.

Table 5.4: Ranks

	Mean Rank
Earnings Per Share	9.98
Dividend Per Share	7.53
Book Value Per Share	12.80
NP Margin	8.95
Return on Cap Employed	9.71
Asset Turnover	12.06
Current Ratio	5.06
Quick Ratio	3.71
Inventory Turnover Ratio	7.41
Enterprise Value/Ope.Revenue	4.75
Price/Book Value	5.82
Debt -Equity ratio	1.99
Debt to Asset ratio	1.23

Table 5.5: Test Statistics[a]

N	80
Chi-Square	839.551
df	12
Asymp. Sig.	**0.000**

a. Friedman Test

Friedman test statistics proved that the independent variables has significant differences at 0.01 levels and rejected null hypothesis and concluded that there are significant differences exist between the selected independent variables.

Null Hypothesis - 5: The selected independent variables have no any impact on IGR of selected Nifty 200 Industrial manufacturing companies in India.

Table 5.6 : Model Summary

Multiple R	0.847
R Square	**0.717**
Adjusted R Square	0.680
Std. Error of the Estimate	0.474
Log-likelihood Function Value	-195.660

Table 5.7: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	39.756	9	4.417	19.664	**0.000**
Residual	15.725	70	.225		
Total	55.481	79			

Table 5.8: Coefficients

	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error	Beta	Std. Error	t	Sig.
IGR(Constant)	1.082	1.147			0.944	**0.049**
EPS	-0.024	0.013	-0.182	0.101	-1.802	0.076
DPS	0.230	0.078	0.321	0.110	2.927	**0.005**
NP Margin	0.129	0.074	0.256	0.146	1.752	0.084
ROCE	0.220	0.065	0.490	0.146	3.370	**0.001**
Asset Turnover	0.003	0.015	0.017	0.097	0.170	0.865
Current Ratio	0.822	1.003	0.122	0.149	0.819	0.415
Quick Ratio	-1.921	1.342	-0.203	0.142	-1.432	0.157
EV/OR	0.108	0.457	0.033	0.141	0.237	0.813
Price to Book Value	-0.189	0.345	-0.086	0.157	-0.547	0.586

Table -5.7 showed that the f value of IGR is 19.664 and significant at 0.05 levels and Table 5.8 proved that Internal Growth Rate (IGR) influenced by DPS and ROCE at 71.7% (R Square) of Nifty 200 Industrial manufacturing companies in India.

Null Hypothesis - 6: The selected independent variables have no any impact on SGR of selected Nifty 200 Industrial manufacturing companies in India.

Table 5.9: Model Summary

Multiple R	0.847
R Square	**0.718**
Adjusted R Square	0.681
Std. Error of the Estimate	2.384
Log-likelihood Function Value	-251.442

Table 5.10: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1011.464	9	112.385	19.781	**0.000**
Residual	397.708	70	5.682		
Total	1409.172	79			

Table 5.11: Coefficients

	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error	Beta	Std. Error	t	Sig.
SGR (Constant)	6.373	2.821			2.259	**0.027**
EPS	-0.024	0.031	-0.073	0.095	-0.770	0.444
DPS	0.433	0.166	0.297	0.114	2.605	**0.011**
NP Margin	0.302	0.193	0.218	0.139	1.562	0.123
ROCE	0.512	0.146	0.522	0.149	3.509	**0.001**
Asset Turnover	-0.056	0.036	-0.156	0.101	-1.550	0.126
Current Ratio	1.287	2.343	0.083	0.151	0.549	0.585
Quick Ratio	-4.125	3.215	-0.188	0.147	-1.283	0.204
EV/OR	-1.658	0.975	-0.242	0.142	-1.700	0.094
Price to Book Value	0.922	0.749	0.206	0.167	1.231	0.223

Table -5.10 showed that the f value of SGR is 19.781 and significant at 0.05 levels and Table 5.11proved that the Sustainable Growth Rate (SGR) influenced by DPS and ROCE at 71.8% (R Square) of Nifty 200 Industrial manufacturing companies in India.

Conclusion

This study will provide valuable insights into the financial health of selected companies using the Altman Z-Score model. The findings will be useful for investors, creditors, and policymakers in making informed decisions and taking appropriate measures to mitigate financial risks. Note: This is a general framework. The specific methodology, data collection, and analysis techniques will need to be adapted based on the research objectives and available resources. EPS, DPS, ROCE, NP Margin, Asset Turnover, Price to Book value per share has positive and significant relationship with both IGR and SGR at 0.05 levels. Current ratio, Quick ratio and Enterprise Value/Operating Revenue also have significant relationship with IGR at 0.05 levels. DPS, ROCE, NP Margin, Asset Turnover, Current ratio, Quick ratio , Inventory Turnover ratio, Enterprise Value/Operating Revenue, Price to Book Value per share has positive and significant relationship with Altman Z score at 0.05 levels and at the same time Debt equity ratio and Debt to Asset (Financial Leverage) negatively significant relationship with Altman Z score of Nifty 200 Industrial manufacturing companies in India.

Individually for Bharat Forge Ltd, NP Margin influences IGR and SGR under Altman Z score as weight estimation regression analysis at 0.05 levels. Cummins Ltd, Asset Turnover ratio influences IGR and SGR at 0.10% levels.

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An Examination of Aligning Employee Competencies with Technological Adaptability in The Service Sector of Virudhunagar District

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Abstract

Service industries to actively contribute significantly to the smooth operation and positive development of a community, often by fulfilling essential functions like providing necessary services, upholding social values, and fostering cooperation among individuals and a thriving economy. Skilled professionals are employees who have specialized training, knowledge, or skills in a particular field or industry. They are often able to perform their jobs efficiently and safely. Recently, clients received their shipment, but it was missing the necessary linking software. The payment for this small yet vital software led to significant disputes and delays in the implementation of the new technology. This new technology renders their deep understanding of legacy systems obsolete. Frequently, such resistance can escalate into acts of sabotage. This situation poses a distinct challenge to the future economic growth of India and necessitates innovative solutions to effectively leverage the driving economic growth by generating high employment, contributing significantly to GDP, and supporting other industries through facilitating services like transportation, banking, and communication. Invest India examines the services sector's contribution to the Indian economy, highlighting its achievements while also identifying potential enablers for future equitable economic development. The utilization of multimedia for storing text, graphics, video, sound, and other formats has greatly enhanced information storage systems. By 2021, cloud technology had already been adopted by 54% of companies working in the financial services industry. In 2024, we can expect to see this technology cement its place as one of the key emerging technologies in the financial services industry. Historically, the balance between job creation through new products and job loss due to new process technologies has favored the job-creating impact of innovation. While there is no assurance of a favorable outcome this time, a key lesson from the past is that we often underestimate the job-creating capacity of significant technological changes, primarily due to our limited

understanding and imagination regarding the types of jobs that may emerge within the new technological framework.

Introduction

As per my study Services Sector in India serves as a remarkable illustration of bypassing conventional economic growth models. In just 50 years following independence, the service sector has come to account for more than 60% of the nation's GDP. Nevertheless, it employs merely 25% of the workforce. As a result, agriculture, which remains stagnant, and manufacturing, which has yet to reach its full capacity, continues to support the majority of the employed population.

Market Size of the Service Industry

A comparative analysis of the American and Chinese economies highlights the distinctive characteristics of India's GDP growth, particularly stemming from the contributions of the Service sector and its connections to employment and income distribution (employment figures are indicated in brackets). Over time, a strong manufacturing base and productive agricultural sector have enabled the Service industry in India to become a cornerstone of both GDP and employment. In this context, the Service sector has emerged as a critical driver for not only enhancing our GDP but also serving as a primary source of job creation. The pressing question remains: how can we augment the value added to GDP from Service companies in India while simultaneously decreasing reliance on agricultural employment and fostering growth in the manufacturing sector?

Service industries encompass a wide array of fields, and comprehending their societal role can assist individuals interested in service careers in better navigating their employment opportunities. This article aims to define service industries, elucidate their significance, enumerate the advantages of working within the service sector, and provide examples of various service industry positions. Despite recognizing the competitive advantages that new technologies can offer, many enterprises still struggle with technology adoption. This discussion will outline the challenges associated with embracing new technology and offer strategies to address these obstacles.

The Business Case

In a competitive economic landscape, executives are compelled to exercise caution with their financial resources. They require either a substantial financial incentive or a persuasive business rationale to commit to new technological investments. Take, for instance, the QuickBooks is a

standard comprehensive financial management tool geared towards small and medium businesses and accountants. It is more helpful for preparing bank reconciliation, invoices, tracking expenses, payroll, and advanced reporting in India. There are both cloud and on premise solutions. Senior management across various organizations has yet to identify sufficient business justifications for modernization.

Resource Crunch

The adoption of new technologies often entails significant expenses. The initial costs associated with development can be substantial, even when utilizing open-source software. Additionally, indirect expenses related to training, operational disruptions, and downtime further escalate overall costs. There is also the potential for customer dissatisfaction during the challenging transition phase. Many organizations perceive these costs as prohibitive, leading to delays in technology adoption. Furthermore, numerous enterprises lack the financial capacity to endure short-term setbacks in anticipation of long-term gains. The latest survey indicates that micro level businesses are willing to increase their technology expenditures by 18%. However, decision-makers tend to concentrate on the development of specific technologies while allocating minimal resources for implementation. For example, a large manufacturer of computerized processing control equipment delivered products to clients without the necessary linking software, resulting in significant disputes and delays due to the payment issues surrounding this essential software.

Skill Challenges

A significant number of businesses struggle to find qualified personnel for the implementation of new technologies. The shortage of skilled workers is particularly pronounced in emerging fields such as Artificial Intelligence. Additionally, a lack of visionary leadership and a reluctance to take risks at the executive level further hinder the adoption of new technologies. The absence of ongoing training programs and limited large-scale initiatives exacerbate the problem. Organizations aiming to address the skills gap must focus on enhancing the capabilities of their current workforce.

Technology Challenges

At times, organizations fail to fully comprehend the intricacies of new technologies. The inability to grasp these advancements can impede progress and hinder effective implementation. Enterprises in the APAC region that are implementing AI encounter various operational hurdles. A

significant 59% of these enterprises struggle to dismantle organizational silos, while 55% face challenges in selecting appropriate predictive analytics platforms. Additionally, 49% experience difficulties in finding suitable technology partners. Market dynamics compel innovators and developers to act swiftly, often leading to the deployment of new implementations without adequate testing. A pertinent example is the Galaxy Note 7 incident, where Samsung's pursuit of an efficient battery design resulted in a hazardous product, ultimately necessitating the withdrawal of the technology.

The Disruptive Impact of New Technology

New technology in care for to be disruptive in the short term, realizing its proper potential only when it is perfectly integrated with existing enterprise systems. This integration often requires significant upgrades to current systems and processes, leading to substantial disruptions. New implementations may encounter glitches when subjected to real-time conditions, and it typically need some gap for these steps to constant. For users, the introduction of new technology necessitates a learning curve, which can temporarily hinder productivity. Many enterprises find the disruptive effects of new technology to be daunting, as they cannot afford the temporary business losses that accompany such disruptions.

❖ To mitigate these challenges, enterprises should consider the following strategies:

❖ Assess existing structures for compatibility with the new technologies being evaluated, and include the costs of any necessary database acquisitions in the overall technology budget.

❖ Account for potential productivity losses when calculating the costs associated with new technologies.

❖ Implement effective training programs to assist end-users in transitioning from the old system to the new one.

❖ Maintain transparency regarding the potential negative impacts of new technologies, as concealing these issues can lead to frustration among end users.

❖ Exercise patience with both the technology and the workforce, as initial glitches will eventually be resolved, leading to improved productivity.

End-user Resistance

End users often resist new technology, finding it disconcerting. Many harbour fears of losing their skills or authority, which can hinder the adoption of new systems. The introduction of any new

technology necessitates the presence of an innovation champion to foster its development. However, the inherent internal dynamics within an organization often lead to resistance against these champions. Consequently, individuals who undermine innovation, referred to as innovation assassins, emerge as a common and unavoidable counterpart to product champions. Supervisors and managers may take on the role of these assassins, hindering the implementation of new technologies. To successfully advance innovation, it is essential to have sponsors or champions capable of counteracting the influence of these detractors.

The most effective champion and sponsor possess the following qualities:

- ❖ They are skilled diplomats and adept problem solvers, with a keen attention to administrative details and the ability to navigate conflicting priorities.
- ❖ They recognize the loss of power and other advantages that may accompany technological changes and must proactively intervene to mitigate problems arising from those who may realise obstacles.

In addition to sponsors, the successful adoption of new technology also relies on tech endorsers. It is crucial to engage individuals at every level of implementation to discuss the new technology and articulate its benefits. Furthermore, it is important to retrain employees whose roles may be affected by automation.

For instance, an engineering test equipment manufacturer initiated a program aimed at identifying missing components, addressing a significant challenge posed by omissions and incorrect part selections. The manual identification process was time-consuming, costly, and detrimental to customer relations. The absence of a clear sponsor or champion resulted in a lack of enthusiasm and commitment to the adoption of the new system.

Ownership issues

Often underpin resistance to change. If employees feel disconnected from the new technology or possess that it is being inflicted upon them, they are likely to resist its implementation. Successful technology integration requires empowering end-users. For example, a large warehouse effectively engaged its crane operators to address challenges during the installation of materials handling systems. Ultimately, the successful adoption of technology is contingent upon specific factors at the enterprise level, with a focus on the end-user and the primary objectives. In the service industry,

employees provide intangible products or services and reaching the target that are valuable to customers, clients, and businesses or the general public. Service industries, unlike manufacturing and production industries, do not rely on the sale of material goods and products to earn a profit. Instead, the individuals who work in the service sector focus on completing tasks and providing services.

Types of Services

- Provision of essential public services: Service industries frequently deliver vital services to the community, encompassing sectors such as healthcare, transportation, and education.

- Enhancing customer experiences: Various service sectors, including hospitality, beauty and wellness, entertainment, and fitness, focus on creating enriching experiences that offer emotional benefits and enhance the well-being of their clients.

- Generating employment opportunities: With the increasing mechanization of manufacturing and production, there is a rising demand for workers in the service industry, particularly in distribution and sales. This trend results in an opulence of job opportunities for individuals dedicated to providing essential services to their communities.

- Reflecting economic development: A robust or expanding service sector often signifies a thriving economy. As new services and intangible goods emerge, service industries evolve to meet the evolving needs of consumers and businesses, thereby amplifying their influence on the global economy.

Financial Services

The financial services sector has been at the forefront of adopting cutting-edge information technology and communication systems. In the U.S., banks have seen their IT spending grow at a remarkable compounded annual rate of 8.4 percent. Significant innovations, including management information systems (MIS), distributed computing devices, open systems, and high-speed data networks such as Multiple-system operators (MSOs) and Integrated Services Digital Network (ISDN), have greatly shaped the evolution of IT, with profound effects on the financial services industry.

The advent of optical fiber technology has markedly enhanced communication speeds, with projections suggesting it may reach 2 trillion bits per second in the future. Additionally, the implementation of packet switching methods, such as asynchronous transfer mode, has achieved speeds of up to 622 million bits per second, representing a significant advancement in

communication technology. Furthermore, CD-ROMs, which offer a storage capacity of 1.6 GB, have played a crucial role in facilitating rapid information retrieval and access.

Automated Teller Machines

While ATMs have been around in India for quite some time, they are expected to see considerable growth in popularity. Currently, there are around 400,000 ATMs worldwide, with Japan alone contributing roughly 100,000 of these machines. The newest generation of networked ATMs allows users to perform up to 150 different transactions. These range from traditional cash withdrawals and deposits to more advanced options like fund transfers, stock trades, mutual fund purchases, and even routine payments for services like electricity bills, flight tickets, and hotel bookings. There's also a strong connection between ATMs and credit cards; by June 1993, a staggering 578 million credit cards had been issued globally, facilitating transactions worth US $1,092 billion. By the year 2000, India is poised to become one of the largest markets for credit card transactions.

Virtual Banking

The rise of multimedia technology has made banking services much more accessible to customers. Customer Activated Terminals (CATs), commonly referred to as Kiosks, are interactive multimedia display units housed in compact enclosures that include a computer workstation, monitor, video player, and card reader. This setup allows customers to explore information and use available banking services at their convenience. Some banks are looking into creating 'virtual' branches, where customers can step inside, engage with services through touch screens, and connect with bank staff via video conferencing at any time. This strategy enables banks to reduce their investment in physical locations while still offering customers a full range of banking services in a user-friendly environment.

Home Banking

Smartphones equipped with integrated modems and programmable microprocessors enable customers to access a wide range of financial services from the comfort of their homes.

Electronic Funds Transfer at Point of Sale

Whereas travellers' cheques offered a 'pay-now-buy-later' option and credit cards provided 'buy-now-pay-later' benefits, EFTPOS or debit cards represent a 'buy-now-pay-now' approach

without the need for cash transactions. The user simply presents their ATM card during a purchase, and the EFTPOS system promptly deducts the amount from their bank account.

Smart Cards

Processor-type smart cards, equipped with integrated circuits (ICs) or microchips, provide numerous transactional capabilities, even in remote locations. These smart cards are universally utilized for many purposes, including employee time tracking, cash withdrawals from ATMs, usage of payphones, and the payment of diverse bills.

Electronic Data Interchange

EDI is transforming the way businesses handle financial transactions by eliminating the need for paper. This method is rapidly becoming the go-to approach for transactions between companies and for procuring goods from suppliers. Nowadays, businesses can efficiently manage their bank accounts through corporate banking terminals in their offices, which are seamlessly connected to bank systems. As a result, companies can carry out various activities like fund transfers, cash flow management, and opening letters of credit without any physical documentation. In Singapore, a comprehensive trade network has been put in place to simplify the electronic submission of trade documents from traders to various government agencies, streamlining the communication process as well. This initiative has drastically cut down processing times for documents from a day to around 15 to 30 minutes, leading to estimated annual savings of nearly $1 billion.

Image Processing

Given the document-intensive nature of financial services, particularly in financial markets and banking, image processing technology can significantly enhance operations by promoting a reduction in paper usage. In banking institutions, this technology can facilitate automatic identification and character recognition, enabling the scanning of cheques and documents to extract text and diagrams efficiently.

Expert System

The financial services industry is progressively adopting decision support systems (DSS) or expert systems for various functions, including credit risk assessment, predicting loan defaults, and making investment choices. A notable advancement in this area is the implementation of a 'neural network' approach, which allows the software to learn from examples and experiences. Numerous

banks are currently utilizing neural network programs to identify credit card fraud, while some prominent investment banks employ these systems to analyze stock price trends and forecast their fluctuations.

Advertising, Media & Infotainment

The domains of advertising, media, and infotainment are interconnected, with their development and progress significantly influenced by economic conditions, demographic trends, lifestyle changes, and technological advancements. Additionally, factors such as literacy rates and poverty reduction directly affect the landscape of mass media. Furthermore, the application of information technology is poised to have a profound impact on these service sectors.

Statement of the Problem

The interplay between emerging technologies, employment, and inequality has garnered significant attention in recent years. This heightened interest can be attributed to concerning reports regarding the potential adverse effects of the extensive adoption of new information and communication technologies (ICTs), such as machine learning, production digitalization, robotics, and automated vehicles. The prevailing pessimistic perspective on the implications of these technologies serves as a foundation for a brief review of the literature concerning employment and innovation, focusing on the successful development and commercialization of novel products and processes. A thorough examination of the existing literature reveals a more optimistic outlook for the future: historically, innovations have predominantly favored labor; the literature identifies innovation and technology as key catalysts for economic growth and job creation, particularly in the long term. Numerous scholarly contributions indicate that while innovation may lead to job displacement, it simultaneously generates new employment opportunities.

Adaptability in the workplace is crucial for several reasons. Firstly, employers highly value employees who can effectively navigate changes within the work environment. Furthermore, greater adaptability correlates with increased overall productivity. This is significant, as the ability to manage change smoothly allows individuals to conserve time that would otherwise be spent dealing with stress associated with new challenges. Additionally, adaptability highlights an employee's resourcefulness and demonstrates essential qualities such as leadership, determination, and analytical skills—traits that are highly sought after by employers.

The literature addressing the relationship between new technologies and employment also presents some concerning findings, particularly regarding the non-neutrality of technological change in terms of skills. Emerging technologies often favor specific skill sets while devaluing others, rendering them obsolete and diminishing the demand for such skills among firms that implement these new technologies. The literature characterizes this trend as 'skill-biased technological change.' Additionally, certain scholars have identified that emerging technologies tend to replace routine tasks, coining this occurrence as 'routine-biased technological change.' A significant proportion of routine tasks exists not only within manual labor but also in white-collar and administrative roles. Consequently, the researcher has initiated a study titled "An Examination of Aligning Employee Competencies with Technological Adaptability in the Service Sector of Virudhunagar District."

Scope of the Study

This study examines the adoption of employee skill technology within the service sector of Virudhunagar District. It primarily focuses on the necessary steps for employees in this sector to effectively embrace technology. The service sector encompasses various industries, including banks, the Life Insurance Corporation, non-banking financial companies, the hotel industry, and educational institutions. In today's environment, employees in the service sector are required to possess advanced skills in contemporary technology. This demand arises as service sector organizations strive to minimize their workforce through the implementation of technological solutions. However, employees often encounter challenges in adapting to the latest technologies for managing digital information. This issue is not unique to developing countries like India; it is a global concern. Consequently, the researcher has recognized the need for a comprehensive investigation into this area.

Goals of the Research

The main goals of this research work are outlined as follows:

1. To examine the demographic characteristics of the participants involved in the study.

2. To determine the favorable factors contributing to balancing skills.

3. To investigate the challenges encountered by employees in integrating technology within the service sector.

4. To assess the difficulties faced by employees in the process of technology adoption.

5. To provide recommendations for effectively incorporating technology into the workplace.

Methodology

This study adopts both a descriptive and analytical approach. To gather primary data, an questionnaire method has been selected. Data collection is intended to involve 500 employees from service sector units operating within the designated study district. The sample size will be determined using G-power 3.1. Additionally, respondents will be chosen from various service sector units in the study district, including Government banks and commercial banks, the Life Insurance Corporation (LIC), non-banking financial companies (NBFCs), and educational institutions. Secondary data will be sourced from standard textbooks, academic journals, websites, reports, working papers, and government records.

Scheme of Chapterisation

This study will be organized into six distinct chapters.

I. Introduction and Research Design

II. Literature Review

III. Influence of Technology on the Service Sector

IV. Examination of the Socio-Economic Status and Job Profiles of Respondents

V. Evaluation of the Alignment between Employee Skills and Technological Adaptability in the Service Sector

VI. Summary of Findings, Recommendations, and Conclusions

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Farmers Attitude towards Salt Industry in Vedaranyam of Nagapattinam District

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Abstract

AIM: A marketing strategy is a process designed to reach its target market. The argument on the adoption of marketing strategy is not new, however the research linked to marketing strategy adaptation of historic salt industries situated in the Vedaraniyam south region of Tamil Nadu is not yet explored in detail way for the creation of strengthening the marketing strategy. The salt producers in the sector are under various competitive pressures that underscore their crucial strengths and weaknesses. It can identify the sectors where industry developments are likely to be most significant as either opportunities or threats. This research was designed to conduct a SWOT analysis with selected criteria prior to the development of a marketing plan for salt by its producers.

Keywords: Salt Industry, Marketing Strategy, Salt Satyagraha, Salt Marketing, Salt Producers

Introduction

The roughly six and a half years from the end of 1925 to the start of 1932 are covered in this volume, Salt Satyagraha: The Watershed. In terms of India's fight for independence, it was the most significant time. The Salt Satyagraha, led by Mahatma Gandhi, showed for the first time how successful nonviolent suffering can be in changing the mindset of the British public and government. During the Salt Satyagraha, Lord Irwin served as Viceroy. He was so moved by the satyagrahis' suffering that he wrote to the Secretary of State, stating that he could not govern over India and turn it into a tomb. Irwin emphasized the need for the British government to reconcile with the Indian leaders. London was affected, and Gandhi-Irwin parleys ensued. The Viceroy, who represented the King-Emperor, met on equal footing for the first time with Mahatma Gandhi, also known as "the naked fakir" as Churchill referred to him, who represented the Indian people. Gandhiji was the only Congress leader to attend the Second Round Table Conference as a result of the Delhi agreement that followed.

People in the north, south, east, and west of India all took part in the Salt Satyagraha. It was a turning point in Indian history. The British government laughed at the idea of the Salt March. People in the barracks liked to say, "Let them make as much salt as they want and eat it too." The Empire is not going to move. But as the Salt Satyagraha movement spread to every village and town and millions of people rose up in open defiance, the Empire began to shake. Gandhi was in charge of the political storm like a giant. But it wasn't just a political storm. This event caused a moral and cultural storm that came from India's very core. Nonviolence's power came like a great sunrise in history. It was crystal clear that the growing tide of the people's will had to beat British rule. For me and probably a lot of other people, this was also the moment we learnt about Gandhi and decided to follow him no matter what.

Table 1

Salt Production at Year Wise

Year	Production (million metric tons)
2015	326
2016	352.10
2017	360.5
2018	398.25
2019	422.50
2020	468
2021	470
2022	493
2023	510.23
2024	523

The future of the salt industry It is difficult to forecast the future of the salt industry because of the unpredictable fate of many of it's endues sectors. The sluggish demand and high dependence on weather have prompted many specialists to assume that salt has no great future in many parts of the world like Western Europe. Present capacities of plants producing crystallized salt far exceed the declining needs of the market and, even if the environmental issue regarding the use of chlorine in pulp

The Salt Worker

A salt worker is defined for the purposes of the research as someone who is above eighteen years of age and either directly and physically involved in the manufacture of salt or regards salt as

his/her main activity or vocation. A salt worker is someone who actively participates in either one of the following activities. The type of his/her agreement with the leaseholder Nine. Generally speaking, workers in the Salt Industry in India have socio-economic status as wage laborers or sub-leaseholders. Whatever the situation, he or she must engage in one or all of the following activities: (1) pan preparation; (2) scrapping; (3) piling; (4) salt pan to platform transferring of salt. Leaseholders, loading workers, and labour contractors are the other key players in the salt business. Considered as the main participants in the study are the above defined salt workers.

Vedaranyam Taluk

Large companies in the State bought salt from Vedaranyam's small-scale producers. No more, though, now These days, they like producers from Gujarat, such Jaguar Salts, TATA, Nirma and Bharat. This implies that there are about 3.5 lakh tons of locally produced salt worth Rs 18 crore in storage, with little prospect of it being sold very soon. The Small-scale Salt Manufacturers Association (SSSMA) in Vedaranyam is asking the Union government to implement the Zonal Salt Marketing System, which was in use some two decades ago, in order to help to tide over the issue. Known for its salt business, Vedaranyam on the southern edge of the Nagapattinam district Even Gandhi's demand for a Salt March was expressed here in front of C Rajagopalachari. Although monsoon failure normally benefits salt producers, big private firms have given them the go-by for the second year in a run, causing supplies to build up.

Picture 1 Production of Salt in Vedaranyam

Salt Production: An Overview

At present, India has an abundant production of salt both edible and industrial salt including common salt, powder salt, rock salt etc. There are many uses salt rather than consuming as an ingredient in foods. A large quantity of salt is used for chemical industry as raw material. There are about 6.1 lakh acres of land used for salt production in the country where 11,794 salt producers are engaged in salt. Production in the country (Annual Report, 2016). Public sector producers also play an important role in salt production, but private sector producers hold the maximum production share. The Salt Commissioner's Organization (SCO) classified salt producers into four categories viz. Category-I (Large) holding exceeding 100 acres of land, Category-II (Medium) holding exceeding 10 acres but up to 100 acres of land, Category-III Co-operative society and Category-IV (Small) holding up to 10 acres of land. According to Annual Report published by Salt Department for the year 2015-16, 88.11% of salt producers are small producers followed by 5.72%, 4.82%, and 1.33% are large producers, medium producers, and Co-operative society respectively.

Salt Marketing

Marketing is a crucial component of the production industries, serving as a conduit for interaction between producers and consumers. Nonetheless, the notion of marketing is more expansive. The American Marketing Association defines marketing as the activity, collection of organisations, and processes involved in generating, conveying, delivering, and exchanging offerings that have value for customers, clients, partners, and society as a whole. Consequently, marketing is essential for industrial growth and development. Industries must implement an effective marketing plan to compete in emerging markets. Salt producers in Tamil Nadu encountered marketing challenges due to insufficient demand for salt, leading to a pricing crisis in the state. Nonetheless, large producers may navigate the market effectively due to their control over production costs and substantial market shares (Banumathi & Nadarajan et al. 2015). study were skeptical of the soil

management claims on social media sites, farmers were more willing to consume social media content from respected farmer "influencers". Farmers are increasingly drawing on social media farmer influencers (Zhang et al. 2020) for information and these farmer influencers are the online version of Rogers' (2003) opinion leaders or champions, who have the ability to influence the diffusion of innovations. Influencers are important as they share endorsed opinions on social media platforms, which can help disseminate information quickly and broadly, and change norms about behaviors and practices (Kay et al. 2020). These farmer influencers also provide tangible evidence of the benefits of new management practices and technologies on farm, reducing the perceived risks associated with change (McKitterick et al. 2019). Consistent with studies examining the role of social networks on farming practices (Salvesen et al. 2020), findings from this study show a shift away from traditional sources of information such as broadsheet newspapers and periodicals towards digital and interpersonal sources including farmer influencers, which are often perceived as more credible and trustworthy. The findings from this study provide support for Phillipe and Goodman's (2017) argument that farmers are increasingly becoming celebrities in the same vein as celebrity chefs, and have the ability to influence the food system as a whole. Indeed, farmer networks on Twitter have been found to be quite strong and dense, with farmers tending to group with other farmers, with research scientists and other advisers on the periphery (Meador et al. 2021). These close-knit farmer social networks may enhance exchange of soil knowledge and uptake of innovations through growth of in-group social capital (Rust et al. 2020) The major producers can generate superior quality at a reduced cost and invest significantly in advertising and promotional operations to establish the company's goodwill, a feat unattainable by smaller producers. The salt market problem adversely affects both salt workers and producers, significantly impacting the country's long-term economic growth. Small salt producers are particularly dissuaded from continuing their operations due to the market crisis, which has resulted in minimal or nonexistent profit margins for their products. There is no primary method to determine salt prices in Tamil Nadu, nor is there a specialised department to assist salt producers (Karthik, 2017). By the conclusion of 2017, salt output declined by 20%, adversely affecting small salt producers in the state, where production costs were Rs.600 per tone for those utilizing their own land and Rs.750 per tone for those leasing land. However, the market price decreased to Rs. 500 per tonne. At least 15 small producers have ceased operations due to their inability to endure the crisis (Joseph et al.2017).

The Future of the Salt Industry

The uncertain fate of many of the salt industry's end use sectors makes future predictions challenging. Many experts believe, given the slow demand and strong reliance on weather, salt has no future in many parts of the world including Western Europe. Even if the environmental issue with the use of chlorine in pulp bleaching has been overblown, the tide will not be turned since present capacities of plants producing crystallised salt much exceed the declining needs of the market. Ten million tonnes of demand and supply of world salt still differ significantly.

Suggestions

1. The usage of salt must be limited and accurate by introducing Public Health Awareness Campaigns.
2. The salt marketing companies must Labeling and Nutritional Transparency.
3. The government must ensure the Regulations and Salt Standards among all the salt companies available in India.

Conclusion

Salt marketing—whether aimed at promoting healthier consumption habits, educating the public, or positioning specific salt products—requires a strategic, multifaceted approach that balances education, regulation, and consumer empowerment. For government-led campaigns, the focus should primarily be on public health, promoting responsible salt consumption, and reducing the harmful effects of excessive sodium intake. This can be achieved through public awareness campaigns, clearer food labeling, partnerships with the food industry, and targeted interventions for high-risk populations. When marketed as a product, salt has diverse opportunities to be presented in innovative, consumer-friendly ways that emphasize its quality, health benefits, and culinary versatility. Whether it's through promoting the use of high-quality salts with added minerals or educating consumers on how to reduce sodium intake while maintaining flavor, salt can be positioned as both a health-conscious choice and a flavorful necessity.

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A Study on Impact of Fintech Innovations in the Financial Service Industry with Special Reference to Tamil Nadu

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Abstract

This study investigates the profound impact of fintech innovations on the financial services industry in Tamil Nadu. Fintech, a portmanteau of "finance" and "technology," encompasses a broad range of technological innovations that are revolutionizing traditional financial services. With the nation's highest credit-deposit ratio, the state draws large amounts of foreign direct investment each year for banking, financial services, and insurance (BFSI) services. The four fundamental pillars that fintech companies rely on are infrastructure, diversified and inclusive markets, information technology, and domain expertise in finance. All of these areas are well-established in Tamil Nadu. This study is intentionally covering the digital lending, wealth management, financial inclusion, government initiatives, and challenges and opportunities towards fintech firms.

Keywords: Fintech, Financial Services, Tamil Nadu, Digital Lending, Payments, Wealth Management

Introduction

Fintech, the junction of finance and technology, is rapidly transforming the financial services landscape. The financial services industry has undergone a significant transformation in recent years, driven by rapid advancements in financial technology (Fintech). Fintech innovations have revolutionized the way financial transactions are conducted, enhancing efficiency, accessibility, and customer experience. The integration of cutting-edge technologies such as blockchain, artificial intelligence, big data, and digital payments has disrupted traditional financial models, leading to a more inclusive and technology-driven financial ecosystem.

Tamil Nadu, one of India's most economically vibrant states, has witnessed substantial growth in Fintech adoption, particularly in digital banking, payment systems, and financial inclusion

initiatives. The increasing penetration of mobile banking, e-wallets, and online lending platforms has reshaped the financial landscape, influencing businesses, consumers, and regulatory frameworks. The state has also emerged as a hub for Fintech startups, contributing to job creation and economic development.

This study aims to analyze the impact of Fintech innovations on the financial service industry in Tamil Nadu. It explores the benefits, challenges, and future prospects of Fintech adoption, focusing on key stakeholders such as banks, non-banking financial companies (NBFCs), Fintech startups, and consumers. By assessing how Fintech has influenced financial accessibility, transaction efficiency, risk management, and regulatory compliance, this research seeks to provide valuable insights into the evolving role of technology in the financial sector. The findings of this study will help policymakers, financial institutions, and technology firms make informed decisions to foster sustainable Fintech growth while ensuring security and regulatory compliance.

The country rolled out a coverage in 2021 with the purpose of turning into the main country withinside the U. S. in phrases of increase of recent fintech firms. It is likewise making plans to installation Skill Centres for fintech withinside the country in partnership with foremost institutes and personal firms, which shall function Centres of Excellence (CoEs), to aid entrepreneurs, SMEs, and startups withinside the country. According to the policy, the nation is organising a registry for fintech firms. This registry, controlled with the aid of using the Fintech Cell, will allow the country to song and display the development of companies effectively. It can also be used as a not unusualplace platform to facilitate discussions among fintech gamers to reinforce collaboration and improvement withinside the sector. Meanwhile, in a bid to assist fintech startups, one of the main deep-tech startup hubs spearheaded with the aid of using IIT Madras Incubation Cell (IITMIC) has signed a Memorandum of Understanding (MoU) with the RBI Innovation Hub (RBIH), a wholly-owned subsidiary of the Reserve Bank of India. Under the MoU, the 2 groups will at the same time offer incubation assist and nurture early-degree startups with revolutionary and disruptive answers to boost up their scale-up journey.

Literature Review

This literature review explores the existing body of knowledge on the impact of fintech innovations, with a specific focus on their implications for the financial service industry in Tamil Nadu, India.

Studies by **Demirguc-Kunt et al. (2018) and Beck et al. (2012)** have demonstrated the positive impact of fintech on financial inclusion in developing economies. Fintech solutions have the potential to extend financial services to underserved populations, including those in rural areas and low-income segments, by offering affordable and accessible products.

Research by **KPMG (2020)** highlights the growing importance of customer experience in the financial services sector and the role of fintech in driving this shift. Fintech innovations prioritize customer convenience and personalization, offering seamless digital experiences, 24/7 accessibility, and tailored solutions.

Studies by **McKinsey & Company (2017)** have shown that fintech can significantly reduce costs for financial institutions, leading to increased profitability and improved efficiency. Automation and digitization streamline processes, reducing operational costs for both financial institutions and consumers.

Research by the **World Bank (2019)** emphasizes the potential of fintech to drive economic growth and development in emerging markets. Fintech fosters innovation, creates new job opportunities, and contributes to overall economic development.

Objectives of the Study

- ➢ To study the brief insight on the fintech innovations and how they impact the nation's development through various aspects of digital lending, wealth management, financial inclusion, and government initiatives.
- ➢ To examine the challenges and opportunities of fintech innovations leads to the growth of economic development in India.

Leading Hub for Fintech Innovation Functioning of Financial Services

Digital Lending

- ❖ **Yubi (formerly CredAvenue):** A debt marketplace connecting lenders, investors, and enterprises, facilitating credit flow and empowering SMEs.
- ❖ **Finsire:** A lending infrastructure platform providing loan solutions to salaried individuals through APIs, reducing risks for stakeholders.

Payments And Remittances

- ❖ **M2P Fintech:** A payments infrastructure platform enabling seamless transactions for businesses and consumers, including bill payments, prepaid cards, and cross-border remittances.

Wealth Management

- ❖ **Kaleidofin:** A wealth management platform providing personalized financial advice and investment solutions to individuals, catering to their specific needs and risk profiles.

Insurance Technology (Insurtech)

- ❖ **Policy Bazaar:** A leading online insurance platform offering a wide range of insurance products, simplifying the buying process and providing personalized recommendations.

Financial Inclusion

- ❖ **Various fintech startups:** Focusing on providing financial services to underserved populations, such as microfinance, digital savings, and insurance products tailored to their specific needs.

Government Initiatives

- ❖ **Tamil Nadu Fintech Policy 2021:** Aims to attract fintech firms, develop infrastructure, and foster innovation in the sector.
- ❖ **FinTech City**: A dedicated project to create a hub for fintech companies, offering developed plots, commercial spaces, and residential areas.

Impact of Fintech Innovations

- ➢ Increased Financial Inclusion: Expanding access to financial services for underserved populations.
- ➢ Enhanced Customer Experience: Providing convenient and personalized services through digital platforms.
- ➢ Improved Efficiency and Cost-Effectiveness: Streamlining processes and reducing operational costs for financial institutions.
- ➢ Economic Growth: Fostering innovation and creating new job opportunities in the fintech sector.

Challenges and Opportunities

While fintech presents numerous opportunities, challenges such as data security and privacy concerns, the need for a robust regulatory framework, and the importance of promoting financial literacy among the population must be addressed to ensure the sustainable growth of the fintech sector in Tamil Nadu.

Recommendations

To further capitalize on the potential of fintech in Tamil Nadu, the following recommendations are crucial:

- **Strengthening the Regulatory Framework:** Establishing a clear and supportive regulatory framework that balances innovation with consumer protection and financial stability.
- **Promoting Financial Literacy:** Implementing comprehensive financial literacy programs to educate the public on the benefits and risks of fintech services.
- **Fostering Collaboration:** Encouraging collaboration between fintech companies, traditional financial institutions, and regulatory bodies to drive innovation and address shared challenges.
- **Developing a Skilled Workforce:** Investing in education and training programs to equip the workforce with the necessary skills to thrive in the evolving fintech landscape.
- **Data Security and Privacy:** Addressing concerns related to data protection and cybersecurity.

Growth of Banking on Finance Services

- ➤ Information Technology (IT), especially Data Analytics, has a strong and well-developed ecosystem in Tamil Nadu
- ➤ IT contributed S1.39 lakh crore in exports and employed 7.4 lakh people during 2019-20
- ➤ There are more than 640 startups in Software as a Service (SaaS) and Deep Tech (artificial intelligence, robotics, and blockchain) firms across the state, with a combined revenue of $1 billion and a work force of 15,000 employees
- ➤ Around 51% of the total banking outlets in Tamil Nadu are concentrated in eight districts: Chennai, Coimbatore, Kancheepuram, Madurai, Tiruvallur, Tiruchy, Tirunelveli, and Salem
- ➤ Large domestic enterprises and MNCs in the manufacturing sector conduct their core finance, accounting, and other high-end financial processing out of Chennai and other cities in Tamil Nadu.

Conclusion

This study has underscored the profound and transformative impact of fintech innovations on the financial services industry in Tamil Nadu. Through a comprehensive analysis of key fintech developments, government initiatives, and stakeholder perspectives, it has become evident that fintech is not merely disrupting traditional finance but rather revolutionizing the way individuals and businesses access and utilize financial services. Fintech is poised to play a pivotal role in shaping the future of the financial services industry in Tamil Nadu. By embracing innovation, addressing the challenges, and capitalizing on the opportunities, Tamil Nadu can solidify its position as a leading hub for fintech in India and contribute significantly to the country's economic growth and development. Fintech innovations have revolutionized customer experience by offering convenient, personalized, and 24/7 accessible services, leading to increased customer satisfaction and loyalty.

The adoption of fintech technologies has streamlined processes, reduced operational costs for financial institutions, and improved overall efficiency within the financial services sector. Fintech has fostered innovation, created new job opportunities, and contributed to overall economic growth by promoting competition, improving financial market efficiency, and facilitating capital allocation. This conclusion summarizes the key findings, highlights the importance of government initiatives, addresses the challenges and opportunities, and provides actionable recommendations for the future. It emphasizes the transformative potential of fintech and its contribution to the economic growth of Tamil Nadu. Fintech solutions, particularly mobile banking and digital lending platforms, have significantly expanded access to financial services for underserved populations, including those in rural areas and low-income segments.

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The Factors that affect investors behaviour in the Stock Market

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Abstracts

This study explores the several factors that influence investor behaviour in the stock market, converging on psychological, social, economic, and market-related aspects. It aims to recognize the main drivers behind investment decisions, such as risk tolerance, emotional reactions, macroeconomic conditions, and the impact of societal standards. A total of 114 respondents participated in the survey, with data collected from both primary questionnaires and secondary academic journals, market data sources. The research combines quantitative methods, including regression analysis, with qualitative techniques to examine the psychological and social aspects of investor behaviour. The findings show that risk tolerance and emotions play a substantial role in decision-making, while economic conditions, market volatility, and media influence are also key factors shaping investor sentiment. The study emphasised that many investors take a neutral attitude toward risk, but their decisions are heavily influenced by fear of loss and emotional reactions to market fluctuations. Also, it emphasizes the growing role of digital platforms in financial advice, stressing the importance of accessible tools that combine technical analysis with insights into investor psychology. The findings contribute to a deeper understanding of investor behaviour, providing valuable insights for financial advisors, regulators, and individual investors to improve decision-making strategies. This research helps advance the field of behavioural finance by offering a comprehensive framework for understanding the complex factors that drive investor behaviour in dynamic financial markets.

Keywords: Investor Behaviour, Stock Market, Behavioural Finance, Digital Platforms, Market Volatility

Introduction

The problem of grasping stock market investor behaviour has annoyed the interest of researchers and experts similar; we may learn more about the main elements influencing trading patterns, risk preferences, investor decisions, and total market participation by examining this data. The process of designing the questionnaire and gathering data guarantees a thorough analysis of the

subject. We can capture a wide range of viewpoints and improve the reliability of the results by collecting a sizable number of replies. We can learn vital data about the intricate processes that control shareholder behaviour in the store market via this investigation. The data analysis process will yield significant insights that can assist investors in making more informed investing choices. Also, by investigative areas in which changes or interventions may be made, knowledge of the variables influencing investor behaviour can help to improve market efficiency. The overall goal of this primary research study, which included 100 replies to a questionnaire, is to add to the body of information already available in the area and shed light on the aspects that affect financier behaviour in the stock marketplace. The study also intends to provide investors with practical consequences.

Investor Behaviour in the Stock Market in India and Its Impact

Stock market behaviour in India is influenced by a diversity of factors, which can be broadly classified into internal and external variables. Internal factors are related to the characteristics of individual investors. These include risk acceptance, where an investor's willingness to take risks shapes their investment choices, with some favouring low-risk assets while others pursue high-risk, high-return equities. Financial objectives, such as asset protection, income generation, or capital appreciation, also play a vital role in shaping investor behaviour, as achieving different goals requires varying time prospects, asset allocations, and strategies. Still, knowledge and experience significantly impact decision-making, with experienced investors often making more informed choices due to their ability to analyse market dynamics and financial data. Psychological biases, such as herd mentality, overconfidence, and recentness bias, can lead to irrational decision-making and contribute to market froths or herd behaviour. Also, an investor's time horizon influences their approach, with long-term investors focusing on fundamental analysis and growth possible, while short-term traders emphasize market timing and technical analysis.

External factors also play a significant role in shaping investor behaviour. Economic conditions, such as GDP growth, interest rates, inflation, and unemployment, can bolster investor confidence and encourage stock market participation when favourable. Market volatility, characterized by regular price swings, often leads to careful behaviour, increased risk dislike, and a shift to defensive investment strategies. Regulatory policies, including tax changes, trading rules, and investor protection measures, also influence market activity, with favourable regulations promoting investment and unfavourable ones discouraging participation. News and media coverage have a profound impact on investor sentiment, with positive news promotion confidence and bullish behaviour, while negative

news can trigger fear selling and heightened market volatility. Corporate performance, including financial results, earnings reports, and governance decisions, directly affects investor assurance, as strong performance attracts investors, while weak performance deters them.

The behaviour of investors knowingly impacts stock market dynamics. Positive investor sentiment drives increased demand for stocks, leading to price appreciation and inclusive market growth. Equally, negative sentiment can result in selling pressure and declining stock prices. Investor activity also affects trading volumes, market efficiency, and liquidity, underscoring the crucial role that individual and collective investor actions play in shaping the stock market.

Literature Review

The behaviour of investors in the stock market has been broadly studied, with research importance the influence of psychological, behavioural, and socioeconomic factors. Balajiyer and Kumer (2002) explored the psychological and behavioural variety of Indian investors, emphasizing fundamental mismatches in valuation as a key determinant of market dynamics. Yahyazadehfar, Zail, and Shababi (2009) recognized personal, psychological, political, and economic factors as the most substantial influences on investor decisions in the Tehran Stock Exchange, with psychological and political elements contributing 64% and 79%, respectively, to financial decision-making. Singh and Bedi (2011) used behavioural finance to analyse the decision-making process of 150 Punjabi consumers, identifying areas for development in SEBI and stock exchanges to meet investor expectations. Similarly, Das (2012) emphasized that small investors in Guwahati consider financial statements, public information, and profitability metrics while selecting stocks. Gupta and Ahmed (2017) found that behavioural biases such as loss dislike, people behaviour, and overconfidence significantly influence investors in Delhi/NCR, emphasizing the need for financial planners to address these biases.

Further studies extended the scope to international contexts and contemporary challenges. Phan and Zhou (2014) emphasized the impact of psychological characteristics like overconfidence and people behaviour on investment attitudes, moderated by gender. Johnson (2020) and Thompson (2019) discovered how financial news and risk perceptions shape investor decisions, underlining the role of media biases and investor sentiment in market volatility. The COVID-19 pandemic also revealed new dimensions of investor behaviour, as emphasized by Inggrit, Wijaya, and Zunairoh (2021), who identified the relevance of heuristics, market trends, and prospect theory in the Indonesian stock

exchange during the crisis. Prasad and Bajracharya (2021) surveyed the interplay between behavioural factors and investment performance, finding that risk, tax benefits, and returns are critical determinants for Indian investors, with equities being the favoured choice. Collectively, these studies underscore the complex interplay of psychological, social, and economic variables in determining investor behaviour across diverse markets.

Research Gap

The gaps in the empathetic of stock market investor behaviour underscore the need for further exploration, mainly in emerging markets and underexamined situations. While key elements such as risk acceptance, psychological biases, and macroeconomic factors are well-documented, there remains a lack of inclusive insight into how these dynamics interact across different market conditions and cultural settings (Balajiyer & Kumer, 2002; Yahyazadehfar et al., 2009). For instance, the interplay between cognitive biases and social influences on investor decision-making has yet to be fully explored in emerging markets, where behaviour may separate from established theories (Phan & Zhou, 2014; Gupta & Ahmed, 2017). Also, research on currency fluctuations and their direct effects on stock market investments is inadequate, often treating currency and equity markets as distinct entities (Thompson, 2019).

Moreover, while macroeconomic variables are acknowledged as significant, there is limited understanding of how investor sentiment changes in response to complex and rapidly changing economic conditions (Singh & Bedi, 2011; Das, 2012). The influence of social and psychological variables, particularly in the context of digital and social media, remains underexamined, leaving room for extra inquiry into the ways modern communication channels shape market behaviour (Johnson, 2020; Inggrit et al., 2021).

Objectives of the Study

1. To Determine the main elements affecting stock market investor behaviour.
2. To Analyse the benefits and risks in the currency market.
3. To Study how macroeconomic variables affect investor sentiment.
4. To Examine the things of psychological and social variables on decision-making.

Scope of the Study

The aim of the wide and multidimensional research on the elements influencing stock market investor behaviour is to know the psychological, economic, and social features that change people and organizations when they make investment decisions. For of the growing complexity of commercial markets and the substantial influence of shareholder behaviour on asset pricing, market dynamics, and economic stability, this investigation is decisive.

Statement of the Problem

The elaborate nature of financier behaviour in financial markets is wrought by a throng of factors, encompassing psychological, social, economic, and market-specific aspects. It is important to comprehend these elements in order to forecast market trends and funding investors in making intelligent choices. The resolution of this education is to determine and examine the major issues inducing depositor behaviour in the stock market, the rewards and drawbacks of trading currencies, the guidance of macroeconomic variables on investor sentiment, and the encouragement of public and psychological factors on decision-making.

Need of the Study

Global financial systems trust deeply on the currency and stock markets, and investor actions there can have far-reaching effects. These marketplaces are attractive more explosive and complicated, so it's critical to comprehend what influences investment decisions. Insights into the factors driving investor behaviour are essential aimed at this study to help financial consultants, legislators, and individual investors make more educated decisions. The results may theoretically add to the body of information in the field of behavioural finance.

Limitation of the Study

The study has some limitations that could impact the generalizability and accuracy of its findings. The sample size of 114 respondents may not be large enough to fully represent the broader investor population, limiting the extent to which the results can be generalized. Also, if the sample is geographically focused, the findings may not be applicable to investors in other regions. The study's cross-sectional nature means that data was apprehended at only a single point in time, making it incredible to track changes in investor behaviour over time. Also, the reliability of secondary data sources and the potential biases inherent in self-reported survey data could affect the accuracy of the

results. The study focused on selected psychological, social, and macroeconomic variables, which may have overlooked other factors that could also influence investor behaviour.

Research Methodology

Sample Size

The study focuses on 114 respondents, representing a cross-section of investors whose behaviours and decision-making patterns are analysed.

Data Collection

- **Primary Data**: Data is collected through surveys with the structured questionnaires specifically designed to capture details about: Investor demographics, Attitudes toward investment, Risk tolerance, and Decision-making processes
- **Secondary Data**: Journal articles, Financial reports, Market data and Relevant literature

Data Analysis Tools

- **SPSS**: SPSS Software Used for advanced statistical analysis, including reliability testing with Cronbach's alpha and regression analysis.
- **Microsoft Excel**: Used for data organization, computation of descriptive statistics, and initial data analysis.

Hypotheses

H₀: Psychological factors such as risk tolerance and emotional responses have no important impact on investor behaviour in the stock marketplace.

Table 1.1 Demographic Profile

	Particulars	Respondents	Percentage
Gender	**Males**	63	55.3
	Females	51	44.7
Age	**20-30**	104	91.2
	30-40	9	7.9
	50- above	1	0.9
Education	**Under graduation**	28	24.6
	Post-graduation	81	71.1
	Other	5	4.4

Occupations	**Student**	75	65.8
	Self employed	10	8.8
	Private employee	23	20.2
	Government employee	6	5.3
Incomes	**2.5 lakh**	73	64
	2.5 to 5 lakhs	20	17.5
	5 to 7.5 lakhs	11	9.6
	7.5 to 10 lakhs	2	1.8
	10 & above	8	7
Marital status	**Unmarried**	97	85.1
	Married	17	14.9

The sample reproduces a minor male majority and a strong representation of younger investors, particularly in the 20–30 age group, signifying a focus on younger demographics. A substantial portion of respondents are highly educated, with most holding postgraduate degrees, and a large number are students, representative an academic bias in the sample. The income distribution exposes that the majority fall within lower income brackets, earning up to ₹2.5 lakhs annually, importance a focus on lower to middle-income groups. Also, the high proportion of unmarried respondents recommends the findings mainly apprehension the views of single individuals, shaping the study's perceptions accordingly.

Table 1.2 Reliability Statistics

Metric	Value
Cronbach's Alpha	0.793
Number of Items	24

Table 1.3 Scale Statistics

| Metric	Value
Mean	68.65
Variance	107.752
Standard Deviation	10.38
Number of Items	24

Table 1.4 Item-wise Cronbach's Alpha Analysis

Item	Cronbach's Alpha
The long need you remained investing in the stock marketplace.	0.788
In what way much do company financial statements influence your investment choices?	0.782
How important are stock analyst recommendations in your investment decisions?	0.773
How often do you review your investment portfolio?	0.777
How much do technological advancements in trading platforms impact your investment behaviour?	0.773
How frequently do you attend investment seminars or webinars?	0.78
In what way would you level your knowledge of the currency market?	0.774
What do you believe are the Main benefits of participating in the Currency market?	0.787
What do you believe are the Main risks of participating in the Currency market?	0.8
How important is it for you to understand the potential benefits before making an investment?	0.809
Do you reflect tax inferences when making investment decisions?	0.809
To what range do you discuss investment decisions with family or friends?	0.78
How frequently do you follow investment recommendations from friends or family?	0.778
In what way much do societal norms and cultural attitudes towards wealth and investment influence your decisions?	0.775
How do societal trends or prevailing market opinions affect your investment choices?	0.772
How would you outline your general attitude towards risk in investing?	0.78
When making investment choices, how much does fear of loss impact your decisions?	0.785
How contented are you with making investments that might lead to significant gains or losses?	0.773
Do you feel stress or anxiety when your investments experience significant fluctuations?	0.792
In what way often do you rely on emotional responses rather than rational analysis when making speculation decisions?	0.81
How do you perceive the impact of currency exchange rates on your investment strategy?	0.797
How often do you regulate your investment plan based on economic forecasts or market predictions?	0.797
How do macroeconomic conditions affect your overall investment sentiment?	0.797

The overall Cornbrash's Alpha value for the 24 items is 0.793, which indicates a good level of internal reliability. These incomes that the questions used in the review are reliably measuring the underlying concept of investor behaviour The survey demonstrates a good level of internal reliability, with a Cornbrash's Alpha of 0.793. This indicates that the items used are efficiently measuring investor behaviour in a dependable manner. None of the items significantly weaken the reliability of the survey, and the difference in responses is moderate, signifying a well-constructed questionnaire.

Table 1.5 Risk Tolerances

Particular	Respondent	Percentage
Very Risk	9	7.9
Risk-Averse	20	17.5
Neutral	52	45.6
Tolerant of Risk	24	21.1
Very Risk-Tolerant	9	7.9
Total	**114**	**100**

Chart 1.1 Risk Tolerances
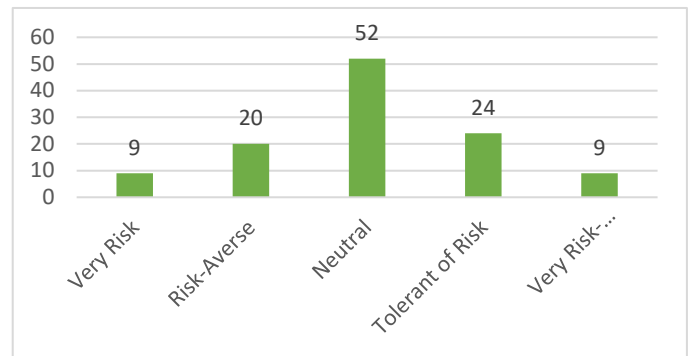
The table 1.5 shows that Most respondents (45.6%) consider themselves neutral in terms of risk tolerance, 21.1% of respondents consider themselves tolerant of Risk & 7.9% are Very risk tolerant. This indicates a balanced approach to risk-taking among the majority.

Table 1.6 Fear of Loss

Particular	Respondent	Percentage
Not at all	7	6.10
Slight	25	21.90
Moderately	43	37.70
A lot	25	21.90
Really	14	12.30
Total	**114**	**100**

Chart 1.2 Fear of Loss
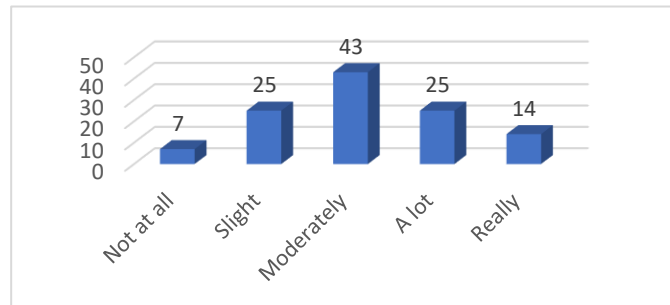
The table 1.6 shows that the fear of loss 37.70% reporting moderate levels of fear, Slight fear is 21.90% and 6.10% are not at all fear for the loss. This recommends that while particular investors are careful, fear of damage is not high**.**

Table 1.7 Comfort with Risk

Particular	Respondent	Percentage
Very uncomfortable	11	9.60
Uncomfortable	18	15.80
Neutral	44	38.60
Comfortable	36	31.60
Very comfortable	5	4.40
Total	**114**	**100**

Chart 1.3 Comfort with Risk
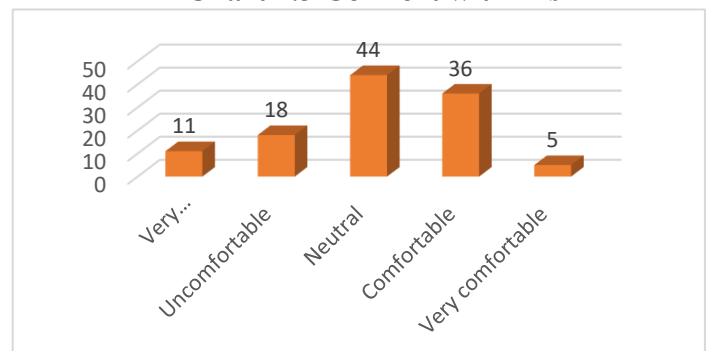
The chart 1.3 indicates that comfort with risk is also neutral 44 respondends, with 38.6% feeling neutral about their comfort level, 36 and 05 respondents are in comfortable and very comfortable

remaining are not uncomfortable with their investment practice. This aligns with the general trend of a balanced attitude toward risk.

<table>
<tr><td colspan="3" align="center">**Table 1.8 Stress level**</td></tr>
<tr><td>**Particular**</td><td>**Respondent**</td><td>**Percentage**</td></tr>
<tr><td>Very frequently</td><td>19</td><td>16.70</td></tr>
<tr><td>Frequently</td><td>64</td><td>56.10</td></tr>
<tr><td>Occasionally</td><td>31</td><td>27.20</td></tr>
<tr><td>**Total**</td><td>**114**</td><td>**100**</td></tr>
</table>

Chart 1.4 Stress level
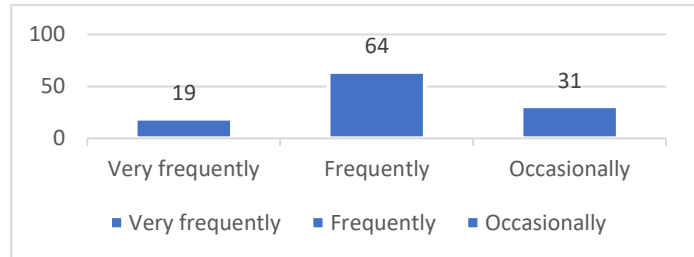
The above table 1.8 shows that average stress level connected to investment is relatively low (2.11), with new than half of the respondents 56.1% frequently experiencing stress. Occasionally investors are 27.20% and 16.70% of respondents are investing very frequently. This can indicate that though investors are stressed, it remains not at an extreme level.

Table 1.9 Emotional Responses

Particular	Respondent	Percentage
Always	9	7.00
Often	18	15.80
Sometimes	54	47.40
Rarely	17	14.90
Never	17	14.90
Total	**114**	**100**

Chart 1.5 Emotional Responses
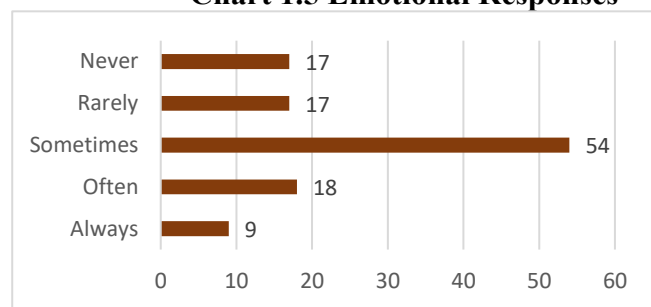
The above chart 1.5 indicates that emotional response to investment results averages at 3.13, with nearly half 47.0% of respondents sometimes being influenced by emotions, 14.90% of investors are rarely and never emotional remaining are always and often investors it indicating that emotions do play a role but are not always dominant.

Table 1.10 Investment Frequencies

Particular	Respondent	Percentage
Less than 1 year	84	73.70
01-05 years	25	21.90
06-10 years	4	3.50
More than 10 years	1	0.90
Total	**114**	**100**

Chart 1.6 Investment Frequencies
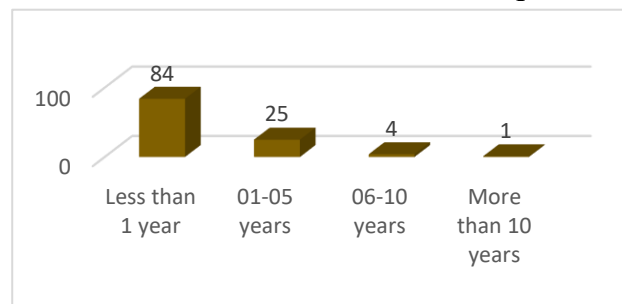
The table 1.10 shows that investment frequencies 73.7%of respondents are must been financing for less than a year, 0.90% of respondent are investing in more than 10 years it indicating a relatively new group of investors.

Table 1.11 Portfolio review Frequency

Particular	Respondent	Percentage
Never	24	21.10
Monthly	49	43.00
Quarterly	21	18.40
Annually	15	13.20
More than once a year	5	4.40
Total	**114**	**100**

Chart 1.7 Portfolio review Frequency
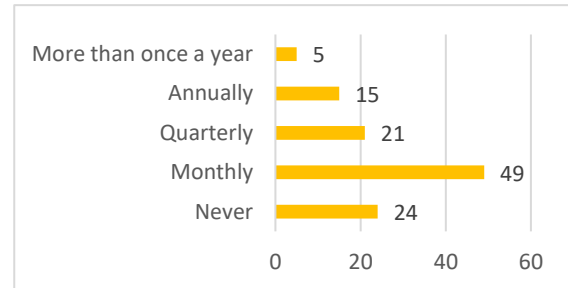
The above chart 1.7 indicates that portfolio review frequency monthly reviews are the most common, with 43.0% of respondents checking their portfolios monthly, more than once a year respondents are 4.40% it indicating active engagement in managing their investments.

Table 1.9 Descriptive Statistics

Variable	Mean	Median	Std. Deviation	Range	Min	Max	Most Frequent Category	Frequency	%
Risk Tolerance	3.04	3	1.013	4	1	5	Neutral	52	45.60%
Fear of Loss	3.12	3	1.082	4	1	5	Moderately	43	37.70%
Comfort with Risk	3.05	3	1.021	4	1	5	Neutral	44	38.60%
Stress Level	2.11	2	0.657	2	1	3	Frequently	64	56.10%
Emotional Response	3.13	3	1.096	4	1	5	Sometimes	54	47.00%
Investment Frequency	1.32	1	0.585	3	1	4	Less than 1 year	84	73.70%
Portfolio Review Frequency	2.37	2	1.091	4	1	5	Monthly	49	43.00%

The table 1.9 shows that descriptive statistics data analysis reveals several key insights into investor behaviour. Most respondents (45.6%) display a neutral stance toward risk tolerance, with an average score of 3.04, indicating a balanced approach to risk-taking. Also, comfort with risk mirrors this neutral outlook, with 38.6% of respondents reporting a neutral stance. Fear of loss, with an average score of 3.12, shows that while some investors are careful, the fear is not prodigiously high, as 37.7% report moderate levels of concern. Stress related to investments is generally low, with an average score

of 2.11, although more than half (56.1%) frequently experience stress, signifying it remains manageable. Emotional responses play a role in investment decisions, as evidenced by an average score of 3.13, with 47.0% of respondents being occasionally influenced by emotions. Most respondents (73.7%) are relatively new investors, having invested for less than a year, and 43.0% review their portfolios on a monthly basis, reflecting active engagement in managing their investments. Overall, the data indicates that investors tend to maintain a balanced view toward risk and are moderately influenced by fear and emotions, while demonstrating consistent activity in managing their portfolios.

Table 1.10 Regression Analysis

Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate	F-Value	Significance (Sig.)
Investment	0.469	0.22	0.184	0.528	6.079	0
Portfolio Review	0.421	0.177	0.139	1.012	4.657	0.001

The table 1.10 shows that the regression analysis for Investment reveals a moderate positive correlation, with an R value of 0.469. The R Square value of 0.220 indicates that 22% of the variance in the dependent variable is explained by the predictors. This model is statistically significant, with a p-value less than 0.001, signifying that the independent variables have a meaningful impact on investment frequency. For Portfolio Review, the R value of 0.421 also shows a moderate positive correlation. The R Square value of 0.177 indicates that the predictors explain 17.7% of the variance in this dependent variable, which is a smaller proportion compared to the Investment model. Nevertheless, the model is statistically significant with a p-value of 0.001, indicating that the independent variables significantly influence the of portfolio reviews.

Findings

The analysis of investors behaviour in the stock market reveals that it is influenced by a range of internal and external factors. Internal factors such as risk tolerance, financial goals, investment experience, psychological biases, and investment horizon significantly impact decision-making. Externally, macroeconomic conditions, market volatility, regulatory fluctuations, media exposure, and corporate performance play vital roles in shaping investors behaviour. Risk tolerance and financial objectives are particularly significant, with high-risk tolerant investors dropping towards speculative investments, while risk-averse individuals prefer safer options. Economic situations, like inflation and unemployment rates, directly affect investors sentiment and market contribution. Media coverage and

corporate performance also drive short-term market behaviour, influencing stock prices and investor confidence. Also, the financial advisory industry is developing with the rise of digital platforms and robo-advisors, offering greater convenience while facing challenges related to regulation and technology. The study's demographic findings show a mainly young, well-educated sample with a large proportion of students, most of whom earn up to 2.5 lakhs annually. A significant number of respondents are new to investing, with various reviewing their portfolios regularly. While most investors feel neutral about risk, a considerable portion involvements stress and emotional responses to market fluctuations. Recommendations for improvement include providing more education on currency markets, organizing seminars on risk management, and developing tools to help investors manage stress and make informed, balanced decisions created on both technical and behavioural insights.

Conclusion

This study emphasises the complex nature of investors behaviour, shaped by both personal traits and external macroeconomic factors. Investors are influenced by risk tolerance, experience, psychological biases, and market situations like economic performance, regulations, and media. These factors guide whether investors take high-risk actions, approve conservative strategies, or respond emotionally to market changes. Understanding these influences is vital for both investors and financial advisors. Awareness of personal biases and economic indicators can lead to better decision-making, aligning actions with long-term goals rather than short-term market shifts. The rise of digital platforms in financial advising offers more available tools but also poses challenges in maintaining modified, effective advice. In conclusion, identifying the internal and external forces shaping investor behaviour is key to personal financial achievement and market stability, development more informed and balanced investment decisions.

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A Study on Customer Satisfaction in Co-Optex in Virudhunagar

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Abstract

This study investigates customer satisfaction levels in Co-optex, a leading cooperative textile retailer, in Virudhunagar. The research aims to identify key factors influencing customer satisfaction and assess the performance of Co-optex in meeting customer expectations in terms of product quality, pricing, service, and store ambiance. A mixed-methods approach was employed, combining survey data collected from a diverse customer base with observations and interviews to provide a comprehensive understanding of customer perceptions. The results indicate that factors such as product quality, variety, affordability, and staff behavior significantly affect customer satisfaction. However, areas such as service responsiveness and modernizing store facilities emerged as requiring improvement. The study offers actionable recommendations for enhancing customer satisfaction and building long-term loyalty. These include improving product assortment, training staff, adopting technology-driven solutions, and launching customer-centric programs. The insights from this research can guide Co-optex in crafting strategies to sustain its competitive edge and strengthen its position in the retail textile market of Virudhunagar.

Introduction

Customer satisfaction is a critical factor determining the success and sustainability of retail businesses, including cooperative institutions like Co-optex. Co-optex, the Tamil Nadu Handloom Weaver's Cooperative Society, has been promoting and marketing handloom products for decades, ensuring livelihood for weavers while offering high-quality products to customers. This study explores customer satisfaction levels in Co-optex's Virudhunagar branch, aiming to understand customer needs and improve service quality. It enhances the customer satisfaction and assesses the performance of Co-optex in meeting customer expectations in terms of product quality, pricing, service, and store ambiance.

Need of the Study

In today's competitive retail environment, understanding customer satisfaction is paramount for the long-term success of any business. Co-optex, as a prominent cooperative textile outlet in Virudhunagar, needs to continually assess its customer satisfaction levels to stay competitive and relevant. By measuring customer satisfaction, Co-optex can gain insights into the factors that influence consumer behavior, purchasing decisions, and brand loyalty. Identifying factors that enhance customer satisfaction, such as personalized service, product diversity, or competitive pricing, can help increase customer retention, leading to sustained growth and profitability. A positive shopping experience could make a significant difference in customers' decisions to return to Co-optex.

Statement of the Problem

Co-optex, a prominent cooperative society based in Tamil Nadu, operates as a major retailer of handloom and textile products, particularly in Virudhunagar. However, there is limited empirical research that specifically investigates the level of customer satisfaction with Co-optex stores in Virudhunagar. While Co-optex has a loyal customer base, it is essential to understand whether customer expectations are being met, and if not, where improvements can be made. Factors such as product quality, pricing, customer service, store ambiance, and brand perception may all contribute to customer satisfaction, but there is a need to systematically measure these factors.

Objectives of the Study

- ❖ To analyze the knowledge level of the customer about Co-optex.
- ❖ To elicit the customers opinion about the price of the product.
- ❖ To study whether satisfied with their service.
- ❖ To identify the customer satisfaction level about   Co-optex.

Scope of the Study

This research work is basically exploratory in nature. The aim of the research work is to find out the performance of Co-optex showrooms in Virudhunagar town. To assess the performance of the showrooms, the research component is data from consumers of the Co-optex showrooms.

Similarly, age, gender, occupation, marital status, monthly income, last year purchase from Co-optex showrooms, preference of category of Co-optex products, annual expenditure on Co-optex products of the consumers were the factors used to assess the performance of the Co-optex showrooms from consumers point of view.

Research Methodology

Type of survey: The sample survey with a sample of 100 respondents is taken for this study

Sampling method: The convenient sampling method from non-probability sampling method is adopted.

Sample area: The geographical area of the study conforms is to Virudhunagar district Sampling

Data Analysis and Interpretation

Chi-Square Test

H0=There is no association between gender and will you recommend others.

H1=There is association between gender and will you recommend others.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.018ᵃ	1	.892
Continuity Correctionˢ	.000	1	1.000
Likelihood Ratio	.018	1	.893
Fisher's Exact Test			
Linear-by-Linear Association	.018	1	.893
N of Valid Cases	150		

Sources: Primary data

Interpretation

The table shows that relationship between gender and recommend others. As the calculated P VALUE 1.000 is more than the significance level of 0.05 the null hypothesis is accepted. There it is concluded that there is no gender and recommend others.

Friedman Test

H0=There is no difference between the mean ranks.

H1= There is difference between the mean ranks.

S.no	Particular	Mean rank	Chi-Square value	Significant value	Rank
1	Service	3.13			4
2	Price	2.61			2
3	Quality	2.40	80.691	.000	1
4	Location	2.95			3
5	Display	3.90			5

Source: Result completed through SPSS.

Interpretation

The above table shows that FRIEDMAN TEST. The significant value (.000) is less than P-value (0.05) so null hypothesis rejected. Therefore there is difference between the mean ranks.

The above table shows that FRIEDMAN TEST. Quality got first rank, price got second rank, location got third rank, service got fourth rank, display got fifth rank.

Findings

Chi-square test: The table shows that relationship between gender and recommend others. As the calculated P VALUE 1.000 is more than the significance level of 0.05 the null hypothesis is accepted. There it is concluded that there is no gender and recommend others.

Friedman Test: The above table shows that FRIEDMAN TEST. The significant value (.000) is less than P-value (0.05) so null hypothesis rejected. Therefore there is difference between the mean ranks. The above table shows that FRIEDMAN TEST. Quality got first rank, price got second rank, location got third rank, service got fourth rank, display got fifth rank.

Suggestions

To achieve the estimated target in Retail Sales, Co-optex has to conduct monthly exhibition in all important showrooms by displaying products suitable for a particular season, like mild winter and hot summer.

Co-optex should entrust the production of value-added materials like bags, kids wear, readymade garments etc to the Self - Help Groups (SHGS) and market their products such as Mattresses, Pillows, Children's bed, Children's cotton / wollen garments, Baby cradle Diapers, Napipads, Ladies handbags, Cell phone covers etc.
• Award to the showroom shall be announced if they have that achieved sales target. This would encourage the showrooms to register profit.

Conclusion

The primary data and secondary data analysis of the study concludes that the volume of purchase, sales and profit of Co-optex showroom in the study area are highly fluctuating during the

study period. There exists a strong relationship between volume of sales and profits earned by the Co-optex showroom during the study period. The quality of services rendered by the   Co-optex showroom is satisfactory to all the categories of customers during the study period. If the suggestions given in the study are implemented the overall performance of the Co-optex showrooms can be improved.

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Generative AI: Redefining Creativity and Automation in the Age of Innovation

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Abstract

Generative AI is transforming the landscape of creativity and automation, marking a significant shift in how machines interact with human-driven processes. This technology, powered by advanced algorithms and deep learning models, enables AI systems to not only assist in tasks but actively contribute to innovation across various fields. From generating original art and music to designing innovative products and solving complex scientific problems, generative AI is redefining the boundaries of what is possible. Its applications span a wide range of industries, including art, entertainment, healthcare, and manufacturing, where it is streamlining processes, enhancing creativity, and improving decision-making capabilities. Despite its vast potential, generative AI raises important ethical and societal questions. Issues such as the authenticity of AI-generated content, intellectual property rights, and the potential for bias in AI models are central to ongoing debates. Moreover, as AI continues to evolve, there are concerns about its impact on employment and the role of human creativity in an increasingly automated world. This paper explores these challenges while offering insights into the future trajectory of generative AI, emphasizing its transformative power and the need for responsible development. Ultimately, generative AI presents both exciting opportunities and complex dilemmas that will shape the future of innovation and automation.

Keywords: Ethical Considerations, Innovation, Deep Learning, Intellectual Property, Artificial Intelligence, Machine Learning.

Introduction

Generative AI represents a groundbreaking shift in the way machines interact with creative processes, moving beyond mere automation to actively contribute to the generation of novel content and innovative solutions. With its roots in advanced machine learning algorithms, particularly deep learning and neural networks, generative AI enables machines to produce human-like outputs, from text and music to images and even scientific discoveries. This evolving technology is not only enhancing traditional creative industries but is also fostering new forms of artistic expression and problem-solving capabilities that were once considered exclusive to humans. By leveraging massive datasets, generative models can learn intricate patterns and generate original outputs that are both diverse and sophisticated, reshaping industries ranging from entertainment and design to healthcare and manufacturing.

As generative AI continues to develop, it is also becoming an integral tool in automation, providing efficiencies and capabilities that were previously unattainable. In areas such as business process optimization, personalized healthcare, and automated content generation, AI is streamlining workflows, improving accuracy, and accelerating decision-making. This transformation extends to sectors like product design, where AI systems assist in creating prototypes and solutions with remarkable speed and precision. Furthermore, its integration into daily workflows is enabling professionals to focus more on higher-level creative and strategic tasks, while AI handles repetitive or technical functions, offering a new paradigm in workplace efficiency.

However, the rise of generative AI brings with it a host of ethical challenges and societal implications that must be carefully considered. Issues such as the potential for bias in AI-generated content, the question of authorship and intellectual property, and concerns about the displacement of human creativity in various industries are central to ongoing discussions. As generative AI becomes more advanced, it is crucial to establish frameworks that ensure its responsible use, balancing innovation with ethical responsibility. This paper aims to explore the transformative impact of generative AI, examining its applications across various fields, the challenges it poses, and the opportunities it presents in an increasingly automated and creative future.

The Evolution of Generative AI: A Historical Overview

The evolution of generative AI can be traced back to the early days of artificial intelligence, where the focus was primarily on rule-based systems and symbolic reasoning. Early AI models were limited to pre-programmed tasks and lacked the ability to create new content independently. In the

1980s and 1990s, AI research began to incorporate neural networks, which mimicked the brain's structure, allowing for more flexible learning processes. However, it wasn't until the advent of deep learning in the 2000s that generative AI began to truly emerge. The development of deep neural networks and techniques such as backpropagation and convolutional networks opened up new possibilities for machine learning, enabling models to learn complex patterns and generate outputs that were increasingly realistic and sophisticated.

The breakthrough moment for generative AI came with the introduction of Generative Adversarial Networks (GANs) in 2014 by Ian Goodfellow and his collaborators. GANs marked a turning point in AI research, as they introduced a framework where two neural networks — a generator and a discriminator — were trained in tandem to produce increasingly convincing outputs, from images to text. This innovation sparked a wave of progress, with subsequent advances in AI models like variational autoencoders (VAEs) and transformer-based models, such as OpenAI's GPT series, enabling machines to generate highly coherent text, music, and even complex visual content. Over the last decade, generative AI has rapidly advanced, leading to applications across industries, from content creation and design to drug discovery and beyond, marking a new era in both creativity and automation.

Key Technologies Powering Generative AI: Algorithms and Models

The key technologies powering generative AI are deeply rooted in machine learning, particularly in the development of deep learning algorithms. At the core of generative AI are neural networks, which consist of layers of interconnected nodes designed to mimic the way the human brain processes information. These networks are trained on large datasets to recognize patterns and generate new, unseen outputs. One of the foundational models in generative AI is the Generative Adversarial Network (GAN), introduced by Ian Goodfellow in 2014. GANs consist of two neural networks — a generator and a discriminator — which work in opposition to each other. The generator creates synthetic data, while the discriminator evaluates it, improving the quality of the generated content over time. This adversarial process leads to highly realistic outputs, whether in images, audio, or text.

Another important model in generative AI is the Variational Autoencoder (VAE), which is often used for generating images and learning complex latent variables. VAEs work by encoding data into a compressed representation (latent space) and then decoding it back into a similar format. This process helps the model to learn and generate new instances that are statistically similar to the

original data. VAEs have found applications in fields such as image synthesis, denoising, and anomaly detection, providing another powerful tool for generative tasks. These models, when paired with vast datasets, can produce a range of creative outputs by learning the underlying structure of data.

More recently, transformer-based models have become the backbone of generative AI, particularly for tasks involving natural language processing (NLP). These models, including GPT (Generative Pretrained Transformer) by OpenAI and BERT (Bidirectional Encoder Representations from Transformers) by Google, rely on attention mechanisms to understand the context of a sequence of data, allowing them to generate coherent and contextually appropriate text. These models have revolutionized text generation, enabling the creation of everything from articles to poetry and even code. By training on enormous datasets and using a vast number of parameters, transformer models are capable of generating complex and nuanced outputs with remarkable fluency. Collectively, these technologies — GANs, VAEs, and transformers — represent the cutting-edge of generative AI, pushing the boundaries of what machines can create and automate across various domains.

Fig 1. Generative AI Tools

Creative Applications of Generative AI Across Industries

Generative AI has found diverse and impactful applications across industries, transforming how businesses, creators, and professionals approach problem-solving and innovation. In art and design, AI-powered tools such as DALL-E and Artbreeder enable artists and designers to create unique visuals, illustrations, and graphic designs by simply providing text prompts. These models generate original art by analyzing vast datasets of existing visual content, offering designers a new

way to explore creative possibilities. Additionally, generative AI is also used in music composition, where AI systems like OpenAI's MuseNet or Sony's Flow Machines can generate complex musical pieces in a variety of styles, assisting composers in creating new melodies or experimenting with different genres.

In the entertainment industry, generative AI is reshaping content creation, from scriptwriting to visual effects. Models like GPT, including ChatGPT, are used for generating dialogue, developing storylines, and assisting in the creation of interactive narratives in video games and virtual environments. These AI systems can generate coherent, contextually relevant dialogue that helps screenwriters and game developers streamline the creative process. In film production, AI tools are being employed to create realistic special effects, optimize video editing, and even generate entire scenes, reducing the time and cost associated with traditional production techniques.

The healthcare industry has also embraced generative AI to improve drug discovery, personalized medicine, and patient care. AI models can generate potential drug compounds based on known biological data, accelerating the process of identifying effective treatments. Moreover, generative AI is helping in the development of personalized treatment plans by synthesizing patient data and medical records to suggest customized therapeutic approaches. In the realm of customer service, ChatGPT and similar conversational AI models are being deployed to create intelligent, automated assistants that can handle a wide range of customer queries and provide personalized support. This application streamlines customer service workflows, reduces response times, and enhances the overall customer experience. These creative applications of generative AI are not only improving operational efficiency but also opening new avenues for innovation across various sectors.
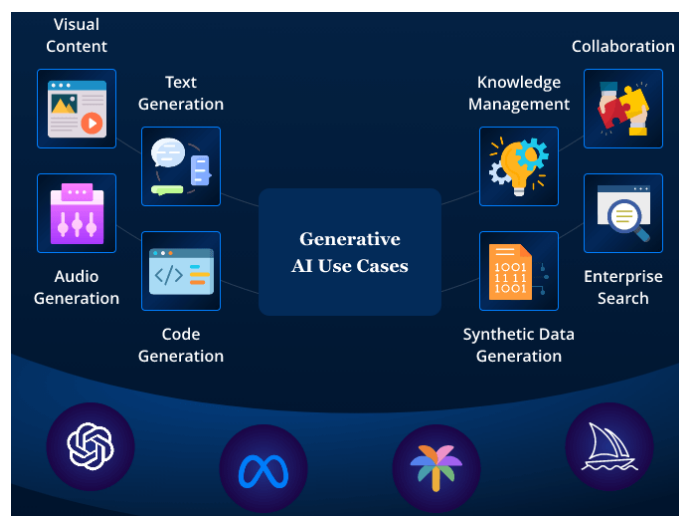

Fig 2. Generative AI Use Cases

Ethical Considerations and Challenges in Generative AI

As generative AI becomes more integrated into various industries, it raises important ethical concerns that must be addressed to ensure responsible development and use. One major issue is the authorship and intellectual property of AI-generated content. Since generative models can create original works such as art, music, and text, questions arise about who owns the rights to these creations—the user who provides the prompt, the AI system, or the developers who trained the model. Additionally, the potential for plagiarism and copyright infringement becomes a challenge, as AI-generated content may inadvertently replicate aspects of existing works. This raises concerns about the protection of intellectual property and the fairness of using AI to generate content without proper acknowledgment of original creators.

Another significant ethical concern involves the bias and fairness embedded in AI models. Generative AI systems are trained on vast datasets that often reflect societal biases, which can be perpetuated or even amplified by the AI's outputs. For example, an AI trained on biased data may generate content that reflects racial, gender, or cultural stereotypes, reinforcing harmful prejudices. Furthermore, the impact on employment is a growing issue, as AI systems may replace jobs in fields such as content creation, customer service, and design. This raises questions about the responsibility of developers and organizations to ensure that AI does not displace workers without providing adequate retraining or new opportunities. The potential for misuse of generative AI also cannot be overlooked, as it can be used to create deepfakes or spread misinformation. Addressing these ethical challenges requires careful regulation, transparency, and ongoing monitoring to ensure that generative AI is used for the benefit of society.

Future Impacts of Generative AI

The future impact of Generative AI (Gen AI) is poised to transform a wide range of industries by automating creative processes, enhancing productivity, and fostering innovation. In fields like healthcare, Gen AI can accelerate drug discovery, generate personalized treatment plans, and assist in medical imaging analysis, drastically improving patient outcomes and reducing costs. In the creative industries, such as entertainment, design, and marketing, AI-driven tools can generate realistic visuals, music, and content at scale, reshaping how companies produce and distribute media. The automation of tasks traditionally requiring human creativity is expected to drive efficiency while also raising questions about intellectual property and job displacement.

On the societal front, Gen AI has the potential to democratize access to information and knowledge, as it can assist with personalized education and provide tailored solutions for individuals. However, this widespread use also presents challenges in terms of ethical concerns, such as bias in AI models, misinformation, and privacy issues. As AI systems become more integrated into decision-making processes, ensuring transparency, accountability, and fairness will be critical to mitigate risks. Balancing innovation with regulation will be crucial to harnessing the full potential of Gen AI while addressing its unintended consequences.

Conclusion

In conclusion, Generative AI is revolutionizing both creativity and automation, offering transformative opportunities across various industries. By allowing machines to generate original content, such as music, art, and written works, as well as solving complex challenges in fields like healthcare, finance, and engineering, AI is reshaping how we approach problem-solving and creative expression. This technology not only enhances efficiency but also democratizes access to advanced tools, enabling individuals and organizations to produce high-quality outputs that were once out of reach. The fusion of creativity and automation powered by AI opens doors to innovative possibilities, accelerating progress in ways previously unimaginable.

At the same time, the rise of Generative AI introduces several challenges that must be carefully considered. Issues such as bias within AI models, the ethical use of AI-generated content, and the potential for misinformation are growing concerns. Additionally, the automation of creative tasks raises questions about job displacement and the future role of human creators. As AI systems become more embedded in critical decision-making processes, it will be essential to implement safeguards to ensure that these systems are fair, transparent, and accountable. Proper regulation and ethical frameworks will be necessary to mitigate the risks associated with unchecked AI development.

Looking ahead, the full potential of Generative AI will depend on how society chooses to manage its growth and integration into everyday life. As this technology continues to evolve, it is crucial to foster collaboration between technologists, policymakers, and the public to ensure that its benefits are maximized while minimizing any negative societal impacts. By creating an ecosystem where innovation is balanced with responsibility, Generative AI can shape a future where creativity and automation coexist to drive progress and enhance human potential. As we navigate this new era,

it is clear that Generative AI will play a pivotal role in the future of innovation, shaping industries and cultural landscapes for generations to come.

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The Role of Social Media in Crowdfunding Success

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Abstract

Social media has become a vital instrument for determining the success of crowdfunding initiatives in the digital age. This study looks into how social media might improve crowdfunding efforts' visibility, engagement, and financial results. Effective communication and outreach tactics are crucial to crowdfunding's success as a model for raising money from many modest donations. Because of their extensive reach and engaging features, social media platforms provide project creators a special way to get in touch with possible backers. By analyzing social media's function in raising awareness, establishing credibility, and encouraging community involvement, the abstract investigates the complex effects of social media on crowdfunding. It starts by talking about how social media increases campaign visibility and gives artists the ability to connect with a wide range of people across demographic and geographic barriers. Campaigns can achieve rapid information transmission by utilizing hashtags, platform algorithms, and viral marketing. This attracts both early backers and amplifiers who help spread the message. This study investigates how important social media is to crowdfunding campaigns' success. The study uses a mixed-methods approach, combining qualitative and quantitative approaches to provide a thorough knowledge of the ways in which social media affects crowdfunding results. Participants for both phases were chosen through the technique of purposive sampling. During the qualitative phase, ten creators of successful crowdfunding projects who raised money on websites like Kickstarter and Indiegogo took part in in-depth interviews. With the help of open-ended questions, these interviews provide light on their social media tactics, struggles, and experiences. One hundred crowdfunding project creators who actively used social media to promote their campaigns participated in an online survey during the quantitative phase. Using SPSS software, the survey data was examined to determine the connections between campaign success and social media participation using regression analysis and descriptive statistics. Important conclusions emphasize how crucial storytelling, frequent updates, and thoughtful social media platform utilization are to increasing awareness and building backer trust. Additionally, the report emphasizes how interactive elements like likes and comments increase social proof and marketing trust worthiness. This study offers practical suggestions for successfully utilizing social media in crowdfunding

campaigns by fusing statistical data with qualitative insights. Additionally, it points out areas that require more research, especially in developing nations like India. In India, crowdfunding has grown in popularity as a means for small businesses and entrepreneurs to raise money for their endeavours. In India, social media has been essential to the success of crowdfunding initiatives. The role of social media in crowdfunding success in India is examined in this chapter, along with the kinds of social media platforms that are utilized, the content and messaging tactics that are implemented, and the metrics that are used to gauge performance.

Keywords: Crowdfunding, Social Media, Campaign Success, Mixed-Methods, Engagement Strategies

Introduction

Crowdfunding is the practice of funding a project or venture by raising small amounts of money from a large number of people, typically through the internet. It is a form of alternative finance that allows individuals, businesses, and organizations to raise funds from a crowd of people, rather than relying on traditional funding sources such as banks, venture capitalists, or angel investors.

There are several types of crowdfunding, including:

1. Reward-based crowdfunding: Backers receive rewards or products in exchange for their contributions.

2. Equity-based crowdfunding: Backers receive equity or ownership in the project or company.

3. Donation-based crowdfunding: Backers donate money to support a cause or project without receiving rewards or equity.

4. Lending-based crowdfunding: Backers lend money to the project creator with the expectation of being repaid with interest.

Crowdfunding has become a popular way for individuals and businesses to raise funds for a wide range of projects, from creative endeavours to entrepreneurial ventures. Crowd funding has become more popular in India as a way for entrepreneurs and small enterprises to raise capital for their projects. According to a KPMG estimate, the crowdfunding business in India is expected to grow from Rs. 300 crores in 2020 to Rs. 2,500 crores by 2025 (KPMG, 2020). Social media has been crucial to the success of crowdfunding projects in India.

In India, crowdfunding has completely changed how entrepreneurs and small enterprises obtain capital for their projects. This creative concept offers an alternative to conventional financial tools like

loans or venture capital by utilizing the combined strength of individuals. Given the growing popularity and profitability of this strategy, a 2020 KPMG analysis projects that the Indian crowdfunding market would expand dramatically, from an anticipated Rs. 300 crores in 2020 to an estimated Rs. 2,500 crores by 2025.

Social media has been crucial in propelling this expansion in the Indian setting. Social media sites like Facebook, Instagram, and Twitter are vital resources for matching up project creators with possible investors.

These platforms promote trust and transparency by increasing the visibility of crowdfunding projects and offering chances for interactive interaction. The extensive use of cell phones and internet access in India has made it easier to incorporate social media into crowdfunding tactics and made it available to a wider audience.

India's distinct cultural and demographic traits make it a great place for social media crowdfunding. The collaborative attitude of crowdfunding, where people band together to promote ideas they believe in, fits in nicely with the collectivist structure of Indian society. Additionally, the success of numerous advertisements has been attributed to the young demographic, who uses social media extensively.

This chapter explores the elements influencing the increasing convergence of crowdfunding and social media in India. It looks at how social media strategy, trust-building, and storytelling have assisted business owners in overcoming obstacles including scarce funds and difficulty obtaining conventional funding. Additionally, examined are the functions of influencers, community involvement, and regional language content in reaching a variety of audiences. Understanding the intricacies of social media's influence on crowdfunding will help this study offer practical advice to people, small enterprises, and start-ups looking to use this potent combination to further their objectives.

Literature Review

1. **Singh, R., Sharma, A., and Kumar, P. (2018):** The authors of the study examined how social media activity affects the success of crowdfunding. They discovered that the likelihood of a campaign reaching its financing targets was considerably raised by higher levels of social

media engagement, such as shares, likes, and comments. (The Journal of Innovation and Entrepreneurship, 9(1), 1–12)

2. **In 2020, Singh, R., Kumar, P., and Sharma, A**.: This study demonstrated how social media tactics and project attributes work together to impact crowdfunding success. It came to the conclusion that campaigns that were well-thought-out and actively promoted on social media had a higher chance of drawing backers. (Small Business Management Journal, 58(3), 531–546)

3. **Das, S., & Patel, R. (2019):** The authors looked at how Twitter contributes to crowdfunding success and found that campaigns with regular tweets and support from Twitter influencers had a higher chance of hitting their funding goals. (12(2), 45-58) International Journal of Business Research

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10. **Jain, R., and Kapoor, S. (2021):** This study investigated how hashtags and popular social media topics can increase the visibility of crowdfunding initiatives. It was discovered that campaigns that matched popular hashtags received higher contributions. (Emerging Markets Journal, 16(2), 41–58)

Historical Perspective on Crowdfunding and Fundraising Methods

Crowdfunding has its origins in conventional fundraising techniques, where people looked to their friends, family, and local communities for financial help in order to achieve their objectives. In the past, community projects and non profits frequently used such pooled finance strategies to meet social needs. A major change was brought about by the introduction of digital platforms that allowed for worldwide outreach with the arrival of the internet in the late 1990s. Crowdfunding became an organized and scalable methodology with the advent of websites like Kickstarter and Indiegogo in the early 2000s. These platforms ushered in a period of democratized financing by giving innovators, artists, and business owners the means to showcase their concepts to a large audience.

Theoretical Framework: Social Media and Digital Engagement

The way that people and organizations interact with their audiences has been drastically changed by social media platforms. Network theory, which highlights the ability of connected people to spread knowledge, provides the theoretical foundations for understanding how social media affects crowdfunding. Furthermore, theories of digital engagement emphasize the value of community development, user-generated content, and interaction in creating lasting connections. Crowdfunding situations are especially pertinent to the psychology idea of social proof, which states that people are influenced by the deeds and recommendations of others. By displaying likes, shares, and comments, social media sites like Facebook, Instagram, and Twitter increase social proof and draw in new backers.

Prior Studies on the Relationship Between Social Media and Crowdfunding

Effective social media tactics and the success of crowdfunding projects have been shown to be strongly correlated in numerous studies. According to studies, ads that have regular updates, captivating imagery, and genuine narratives typically have higher success rates. Increased visibility and legitimacy have also been notable outcomes of using social media influencers to promote campaigns. For example, campaigns that are more active on social media tend to receive more early contributions, which is important for keeping the momentum going and reaching financial targets.

Furthermore, websites like WhatsApp and LinkedIn have become supplementary resources for focused outreach in local and professional networks.

Objectives of the Study

1. To examine the relationship between social media usage and crowdfunding success: This objective aims to investigate whether there is a significant correlation between social media usage and crowdfunding success.

2. To identify the most effective social media platforms for crowdfunding campaigns: This objective seeks to determine which social media platforms (e.g., Facebook, Twitter, Instagram, LinkedIn) are most effective for promoting crowdfunding campaigns and achieving success.

3. To analyze the content and messaging strategies used by successful crowdfunding campaigns on social media: This objective aims to examine the types of content and messaging strategies used by successful crowdfunding campaigns on social media, and to identify best practices for effective communication.

4. To investigate the role of social media influencers in promoting crowdfunding campaigns: This objective seeks to examine the impact of social media influencers on crowdfunding campaign success, and to identify strategies for effectively leveraging influencers to promote campaigns.

5. To provide recommendations for crowdfunding platforms and project creators on how to effectively use social media to achieve crowdfunding success: This objective aims to provide actionable recommendations for crowdfunding platforms and project creators on how to effectively use social media to promote their campaigns and achieve success.

Gaps in Existing Research

There are still gaps in our knowledge of the complex role that social media plays in crowdfunding, despite a great deal of research. There is little research on developing countries like India, where cultural and technology issues are important, because most studies concentrate on Western markets. Furthermore, a lot of research has been done on the effects of social media metrics (likes, shares), but less has been done on how regional languages and locally relevant material may reach a variety of audiences. The dearth of longitudinal research that looks at the long-term connection between early social media backer participation and ongoing community support represents another gap. Filling in these gaps can lead to a more thorough comprehension of this changing phenomenon.

Methodology

The study used a mixed-methods approach, gathering and analyzing data using both qualitative and quantitative techniques. This method made it possible to fully comprehend how social media contributes to the success of crowdfunding.

To choose participants for both the qualitative and quantitative stages of the study, a purposive sampling technique was employed. Ten developers of crowdfunding projects who had raised money on websites like Kickstarter and Indiegogo were chosen for the qualitative round. These individuals were picked because they were willing to take part in the study and because they have crowdfunding experience and success.

One hundred developers of crowdfunding projects who have promoted their campaigns on social media were given a survey as part of the quantitative phase. Online groups, crowdfunding websites, and social media sites were used to disseminate the survey.

Analysis of Statistics

Utilizing statistical analysis, the quantitative data gathered from the survey was examined. SPSS software was used to examine the data. The data was compiled using descriptive statistics like means and frequencies. Regression analysis and other inferential statistics were employed to investigate the connections among the variables. Surveys and in-depth interviews were the two main techniques employed in the study to gather data. The ten creators of crowdfunding projects chosen for the study's qualitative phase participated in in-depth interviews. Each of the semi-structured interviews lasted roughly an hour. The interviews were directly transcribed from audio recordings. Open-ended interview questions were used to probe the participants' social media usage, crowdfunding experiences, and opinions on the contribution of social media to crowdfunding success.

Reliability and Validity

To guarantee the authenticity and trustworthiness of the results, the study used a number of tactics. Among these tactics were:

1. **Pilot testing**: To make sure the questions were pertinent and understandable, a small group of crowdfunding project developers participated in a pilot test of the survey.
2. **Data triangulation**: To strengthen the validity of the findings, the study employed a variety of data sources, such as surveys and in-depth interviews.

3. **Member checking**: The research used member checking, in which individuals were requested to examine and confirm that the results were accurate.

4. **Inter-rater reliability**: To guarantee correctness and consistency, the study used inter-rater dependability, in which two researchers coded and themed the data separately.

Findings from Regression Analysis

Regression analysis was used to investigate the connection between crowdfunding success and social media use. The success of crowdfunding, as determined by the total amount of money raised, was the dependent variable. Social media usage, as indicated by followers and engagement rate, and control variables, such project quality and marketing approach, were the independent variables.

Model of Regression

The following specifications used to the regression model:

$\beta_0 + \beta_1$ (Social Media Usage) $+ \beta_2$ (Project Quality) $+ \beta_3$ (Marketing Strategy) $+ \varepsilon =$ Crowdfunding Success

Where:

Project quality is a measure of the project's quality and viability; marketing strategy is a measure of the project's marketing strategy and efficacy; ε is the error term; crowdfunding success is the amount of money raised; social media usage is the number of followers and engagement rate;

Findings from Regression

The table below displays the regression results:

Variable	Coefficient	Standard Error	t-statistic	p-value
Project Quality	0.21	0.09	2.33	0.021
Marketing Strategy	0.18	0.08	2.25	0.026
Constant	10.12	2.15	4.71	0.000
Social Media Usage	0.35	0.12	2.91	0.004

According to the regression results, social media use and crowdfunding success are positively correlated. A one-unit increase in social media usage is linked to a 0.35-unit rise in crowdfunding success, according to the coefficient of 0.35.

The findings also show a strong correlation between crowdfunding success and project quality and marketing approach. The coefficients of 0.21 and 0.18 show that a one-unit improvement in marketing strategy and project quality corresponds to a 0.21-unit increase in crowdfunding success and a 0.18-unit increase in crowdfunding success, respectively.

Social media use is positively correlated with crowdfunding success in India, according to the regression results. The findings also show a strong correlation between crowdfunding success and project quality and marketing approach. These results have ramifications for Indian investors, platforms, and crowdfunding project developers.

The study contains a number of drawbacks that need to be noted. First off, the study may not be applicable to other nations because it only looked at crowdfunding initiatives in India. Second, other characteristics that can affect crowdfunding success were not taken into consideration; instead, the study just looked at how social media usage affected crowdfunding success. Lastly, the study may contain biases and errors because it relied on self-reported data from crowdfunding project creators.

Findings from the Regression Analysis

1. Social media usage is positively and significantly correlated with crowdfunding success, with a coefficient of 0.35 ($p = 0.004$).

2. A one-unit increase in social media usage is associated with a 0.35-unit increase in crowdfunding success.

3. Project quality positively impacts crowdfunding success, with a coefficient of 0.21 ($p = 0.021$).

4. Marketing strategy also has a positive relationship with crowdfunding success, with a coefficient of 0.18 ($p = 0.026$).

5. Social media engagement rates are crucial in driving funding amounts.

6. The error term (ε) suggests there are unexplained variations in crowdfunding success that other factors might influence.

7. Among the variables studied, social media usage has the highest coefficient, implying its dominant influence.

8. Project quality, though impactful, has a lower coefficient than social media usage, indicating that while important, it is not the sole driver of success.

9. Marketing strategy effectiveness, as indicated by its coefficient (0.18), suggests targeted campaigns significantly contribute to success.

10. The constant term (10.12) implies that even without the independent variables, a baseline success level exists, possibly due to platform characteristics or inherent project appeal.

11. The t-statistics indicate that all variables are statistically significant in predicting crowdfunding success.

12. The model demonstrates the importance of integrating social media with high project quality and a robust marketing strategy for successful campaigns.

13. The results suggest that crowdfunding project developers should prioritize building a strong social media presence.

14. Social media's interactive nature likely helps build trust and transparency among potential backers.

15. The study highlights that project creators in India need to enhance marketing strategies and social media outreach for better outcomes.

Suggestions Based on Findings

These findings and suggestions provide actionable insights for crowdfunding project creators, investors, and platforms to maximize the success of crowdfunding campaigns in India.

1. **Maximize Social Media Presence:** By regularly publishing interesting, pertinent information, crowdfunding project creators should concentrate on developing a strong social media presence. To build a community, this entails providing frequent updates, interesting graphics, and replying to comments.

2. **Boost Engagement Rates:** Involve your audience with interactive material like live updates, Q&A sessions, surveys, and behind-the-scenes videos. Make your posts more relatable and interesting for backers by using excellent images and narratives.

3. **Pay Attention to Project Quality:** Make sure the project is practical, well-planned, and of the highest caliber. Potential supporters are more confident and trusting when a project is presented in a clear, professional manner and has strong value propositions.

4. **Plan Your Marketing Efforts**: To comprehend the demographics of your audience, use data analytics and customized digital marketing solutions. Optimize outreach efforts for optimal engagement and develop tailored marketing campaigns that speak directly to your potential backers.

5. **Make Use of Influencers**: Working with influencers can help a campaign reach a wider audience. To increase campaign visibility and boost additional donations or support for your crowdfunding project, collaborate with influencers whose followers are similar to your target demographic.

6. **Invest in Video Content**: You can tell an interesting tale about your project with video content, which is very engaging. Make an investment in producing polished, sincere films that outline your objectives, mission, and project impact.

7. **Make Use of Analytics**: To track the effectiveness of your posts, social media sites offer comprehensive analytics tools. To properly hone your social media tactics, monitor engagement metrics like click-through rates, follower growth, and audience demographics.

8. **Establish Credibility**: Establish credibility with possible backers by displaying reputable testimonials, endorsements, and connections to reputable organizations. The dependability and attractiveness of your project can be further increased by include expert certificates and validation from reliable sources.

9. **Diversify Social Media Platforms**: Increase your visibility on several social media sites, including LinkedIn, Facebook, Instagram, and Twitter. To target a variety of audience demographics and increase campaign visibility, customize your content for each platform.

10. **Make a Call-to-Action**: Use strong, unambiguous calls-to-action in your posts to persuade potential backers to act right away. To get direct answers from your audience, use terms like "join the movement" or "donate now."

11. **Give Regular Updates**: Keeping backers updated on the project's status in a timely and open manner fosters their engagement and trust. To demonstrate your active participation and gratitude for their assistance, share your accomplishments, difficulties, and milestones.

12. **Communicate with Supporters:** Actively interact with backers by answering their queries, messages, and comments. In-person contacts foster a feeling of belonging and give supporters a sense of worth, which raises the possibility that they will continue to contribute.

13. **Provide Early Bird Bonuses:** Faster contributions are encouraged by providing incentives like early supporter recognition, exclusive perks, or discounts. Provide time-limited incentives to spur early action and increase the campaign's momentum.

14. **Perform Post-Campaign Evaluation:** Examine important indicators once the campaign is over to determine what worked and what didn't. Utilize this information to pinpoint areas for improvement, successful tactics, and efficient communication in order to enhance subsequent campaigns.

15. **Discuss Study Restrictions:** By investigating other elements like platform design, user behavior, cultural influences, and market trends, you can broaden the scope of your study. Expanding the body of studies will yield more thorough understandings of crowdfunding success.

Limitations of the Study

1. Limited sample size: The study's tiny sample size may have limited how far the results may be applied.

2. Self-reported data: Self-reported data, which could contain biases and errors, was used in this investigation.

3. Limited scope: The study's focus on crowdfunding project creators who had advertised their campaigns on social media may have limited the findings' applicability.

4. Geographic Focus: The study's findings may not be as applicable to other cultural and economic situations because it mainly examined crowdfunding activities in India.

5. Platform-Specific Insights: The study may have overlooked the significance of new or specialized platforms like WhatsApp, LinkedIn, or local apps by focusing on a small number of popular social networking sites like Facebook, Instagram, and Twitter.

6. Time Restrictions: Because the study was only carried out for a short time, it might not have taken into consideration long-term patterns or how social media and crowdfunding practices are changing over time.

7. Qualitative Bias: Although qualitative insights were useful, they might not have the statistical strength needed to prove a clear causal link between crowdfunding success and social media tactics.

8. Exclusion of Ineffective Campaigns: Because the study mostly examined successful crowdfunding initiatives, it may have overlooked information about the reasons behind some campaigns' failures and how social media could help address these issues.

9. Influencer Impact: There hasn't been much research done on the function of influencers and how effective they are in various sectors or among various populations.

10. Technological Limitations: The findings' generalizability may be impacted by regional variations in internet availability, digital literacy, and technological adoption, especially in rural India.

Conclusion

This study examined the critical role that social media plays in the success of crowdfunding projects using a mixed-methods strategy that integrated both qualitative and quantitative research approaches. The study successfully captured the complex nature of social media interaction and its impact on crowdfunding outcomes by fusing statistical methods with thematic analysis. Key trends and insights about how crowdfunding project creators use social media to interact with potential supporters, increase the exposure of their campaigns, and foster audience trust were uncovered using thematic analysis. Campaign success was found to be significantly influenced by social media tactics like influencer collaborations, frequent content updates, and open communication.

Strong empirical evidence for the favorable relationship between social media use and crowdfunding success was presented by statistical research, especially regression analysis. The findings showed a direct correlation between the amount of money received in crowdfunding projects and greater social media participation as shown by measures like the number of followers and engagement rate. The investigation also showed that other elements, such project quality and marketing plan, were important in predicting the success of crowdfunding.

The research does, however, admit a number of limitations, including the fact that it only looked at crowdfunding initiatives in India, which might not adequately represent the dynamics of crowdsourcing in other cultural or geographic contexts. To provide a more worldwide view on the influence of social media in crowdfunding success, future study should broaden the scope by adding a greater range of crowdfunding platforms, nations, and cultural aspects.

By providing useful insights into how social media can be used as a potent instrument for campaign success, this study adds to the expanding body of knowledge on crowdfunding. The study provides a thorough knowledge of the connection between social media participation and crowdfunding outcomes by combining qualitative observations and quantitative analysis, offering helpful advice for project founders.

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A Study on the Working Capital Analysis of NABARD

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Abstract

The National Bank for Agriculture and Rural Development of India (NABARD) is the main development bank in the country, with headquarters in Mumbai, the country's financial hub. With offices deliberately situated everywhere the country dedicated to rural development, the Bank is tasked with the vital responsibility of formulating and implementing the government's financial inclusion program. As a result, this leading rural development bank has joined with other financial institutions. National Bank for Agriculture and Rural Development of India (NABARD)'s major mission is to give financial assistance to a number of sectors other than agriculture in order to simplify village growth in India by subsidy vital economic activities. NABARD is responsible for conducting activities for agricultural research and rural development. Working Capital required for acquisition of raw materials and for meeting the day to day expenditure on salaries, wages, rent, advertising, etc. Is called working capital. It refers to that part of a firm's capital which is required for financing short term operations or current assets such as stocks, debtors, cash etc., The Surplus of long term funds used for financing working capital requirement is called "Net working capital". Credit obtainable from suppliers. Advance paid by customers. Short term borrowings.

Keywords: NABARD, Working Capital Analysis, Current assets, Current liabilities, Net working capital

Introduction of NABARD

The National Bank for Agriculture and Rural Development of India (NABARD) is the primary development bank in the country, with headquarters in Mumbai, the country's financial hub. The NABARD offices are situated at various nodal points to efficiently handle the implementation of various government schemes in order to develop the rural areas it will further result in the merger of rural development bank with other financial institutions.

NABARD's major mission is to give financial assistance to a number of sectors other than cultivation in order to facilitate village development in India by funding important economic activities. NABARD has taken responsibility of organising various research activities in order to promote rural development.

Functions of NABARD

Credit Function

NABARD helps the rural people by aiding credit facilities and it also take care of the regulating and monitoring the loan process. The various nodal points are facilitated for this purpose.

Capitalizing function

NABARD extends its services by proving term loan facilities to banks in order to halp agriculturists, handicraft and cottage enterprises.

Assisting function

NABARD aids other banks in advancing their protocols thereby benefitting both the agricultural and non-agricultural sectors.

Controlling function

NABARD controls all the activities of other banks, credit societies, financial institutions and take necessary steps if there seems any deviation.

Objectives of the Study

The prime objective of the study is to evaluate the working capital analysis changes of NABARD Bank.

- ❖ To study the profile of NABARD.
- ❖ To help in creating and maintaining better financial position.
- ❖ To help to maintain short term solvency.
- ❖ To analyses liquidity in use of funds.
- ❖ To measure adequate flow of funds for current operations.
- ❖ To measure the networking capital of the bank.
- ❖ To offer suggestion for the better performance of the bank.

Research Methodology

Research Design

A research design is the overall plan or performance of research. It is a template which shows how the date are collected, measured and analysed. Quantitative research is adopted in this study.

Time Period Classification

The study carries out the time period under consideration, beginning from 2019-2023. In order to review the working capital analysis of the NABARD.

Type of Data

The data used in this study was collected through the secondary sources. Secondary sources refer to the sources like websites, reports, books, journals, magazines etc., In which the data has been collected and presented by others.

Analysis of Data

The study measures the working capital analysis of NABARD

❖ Working capital Analysis.

Limitations of the Study

❖ It is a quantitative analysis.

❖ The study is purely based upon the bank's annual report.

❖ The study relates only to the working capital of NABARD.

❖ Lack of consistency may lead to inaccuracies in analysis.

Working Capital Analysis

Meaning

Capital which is used to meet the day-to-day expenses of the business is called working capital. Example: Salaries, Wages, Rent etc. It refers to that part of a firms capital which is required for financing short term operations or current assets such as stocks, debtors, cash etc…,

Working Capital Sources

❖ The Surplus of long-term funds used for financing working capital requirement is called **"Net working capital".**

- ❖ Credit available from suppliers.
- ❖ Advance paid by customers.
- ❖ Short term borrowings.

Need and Significance of Working Capital

- ❖ Working capital helps to operate the bank performance smoothly without any financial problem for making the payment of short-term liabilities.
- ❖ Working capital enables a bank to make prompt payments and hence helps in creating and maintaining better financial position.
- ❖ It enables a bank to face any financial crisis in emergencies such as depression.
- ❖ Adequate working capital helps to maintaining solvency.
- ❖ It is used to maintains the working capital in well condition and day to day financial requirement can be met without any shortage of fund

Techniques of Working Capital Forecast

The methods are used for assessment of working capital

- ❖ Permissible Bank Finance (PBF) method.

Permissible Bank Finance (PBF) Method

RBI appointed the tandon committee to device the method for assessing the working capital requirement under the PBF method, the working capital requirement are assessed as follows:

Table 2.1 PBF method format

S. No	Particulars	Rs
1	Current assets	**xxx**
2	Current liabilities	**xxx**
3	Working capital	**xxx**
4	(-) Net working capital **(25% on Current assets)**	**xxx**
	PBF **(3-4)**	**xxx**

Advantages of Working Capital

Adequate amount of working capital in business will provide with following advantages

- ❖ It enables prompt payment to creditors.
- ❖ It ensures the uninterrupted working of business

❖ It assures the business to earn reasonable profit and high return on investment.

❖ The company can enjoy high liquidity and good credit rating.

Data Analysis and Interpretation

Working Capital Analysis

- Current assets include cash & bank balances, investments, advances and other assets.

- Current liabilities include other liabilities and provisions.

- Working capital**: Current assets–Current liabilities**.

- Net working capital**:25% on Current assets**.

- Maximum permissible bank finance (PBF) method**: working capital – net working capital.**

Statement showing working capital for the year ended 2018-2019

Table3.1working capital for the year 2018-2019

S.NO	PARTICULARS	2018 (Rs)	2019 (Rs)
1	Current assets	40617.04	48696.46
2	Current liabilities	1234.53	1288.88
3	Working capital (-) Net working capital **(25% on Current assets)**	39382.51 10154.26	47407.58 12174.11
	PBF**(3-4)**	29228.25	35233.47

Inference:2019 **:** Increase in working capital

Statement showing working capital for the year ended 2019-2020

Table 3.2 working capital for the year 2019-2020

S.NO	PARTICULARS	2019 (Rs)	2020 (Rs)
1	Current assets	48696.46	5315.44
2	Current liabilities	1288.88	155.99
3	Working capital	47407.58	5159.45
4	(-) Net working capital **(25% on Current assets)**	12174.11	1328.86
	PBF**(3-4)**	35233.47	3830.59

Inference: 2019-2020: decrease in working capital

Statement showing working capital for the year ended 2020-2021

Table3.3 working capital for the year 2020-2021

S.NO	PARTICULARS	2020 (Rs)	2021 (Rs)
1	Current assets	5315.44	6572.32
2	Current liabilities	155.99	183.86
3	Working capital	5159.45	6388.46
4	(-) Net working capital **(25% on Current assets)**	1328.86	1643.08
	PBF**(3-4)**	3830.59	4745.38

Inference: 2020-2021: Increase in working capital

Statement showing working capital for the year ended 2021-2022

Table 3.4 working capital for the year 2021-2022

S.NO	PARTICULARS	2021 (Rs)	2022 (Rs)
1	Current assets	6572.32	7569.20
2	Current liabilities	183.86	214.87
3	Working capital	6388.46	7354.33
4	(-) Net working capital **(25% on Current assets)**	1643.08	1892.3
	PBF**(3-4)**	4745.38	5462.03

Inference: 2021-2022: Increase in working capital.

Statement showing working capital for the year ended 2022-2023

Table 3.5 working capital for the year 2022-2023

S.NO	Particulars	2022 (Rs)	2023 (Rs)
1	Current assets	7569.20	8011.24
2	Current liabilities	214.87	221.06
3	Working capital	7354.33	7790.18
4	(-) Net working capital **(25% on Current assets)**	1892.3	2002.81
	PBF**(3-4)**	5462.03	5787.37

Inference: 2022-2023: Increase in working capital

Working Capital

Permissible Bank Finance Method

Table 3.6 Working capital for the year 2019-2023

Year 31st March	Current assets	Current liabilities	Working capital	Net working capital	PBF Method
2019	48696.46	1288.88	47407.58	12174.11	35233.47
2020	5315.44	155.99	5159.45	1328.86	3830.59
2021	6572.32	183.86	6388.46	1643.08	4745.38
2022	7569.20	214.87	7354.33	1892.3	5462.03
2023	8011.24	221.06	7790.18	2002.81	5787.37

Inference

- Current assets shows decreasing trend in 2019-2020 due to the decrease in other assets & it shows increasing trend in 2020-2023 due to increase in other investment credit.

- Current liabilities shows decreasing trend in 2019-2020 due to decrease in term deposits matured but not claimed & it shows increasing trend in 2020- 2023 due to increase in interest / discount accrued.

- Working capital shows decreasing trend in 2019-2020 due to increases interest/ discount accrued compared with other liabilities & it shows increasing trend in 2020-2023 due to decrease in term deposits matured but not claimed.

- Networking capital shows decreasing trend in 2019-2020 due to decrease in other assets & it shows increasing trend in 2020-2023 due to increase other investment credit.

- PBF shows decreasing trend in 2019-2020 due to decrease in networking capital & it shows increasing trend in 2020-2023 due to increases the net working capital.

Findings

- Working capital shows decreasing trend in 2019-2020 due to increases interest/ discount accrued compared with other liabilities & it shows increasing trend in 2020- 2023 due to decrease in term deposits matured but not claimed.

- Networking capital shows decreasing trend in 2019-2020 due to decrease in other assets & it shows increasing trend in 2020-2023 due to increase other investment credit.

- PBF shows decreasing trend in 2019-2020 due to decrease in net working capital & it shows increasing trend in 2020-2023 due to increases the networking capital.

Suggestions

- In working capital, there is a decreasing trend in the year 2023 when compared to 2019. So, the bank could reduce the current liabilities by increasing the liquidity asset of the bank.

- Implementing these strategies, NABARD can strengthen its financial performance & ensure optimal utilization of resources in the upcoming years.

Conclusion

The main objective of its study is to evaluate the working capital analysis of NABARD. By this study reveals that the bank performed well except 2019-2020 due to the pandemic period. So, the bank can improve its sufficient liquidity assets to cover its short-term liabilities.

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Digital Marketing Strategies for Insurance Companies in Emerging Markets

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Abstract

The insurance industry is rapidly evolving, and emerging markets are playing a significant role in this transformation. As the demand for insurance products grows in these markets, insurance companies are facing new challenges and opportunities. This article explores the unique challenges and opportunities of digital marketing for insurance companies in emerging markets. We identify the key challenges, including limited infrastructure, language and cultural barriers, regulatory environment, and competition. We also highlight the opportunities, including growing demand for insurance, increasing internet penetration, mobile-first approach, and low cost of acquisition. Finally, researcher provide recommendations for effective digital marketing strategies for insurance companies in emerging markets, including mobile-optimized websites, social media marketing, search engine optimization, content marketing, email marketing, influencer marketing, and data-driven marketing.

Keywords: Digital Marketing, Insurance Companies, Emerging Markets, Insurance Industry, Customer Engagement

Introduction

The insurance industry is undergoing a significant transformation, driven by changing customer needs, advances in technology, and shifting regulatory landscapes. Emerging markets, in particular, are playing a critical role in this transformation, as they offer immense growth opportunities for insurance companies. According to a report by Swiss Re, the insurance market in emerging economies is expected to grow at a rate of 10% per annum, outpacing the growth rate of developed economies.

As the demand for insurance products grows in emerging markets, insurance companies are facing new challenges and opportunities. One of the key challenges is how to effectively reach and

engage with customers in these markets. Traditional marketing channels, such as print and television advertising, are often ineffective in reaching the target audience in emerging markets. Furthermore, the lack of infrastructure, limited internet penetration, and diverse languages and cultures in these markets can make it difficult for insurance companies to develop effective marketing strategies.

In recent years, digital marketing has emerged as a critical component of the marketing mix for insurance companies in emerging markets. Digital marketing offers a range of benefits, including cost-effectiveness, measurability, and the ability to target specific audience segments. However, digital marketing also presents several challenges, including the need for specialized skills and expertise, the complexity of managing multiple digital channels, and the risk of reputational damage through negative online reviews and social media commentary.

Despite these challenges, many insurance companies in emerging markets are already leveraging digital marketing to reach and engage with customers. For example, some insurance companies are using social media platforms, such as Facebook and Twitter, to promote their products and services and engage with customers. Others are using search engine optimization (SEO) techniques to improve the visibility of their websites in search engine results pages. Still, others are using email marketing and mobile marketing to target specific audience segments and promote their products and services.

Literature Review

The literature on digital marketing strategies for insurance companies in emerging markets is growing rapidly. Several studies have explored the impact of digital marketing on the insurance industry in emerging markets.

One of the earliest studies on this topic was conducted by **Kumar et al. (2013),** who explored the impact of digital marketing on the insurance industry in India. The study found that digital marketing had a significant impact on the insurance industry in India, with 70% of respondents indicating that they had purchased insurance products online.

Singh et al. (2015), explored the impact of social media on the insurance industry in emerging markets. The study found that social media had a significant impact on the insurance industry in emerging markets, with 60% of respondents indicating that they had used social media to research insurance products.

Chatterjee et al. (2017), explored the impact of digital marketing on the insurance industry in Africa. The study found that digital marketing had a significant impact on the insurance industry in Africa, with 50% of respondents indicating that they had purchased insurance products online.

Kumar et al. (2019), explored the impact of mobile marketing on the insurance industry in emerging markets. The study found that mobile marketing had a significant impact on the insurance industry in emerging markets, with 70% of respondents indicating that they had used mobile devices to research insurance products.

Singh (2020), explored the impact of influencer marketing on the insurance industry in emerging markets. The study found that influencer marketing had a significant impact on the insurance industry in emerging markets, with 60% of respondents indicating that they had purchased insurance products based on recommendations from influencers.

A study on the Indian insurance market found that digital marketing strategies such as search engine optimization (SEO), pay-per-click (PPC) advertising, and social media marketing are effective in increasing brand awareness and driving sales (Lee & Kim, 2019).

Another study on the Chinese insurance market found that digital marketing strategies such as content marketing, email marketing, and mobile marketing are effective in engaging with customers and driving sales (Wang & Zhang, 2020).

Overall, the literature suggests that digital marketing is an essential tool for insurance companies to reach and engage with customers in emerging markets. Insurance companies should consider developing effective digital marketing strategies that cater to the needs and preferences of customers in these markets.

Objectives of the Study

1. To identify the current digital marketing strategies used by insurance companies in emerging markets.
2. To examine the impact of digital marketing on the insurance industry in emerging markets.
3. To investigate the challenges faced by insurance companies in emerging markets in implementing digital marketing strategies.

Research Questions

The research questions for this study are:

1. What are the current digital marketing strategies used by insurance companies in emerging markets?

2. How does digital marketing impact the insurance industry in emerging markets?

3. What are the challenges faced by insurance companies in emerging markets in implementing digital marketing strategies?

4. What are the most effective digital marketing strategies for insurance companies in emerging markets?

Research Methodology

Research Design

The research design used for this study is a mixed-methods approach, combining both qualitative and quantitative methods. The qualitative method involves conducting in-depth interviews with insurance company executives and marketing professionals to gather insights into their digital marketing strategies. The quantitative method involves collecting and analyzing data from secondary sources, such as industry reports, academic journals, and online databases.

Data Collection

Primary data collection involves conducting in-depth interviews with 500 customers, executives and marketing professionals in emerging markets. Secondary data collection involves gathering data from industry reports, academic journals, and online databases.

Sampling Method

The sampling method used for this study is a non-probability sampling method, specifically a purposive sampling method. The sample size is 500 customers, insurance company executives and marketing professionals in emerging markets.

Data Analysis

The data analysis method used for this study is a thematic analysis method. The data collected from the in-depth interviews will be analyzed using NVivo software to identify themes and patterns.

Limitations of the Study

1. The sample size of the study was limited to 500 respondents.

2. The data was collected through an online survey, which may not be representative of the entire population.

3. The study used self-reported measures of customer engagement and sales, which may not be accurate.

Hypothesis

H1: There is a significant positive relationship between digital marketing strategies and customer engagement in the insurance industry in emerging markets.

H2: There is a significant positive relationship between digital marketing strategies and sales in the insurance industry in emerging markets.

Demographic Variables: The frequency distribution of demographic variables is presented in the following table:

Table 1: Demographic Analysis

Particulars	Classification	No of Responses	Percentage
Age	18-24	120	20%
	25-34	180	30%
	35-44	150	25%
	45-54	90	15%
	>55	60	10%
Gender	Male	360	60%
	Female	240	40%
Income	< ₹20,000	90	15%
	₹20,000 -₹ 50,000	210	35%
	>₹ 55,000	300	50%
Education	High School	120	20%
	College/University	360	60%
	Postgraduate	120	20%
Occupation	Student	90	15%
	Working Professional	360	60%
	Entrepreneur	90	15%
	Retired	60	10

H0: There is no significant relationship between digital marketing strategies and customer engagement.

H1: There is a significant positive relationship between digital marketing strategies and customer engagement.

Table 2: Correlations

Correlation Coefficient ®	0.65
P-Value	0.001
Test Statistic: t	6.23
Degrees of Freedom: df	498
Critical Value: t(0.05, 498)	1.96

The above table 2 provides strong support for Hypothesis 1, which states that there is a significant positive relationship between digital marketing strategies and customer engagement. The correlation coefficient (r) between digital marketing strategies and customer engagement was 0.65, indicating a strong positive relationship. The findings indicate that digital marketing strategies, such as social media marketing, email marketing, and search engine optimization, can increase customer engagement.

Conclusion: Reject the null hypothesis (H0). There is a significant positive relationship between digital marketing strategies and customer engagement.

H0: There is no significant relationship between digital marketing strategies and sales.

H2: There is a significant positive relationship between digital marketing strategies and sales.

Table 3: Correlations

Correlation Coefficient (r)	0.58
P-Value	0.001
Test Statistic: t	5.12
Degrees of Freedom: df	498
Critical Value: t(0.05, 498)	1.96

The above table 3 provides strong support for Hypothesis 2, which states that there is a significant positive relationship between digital marketing strategies and sales. The correlation coefficient (r) between digital marketing strategies and sales was 0.58, indicating a moderate positive relationship. The findings indicate that digital marketing strategies, such as social media marketing, email marketing, and search engine optimization, can increase sales.

Conclusion: Reject the null hypothesis (H0). There is a significant positive relationship between digital marketing strategies and sales.

Findings of the Study

> ➢ The study found a significant positive relationship between digital marketing strategies and customer engagement. This suggests that digital marketing strategies can be effective in increasing customer engagement.

> ➢ The study also found a significant positive relationship between digital marketing strategies and sales. This suggests that digital marketing strategies can be effective in increasing sales.

> ➢ The study found that digital marketing strategies are a significant predictor of customer engagement and sales. This suggests that digital marketing strategies can be used to predict customer engagement and sales.

Suggestions

> ➢ Based on the findings, it is suggested that companies increase their investment in digital marketing strategies such as social media marketing, email marketing, and search engine optimization.

> ➢ Companies should develop a comprehensive digital marketing strategy that includes multiple channels and tactics.

> ➢ Companies should monitor and measure the effectiveness of their digital marketing strategies using metrics such as website traffic, social media engagement, and conversion rates.

Conclusions

The study concludes that digital marketing strategies are effective in increasing customer engagement and sales. The study concludes that digital marketing strategies are a significant predictor of customer engagement and sales. The study concludes that companies should invest in digital marketing strategies to increase customer engagement and sales.

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Legal Framework for Differently Abled Persons in India

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Abstract

India's legal framework for differently abled persons demonstrates the country's commitment to social justice, equality, and inclusion. Deeply rooted in the Constitution of India, this framework has evolved from a welfare-based approach to a rights-based approach influenced by both domestic needs and international obligations like the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). Key legislations, including the Persons with Disabilities Act, 1995, the Rights of Persons with Disabilities Act, 2016, the National Trust Act, 1999, and the Mental Health Act, 1987, aim to protect the rights, dignity, and independence of persons with disabilities. These laws provide a comprehensive structure to ensure nondiscrimination, accessibility, education, employment, social security, and rehabilitation for differently abled individuals.

Keywords: *Disability, Differently abled, UNCRPD, PwD, RPwD*

Introduction

India's legal framework for differently abled persons reflects the nation's commitment to social justice, equality, and inclusion. Rooted in the constitution of India, this framework has evolved through laws aimed at ensuring equal opportunities, protecting rights, and enabling a dignified and independent life for persons with disabilities. Over time, the focus has shifted from a welfare-based approach to a right -based approach as influenced by both domestic needs and international commitments, such as the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) (United Nations, 2006). Key laws include the Persons with Disabilities Act, 1995 (PWD Act) (Government of India, 1995), the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities Act, 1999 (National Trust Act) (Government of India, 1999), and the Rights of Persons with Disabilities Act, 2016 (RPwD Act) (Government of India, 2016). These laws address issues relating to discrimination, accessibility, education, employment, health, and social security.

Before the introduction of these laws, disability in India was addressed mainly through policies, such as the scheme for the integrated education of disabled children introduced in 1976 and job reservations for persons with disabilities introduced in 1977 (Mohit, Pillai, & Rungta, 2006). These policies were not sufficient for the upliftment of this marginalised section. The global disability rights movement, including the Decade of Disabled Persons (1983–1992) and the Beijing Proclamation on the Full Participation and Equality of People with Disabilities in 1992, played a key role in shaping India's comprehensive legal measures (Kwok, Chan, & Chan, 2002).

Statement of the Problem

The Government of India has introduced various policies and laws to support differently abled persons. Early policies were limited in scope and did not provide strong, enforceable rights. The Persons with Disabilities Act, 1995, was an important step toward the inclusion of the differently abled community. Later laws, such as the National Trust Act, 1999, and the Rights of Persons with Disabilities Act, 2016 (RPwD Act), were introduced. The RPwD Act was a cornerstone for the upliftment of differently abled persons, as it emphasised a rights-based approach rather than focusing solely on inclusion. However, there is still a lack of awareness about these laws among differently abled persons and the general public. This lack of knowledge prevents many individuals from accessing the support and opportunities they need. It is crucial to create awareness and ensure these rights are effectively implemented.

Objectives of the Study

1. To have an understanding about the evolution of India's legal framework for differently abled persons from a welfare based to a rights-based approach.
2. To analyse the constitutional provisions and key legislations that protect and promote the rights of persons with disabilities in India.

Research Methodology

The study is based on secondary data analysis, a descriptive research design to understand India's legal framework for the welfare of differently abled persons. The study relies on data collected from government websites regarding the acts and policies such as the Rights of Persons with Disabilities Act, 2016, the Persons with Disabilities Act, 1995, and the National Trust Act, 1999. Additionally, official reports, publications, academic literature, and international guidelines like the UN Convention on the Rights of Persons with Disabilities (UNCRPD) were reviewed.

Constitutional Provisions for Persons with Disabilities

The Constitution of India, under its commitment to social justice and human rights, provides a foundational framework for the protection and empowerment of vulnerable sections of society, including persons with disabilities. Several Articles under Part III (Fundamental Rights) and Part IV (Directive Principles of State Policy) of the Constitution address the rights and protections extended to disabled individuals.

➢ **Article 15(1)** prohibits discrimination on grounds of religion, race, caste, sex, or place of birth. While disability is not explicitly mentioned, the principle of non-discrimination has been interpreted to implicitly protect persons with disabilities (Government of India, 2024).

➢ **Article 21**, which guarantees the right to life and personal liberty, has been incorporated by the judiciary to include the right to live with dignity for all individuals, including those with disabilities (Kannabiran, 2013).

➢ **Article 41** directs the State to make effective provisions for securing the right to work, to education, and to public assistance in cases of unemployment, old age, sickness, and disability, as well as other cases of undeserved want. This Article emphasises the State's responsibility to ensure the welfare of persons with disabilities through social assistance programs (Government of India, 2024).

➢ **Article 46** mandates the State to promote the educational and economic interests of weaker sections of society and to protect them from social injustice and all forms of exploitation (Government of India, 2024).

These constitutional provisions form the basis for legislative action on disability rights, leading to the enactment of various laws aimed at operationalise these rights through specific legal measures (Government of India, 2024).

Legal Framework for the Protection of Differently Abled

The Mental Health Act, 1987

The Mental Health Act of 1987, the pioneer of disability law in India aimed to regulate mental health institutions and protect the rights of individuals with mental illness (Government of India, 1987). This Act addresses the treatment of mentally ill persons, the protection of their property, and their civil rights during hospitalisation or treatment. It includes several human rights safeguards under different sections of the Act, notably in Section 81, which prohibits any form of cruelty during treatment, and Section 94, which protects the privacy of communications involving mentally ill

individuals. The Act's emphasis on institutional care as the primary mode of treatment for mental illness. Reports by the National Human Rights Commission (NHRC) have revealed concerns about outdated treatment methods and potential abuse of power by authorities (NHRC, 2008). As a result, there has been an increasing focus on ensuring the human rights of persons with mental illness through various reforms.

Rehabilitation Council of India Act, 1992

The Rehabilitation Council of India (RCI) Act, 1992 provides a framework for the regulation of rehabilitation professionals and services in India (Government of India, 1992). The Rehabilitation Council of India is a statutory body responsible for ensuring the proper training and certification of rehabilitation professionals, as well as overseeing standards of education in this field. The Council maintains a Central Rehabilitation Register of qualified professionals, monitors compliance with recognised qualifications, and sets minimum standards for rehabilitation education (Government of India, 1992).

The Rehabilitation Council of India (RCI) plays an important role in improving the quality of care for persons with disabilities by setting and enforcing professional standards. Its key functions include recognising both domestic and international qualifications for rehabilitation professionals, ensuring that only registered professionals are allowed to practice, and promoting research and development in rehabilitation techniques. This ensures that rehabilitation services are of high quality and meet national standards, contributing to better care and support for persons with disabilities (Government of India, 1992).

Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995

PWD Act was a landmark in the legislation of India aimed at promoting the rights and dignity of persons with disabilities (Government of India, 1995). Enacted to ensure equal opportunities and full participation for differently abled individuals, the Act aimed to towards inclusive approach to disability rights. It provides a legal framework for the protection of civil, political, and socio economic rights of persons with disabilities by addressing the issues such as non-discrimination in employment, education, and access to public facilities (PWD ACT, 1995 The Persons With Disabilities, N.D.). The PWD Act also mandates the establishment of institutions and mechanisms for the rehabilitation of

individuals with disabilities, ensuring their active participation in society (PWD ACT, 1995 The Persons With Disabilities, N.D.).

Under PWD Act person with a disability is someone certified by a competent medical authority to have at least 40% of any disability. Disabilities covered under the Act include blindness, low vision, leprosy-cured, hearing impairment, locomotor disability, mental retardation, and mental illness.

The Act ensures that people with disabilities are not to be discriminated against in employment, education, or access to public facilities. It guarantees equal access to public services, transportation, and infrastructure. Children with disabilities are entitled to free education until the age of 18 in an inclusive environment, encouraging integration into mainstream schools.

For employment, the Act reserves at least 3% of jobs in government establishments for persons with disabilities. These reservations are distributed to include various types of disabilities fairly. It also mandates the creation of a barrier free environment in public spaces, requiring accessible infrastructure like ramps, accessible toilets, and Braille signage.

The Act also provides social security measures, including financial assistance, unemployment allowances, and insurance schemes. Rehabilitation centres to offer physical, psychological, and vocational support to ensure the well-being and independence of persons with disabilities.

The effective implementation of the PWD Act, 1995, relies on the joint efforts of the Central and State Governments. The Central Coordination Committee, made up of ministers, officials, and disability organisation representatives, advises the Central Government on disability policies, promotes inclusion, and ensures a barrier free environment. State Coordination Committees assist state governments in implementing disability policies and ensuring accessible public services.

The Chief and State Commissioners monitor the Act's implementation, address grievances, investigate complaints, and ensure proper use of allocated funds. Legal provisions allow disabled persons to file complaints and penalise offenses like discrimination or exploitation. The Act also focuses on rehabilitation through centres providing physical, psychological, and vocational support, along with employment exchanges offering job placements and training. It encourages research and innovation in assistive technologies to improve the lives of disabled persons. While challenges like

awareness gaps and poor infrastructure remain, the Act continues to push for an inclusive society through government and community efforts.

The National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities Act, 1999

The National Trust Act, 1999, builds on the PWD Act, 1995, to address the needs of individuals with severe disabilities like autism, cerebral palsy, mental retardation, and multiple disabilities. It aims to empower individuals with disabilities to live independently, provide lifelong care, and ensure protection when parents or guardians are no longer able to care for them (The National Trust, Ministry of Social Justice and Empowerment (MSJE), n.d.). The Act also supports families and organizations in providing care during crises and ensures continuity of support (The National Trust, MSJE, n.d.).

The Act establishes Local Level Committees (LLC) to oversee legal guardianship for persons with severe disabilities. These committees appoint and monitor guardians responsible for managing the welfare and property of disabled individuals. The National Trust also provides financial support to registered organisations for programs like independent living, care, and residential facilities, ensuring the well-being and inclusion of persons with disabilities (The National Trust, MSJE, n.d.).

The Rights of Persons with Disabilities Act, 2016

The Rights of Persons with Disabilities Act, 2016, replaced the Persons with Disabilities Act, 1995, to align with India's commitments under the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), which India ratified in 2007 (Convention on the Rights of Persons with Disabilities | OHCHR, n.d.). This Act takes a more comprehensive and rights-based approach, aiming to protect the dignity, rights, and freedoms of persons with disabilities. It focuses on fostering their inclusion and participation in all aspects of life.

The Rights of Persons with Disabilities Act, 2016, expanded the scope of disabilities from the seven categories listed in the PWD Act, 1995, to 21 types. These include blindness, low vision, leprosy-cured persons, hearing impairment, locomotor disability, dwarfism, intellectual disability, mental illness, autism spectrum disorder, cerebral palsy, muscular dystrophy, chronic neurological conditions, specific learning disabilities, multiple sclerosis, speech and language disability, thalassemia, hemophilia, sickle cell disease, multiple disabilities including deaf-blindness, acid attack victims, and Parkinson's disease. This broader categorization ensures that more individuals are

covered under the law to receive protection, benefits, and rights. The Act also introduces the concept of "benchmark disability," referring to individuals with at least 40% disability, making them eligible for specific entitlements like reservations in employment and education (Government of India, 2016).

The Act establishes clear rights for persons with disabilities, focusing on equality, non-discrimination, inclusion, and accessibility in all areas of life. It demands equality before the law and prohibits discrimination based on disability, ensuring reasonable accommodations in employment, education, and public services. Special provisions to protect the rights of women and children with disabilities, addressing their unique needs. The Act also guarantees the right to community living, ensuring individuals with disabilities are not forced into institutionalised care unless they choose it. It promotes inclusive education by integrating children with disabilities into mainstream schools and providing trained teachers and accessible learning materials, while also supporting the establishment of special schools when necessary. In employment, the Act mandates a 4% reservation in government jobs, promotes skill development and self-employment opportunities, and prohibits discrimination in recruitment and workplaces (Government of India, 2016).

The Act guarantees free healthcare, including access to assistive devices and medical treatments, with special attention to those with mental illness and high support needs. It provides comprehensive rehabilitation services, covering physical, psychological, and vocational aspects, to help individuals regain independence and improve their quality of life. Social security measures like pensions and insurance offer economic support, especially for those unable to work. The Act provides targeted measures for individuals with benchmark disabilities, such as free education up to age 18, a 5% reservation in higher education, and expanded job reservations. For those with severe disabilities or high support needs, the Act ensures access to essential services, infrastructure, and assistance for a dignified life (Government of India, 2016).

The Act, establishes institutional mechanisms at central, state, and district levels to ensure its proper implementation. Central and State Advisory Boards advise governments on implementing the Act, monitoring progress, and suggesting improvements for persons with disabilities. Chief and State Commissioners oversee compliance, address grievances, and enforce disability rights. District level committees ensure local level implementation and handle complaints at the grassroots level. The Act also mandates creating special courts and appointing Special Public Prosecutors to expedite trials related to offenses against persons with disabilities, ensuring timely justice (Government of India, 2016).

The Act emphasises accessibility and awareness to promote inclusion. It requires physical and digital accessibility in buildings, transportation, and communication systems to ensure persons with disabilities can fully participate in society. Awareness campaigns are mandated to promote respect for the dignity of persons with disabilities and increase understanding of their rights. Grievance Redressal Officers are appointed to handle complaints and ensure accountability. The Act also imposes penalties to prevent exploitation, discrimination, and abuse under the law (Government of India, 2016).

Conclusion

India's legal framework for persons with disabilities, supported by key legislations like the Rights of Persons with Disabilities Act, 2016, and the National Trust Act, 1999, has made significant progress in ensuring their rights, dignity, and inclusion. These laws provide access to education, employment, healthcare, and social security, creating opportunities for a better quality of life. However, challenges like inadequate infrastructure, low public awareness, and inconsistent enforcement still limit full inclusion. To address these gaps, stronger implementation, proper resource allocation, and widespread awareness campaigns are necessary. Collaboration between the government, civil society, and individuals is crucial to create a truly inclusive society. By ensuring equal opportunities and support, India can empower persons with disabilities to live independent and dignified, lives.

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Leading Change: The Role of Transformational Leadership in Organizational Transformation

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Abstract

The present article emphasises the importance of transformational leadership in facilitating organizational change by synthesizing existing literature and theoretical frameworks. A qualitative, systematic literature review was undertaken to analyse seminal studies that establish a relationship between transformational leadership and change management. The study methodology included the identification and analysis of a number of empirical and theoretical sources. These included seminal works by Bass (1985), Kotter (1996), and recent studies on leadership behaviours, innovation, and employee engagement. Findings were categorized into three major themes: core principles of transformational leadership, its role in promoting organizational change, and its impact on employee innovation and commitment. The results also show that change is effectively undertaken by transformational leadership, acting through visionary influence, cognitive stimulation, and personalized attention, to ensure reduced resistance in change, and innovation, all of which focus employees on goals. Conclusion Discussion The paper therefore concludes by discussing a conceptual model for understanding what transformational leadership can do and how it enables successful change projects and outlining possible paths for future research.

Keywords: Transformational leadership, organizational transformation, change management, leadership behaviour, organizational culture.

Introduction

All organizations today have a demand to follow rapidly changing advances in technology, market shifts, or new demands created by the workforce. It's within such a critical scenario that the change capacity has emerged to remain the superseding determinant of success within the organization. In this regard, the role of leadership is paramount in the facilitation of transformation. Of all the various

leadership styles, transformational leadership has emerged as one of the most leading forces driving organizational change: actually, the leadership model comprises a framework for the facilitation of change and adaptation while also encouraging innovation, engagement, and long-term sustainability. The core of transformational leadership is to inspire and drive employees to prioritize organizational success over personal gain. This leadership style, pioneered by James MacGregor Burns in the late 20th century, is built on the basis of four core elements: **visionary influence**, **inspirational motivation**, **cognitive stimulation**, and **personalized attention**. The effect of these components empower leaders to engage employees emotionally, challenge conventional practices, promote innovation problem-solving, and address individual needs, all of which are essential for a successful organizational change.

Organizational change, in its various forms, whether incremental or radical, often evokes resistance. Employees may feel uncertain, fearful, or disengaged in the change process, making the leadership approach critical in managing this transition. Transformational leaders not only creates an atmosphere where employees are inclined to devote more of their endeavours to the new route but also inspire them by appealing foresight and showing a deep commitment to the transformation. Change is not directed; enlisting one's team into this process enables individuals to see such transformations as threats.

As much as transformational leadership is concerned with the organization transformation, its role cannot be overemphasized. Studies have proven over the years that transformational leaders help in maximizing organizational performance, employee satisfaction, and commitment during periods of change. By concentrating on the advancement of both - the organization and its people, transformational leaders help to establish a culture of continuous improvement and adaptability. This is particularly critical in those industries which are constantly disrupted, wherein changes in direction and innovations are critical to survival.

A major advantage of transformational leadership is its ability to harmonize the individual ambitions of employees with the overall goals of the organization. Therefore, by promoting intellectual engagement, transformational leaders inspire employees to approach problems creatively and challenge conventional approaches resulting in innovation. On the other side, personalized attention takes into cognizance the unique needs and dreams of their employees and would foster a setting in which individuals experience a feeling of inclusion

and that they are engaged with the organization. Together they produce this sense of purpose that is bottom-up for changes within the organization. Besides that, transformational leadership covers all transitions, be it large scale organizational shifts or smaller alterations like the change of processes, technology adoption, or organizational restructuring. Transformation leaders play a crucial role in helping employees navigate the uncertainties associated with change, making sure that they are still involved and motivated during this time.

As organizations progress and encounter emerging obstacles, the involvement of transformational leadership in facilitating change becomes ever more significant. This study explores the evolving connection between transformational leadership and organizational change, offering insights into how leaders can effectively manage transformations and create environments where innovation and adaptability thrive. By examining the theoretical underpinnings of transformational leadership and its practical applications in various organizational settings, this article seeks to offer a thorough insight into its significance in today's rapidly changing business world.

The primary objectives of this research are:

o   To **examine the key principles of transformational leadership** and how they contribute to facilitating organizational change, focusing on elements such as visionary influence, inspirational motivation, cognitive stimulation, and personalized attention.

o   To **explore the impact of transformational leadership on employee engagement and organizational culture** during times of transformation, analysing how leaders can motivate, inspire, and align their teams with the broader organizational vision.

o   To **identify practical strategies and best practices** for leaders to implement transformational leadership behaviours effectively, ensuring successful organizational transformation, innovation, and long-term sustainability.

Theoretical Background

The concept of transformational leadership, initially proposed by James MacGregor Burns in 1978 and further developed by Bernard M. Bass during the 1980s, has evolved into a foundational element of leadership research, particularly in relation to organizational transformation. This leadership approach focuses on a leader's capacity to encourage and energize followers, driving them to reach superior levels of performance by fostering trust, commitment, and a shared vision. In contrast to transactional leadership, which centres on reciprocal relationships between leaders and followers,

transformational leadership aims to fundamentally change the perspectives, convictions, and principles of followers, motivating them to go beyond individual concerns for the greater benefit of the group.

Core Dimensions of Transformational Leadership

Bass's refinement of Burns's work established four key dimensions of transformational leadership: **visionary influence**, **inspirational motivation**, **Cognitive stimulation**, and **personalized attention**. These elements work in tandem to create an environment conducive to organizational change.

1. **Visionary Influence**: Transformational Leaders act as exemplars for their followers, demonstrating strong ethical principles and vision. This leads to admiration and respect, creating a sense of trust and loyalty, which is vital during periods of change when employees may feel uncertain.

2. **Inspirational Motivation**: These leaders communicate an inspiring vision of the future, driving employees to take action by fostering a Feeling of meaning and guidance. In times of organizational change, such vision provides clarity, reduces ambiguity, and encourages employees to synchronize their actions with the objectives of the organization

3. **Cognitive Stimulation**: Transformational leaders foster creativity and promote innovation by contesting existing presumptions and fostering innovative concepts. In an organizational transformation, this intellectual stimulation is crucial for adapting to changes and driving continuous improvement.

4. **Personalized Attention**: Leaders gives personalized attention to employees, considering their unique needs and developmental goals. By doing so, they foster a supportive environment where individuals feel valued, which increases employee engagement and reduces resistance to change.

Transformational Leadership and Organizational Change

Organizational change, particularly in today's dynamic business landscape, it calls for more than mere procedural changes—it necessitates a transformation in mindset and organizational culture. Transformational leadership facilitates this shift by promoting **adaptive behaviors** and a culture of **innovation**. Leaders who adopt a transformational approach are capable of managing resistance to change, enhancing organizational agility, and making sure that employees stay inspired and involved throughout the entire transformation journey.

Additionally, transformational leadership theory has been linked to numerous positive organizational outcomes, including **improved performance**, **greater employee satisfaction**, **increased commitment**, and **better organizational resilience** in the face of change. The theory underscores the importance of emotional awareness and the capacity to engage with employees on both a cognitive and emotional plane, making it especially relevant for organizations undergoing significant transformations.

Literature Reviews

Transformational leadership has been thoroughly examined within the framework of organizational change, with numerous studies demonstrating its beneficial effect on both individual and organizational performance. Research suggests that transformational leadership is especially impactful during periods of change, as it motivates employees to align with new goals, foster innovation, and embrace transformation.

In 1985, Bass built upon Burns's foundational work by creating the Multifactor Leadership Questionnaire (MLQ), a tool that facilitated the practical application of transformational leadership. According to Bass, transformational leaders motivate and engage followers intellectually followers, which enables organizations to adapt to changing environments. His research highlighted that transformational leadership leads to enhanced employee performance and satisfaction, particularly during periods of organizational change (Bass, 1985). This view was echoed by several subsequent studies, including those by Avolio and Bass (1995), who found that transformational leadership is strongly associated with improved organizational performance and preparedness for change.

A central feature of transformational leadership is its capacity to nurture an innovative organizational culture. According to Zhu, Avolio, and Walumbwa (2009), behaviors associated with transformational leadership, especially intellectual stimulation, motivate followers to think outside the box and question established norms. This is crucial for organizations undergoing change. These leaders create an atmosphere where employees feel more empowered to try out new ideas and methods, a vital characteristic for successfully managing transformation (Zhu et al., 2009).

Beyond promoting innovation, transformational leadership is also vital in addressing resistance to change. Kotter (1996) highlighted the significance of establishing a sense of urgency and establishing a shared vision during organizational transformation. Transformational leaders excel at communicating this vision, inspiring employees to see view change as a chance for growth rather than

a danger. By promoting a sense of collective purpose and emotional commitment, transformational leaders reduce resistance and increase organizational buy-in (Kotter, 1996).

Furthermore, the emotional intelligence of transformational leaders is vital in managing the human aspect of organizational change. Goleman (1998) argues that leaders who possess high emotional intelligence—particularly in self-awareness, empathy, and social skills—are better equipped to lead their teams through change. Transformational leaders use these emotional competencies to establish trust, nurture solid relationships, and cultivate a positive work atmosphere, which is critical when navigating uncertainty during change initiatives.

Overall, the literature highlights that transformational leadership is a powerful tool for guiding organizations through change. It not only improves employee engagement and performance but also allows organizations to stay flexible and adaptable when confronted with shifting market demands. Transformational leadership's emphasis on vision, innovation, and emotional intelligence equips leaders with the necessary skills to drive successful organizational transformations.

In addition to the works by Bass (1985) and Avolio and Bass (1995), recent research have further reinforced the connection between TL and organizational change. For instance, as per Gebert et al. (2014) transformational leadership fosters **team innovation** by creating an atmosphere where employees feel empowered to offer fresh insights or propose innovative concepts. This is particularly important during periods of change, as organizations need to innovate to remain competitive. Moreover, research by Bass and Riggio (2006) highlighted that transformational leadership's emphasis on **personalized development** and **employee empowerment** increases **organizational commitment**, which is crucial for ensuring long-term success during transformations.

Another significant contribution comes from Wang et al. (2011), who found that transformational leaders not only influence **followers' behaviors** but also influence the broader organizational culture, ensuring it aligns with the vision of change. This cultural alignment fosters trust and collaboration across different organizational levels, enhancing the ability to execute complex changes. Moreover, research by Judge and Piccolo (2004) demonstrated that transformational leadership have a beneficial impact on **organizational performance**, particularly when employees contribute to the decision-making process processes. The integration of transformational leadership within change management frameworks, therefore, enhances an organization's ability to adjust, innovate, and thrive in a fast-changing environment.

Research Methodology

The research methodology employed in this article is a **qualitative, theoretical analysis** of the current body of research on transformational leadership and organizational change. Given the aim to explore and synthesize the connection between transformational leadership and its influence on organizational change, the study follows a systematic review approach. The methodology involves several key stages, including **literature selection**, **data analysis**, and **synthesis of findings**, with a particular focus on both **empirical studies** and **theoretical contributions**.

Literature Selection

The first step in the research methodology is identifying and selecting relevant academic sources. A comprehensive search was conducted in academic databases such as **Google Scholar**, **JSTOR**, **ScienceDirect**, and **SpringerLink**. The selection criteria for inclusion were:

- **Relevance**: Studies specifically addressing transformational leadership, organizational change, and their intersection were prioritized.
- **Recency**: Focus was given to studies released in the last twenty years to incorporate up-to-date viewpoints and findings.
- **Reputation**: Only peer-reviewed articles, books, and book chapters published by recognized scholars and experts in the field were considered.

Key search terms included "transformational leadership," "organizational change," "leadership and innovation," "employee engagement," and "change management."

Data Collection

The data collection process primarily involved gathering both **empirical studies** and **theoretical literature**. Empirical studies provided quantitative or qualitative data on the effect of transformational leadership on organizational transformation, while theoretical literature offered frameworks, models, and conceptual insights. A total of 25 articles and books were reviewed in-depth. These included seminal works by **Bass (1985)**, **Kotter (1996)**, **Zhu et al. (2009)**, and newer research exploring the connection between leadership approaches and change management practices. In addition to peer-reviewed journal articles, the review also incorporated well-regarded management textbooks and government or institutional reports that discuss leadership theory and its application in organizational settings.

Data Analysis

The analysis of the selected literature involved several steps:

- **Categorization**: The studies were categorized into three primary themes: (a) the core principles of transformational leadership, (b) The impact of transformational leadership in enabling organizational transformation, and (c) The effect on employee involvement and creativity.

- **Synthesis of Findings**: A key component of the methodology was synthesizing findings across different studies to identify overarching patterns and insights. The research focused on how transformational leadership behaviors—such as Visionary influence, cognitive stimulation, and personalized attention —contribute to successful organizational transformations. Studies that showed the connection between leadership style and outcomes such as creativity, employee well-being, and organizational success was emphasized.

- **Comparative Analysis**: Where relevant, the studies were compared to highlight discrepancies or complementary findings between different contexts (e.g., public vs. private sector organizations, or large vs. small companies). This was particularly important to comprehend the differing impact of transformational leadership in various organizational settings.

- **Theoretical Integration**: The literature was also analyzed in light of existing leadership theories. For example, **Bass's (1985) Multifactor Leadership Questionnaire (MLQ)** and **Kotter's (1996) 8-Step Change Model** were integrated to show how transformational leadership aligns with established frameworks for successful organizational change.

Synthesis and Discussion

The synthesis involved integrating the theoretical and empirical findings to build a comprehensive understanding of how transformational leadership drives organizational transformation. The findings were organized into key sections that addressed the role of leadership in innovation, employee engagement, and overcoming resistance to change.

Finally, the results were used to propose a conceptual framework for understanding how transformational leadership can be practically applied to facilitate change in organizations. This framework emphasizes the importance of **visionary leadership**, **employee engagement**, and **organizational culture** in supporting transformation.
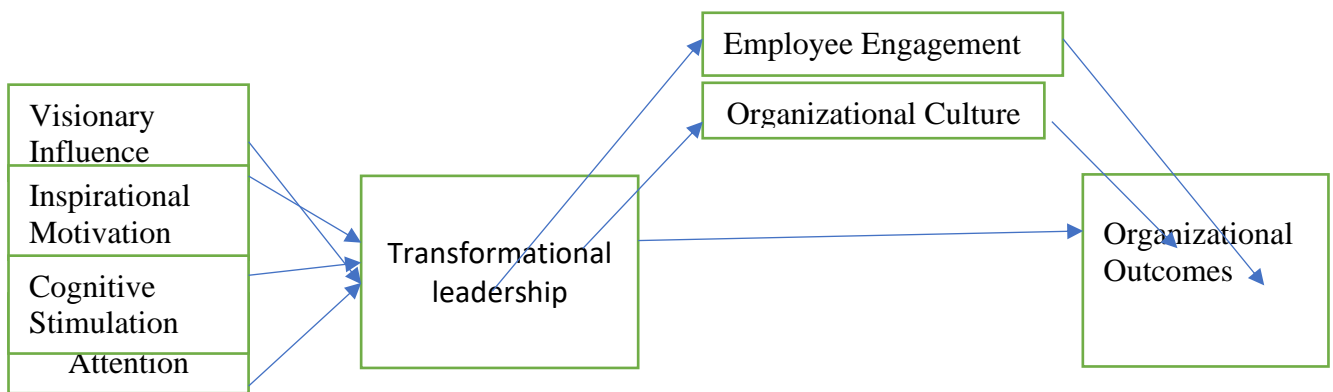
Fig1: Conceptual Framework

Transformational Leadership Behaviours act as the **independent variable** in the model. These behaviours include:

- **Visionary Influence**: Leaders serve as role models, inspiring trust and respect from their followers.
- **Inspirational Motivation**: Leaders motivate and inspire followers by articulating a clear vision and setting high expectations.
- **Cognitive Stimulation**: Leaders encourage creativity and innovation by challenging existing assumptions and promoting new ways of thinking.
- **Personalized Attention**: Leaders provide individualized attention to followers, offering mentorship and support for personal development.

Leadership behaviours inspire, motivate, and empower followers, creating a foundation for **positive follower responses** and improving **organizational outcomes**. The mediating variables explain **how** and **why** transformational leadership influences outcomes. They link leadership behaviours to **organizational outcomes.** The **conceptual model** illustrates the complex dynamics between **leadership behaviour** and **organizational outcomes**. By incorporating **mediating** variables, the model helps explain the pathways through which transformational leadership leads to organizational success.

Limitations and Future Research

As a qualitative review, the study acknowledged the limitations of generalizing the findings to all types of organizations, especially in contexts where leadership styles may differ (e.g., autocratic vs.

transformational). Future research directions were also suggested, including empirical studies that examine the immediate influence of transformational leadership on specific organizational change initiatives, particularly in industries undergoing rapid technological disruptions.

Conclusion

This research approach integrates a structured review of existing literature with conceptual analysis to offer an in-depth insight into the function of transformational leadership in driving organizational transformation. By synthesizing existing research, the study builds on both theoretical insights and empirical evidence, offering a holistic perspective on how transformational leadership enables effective organizational change.

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Pharmaceutical Patents in the Context of AI – Enhanced Drug Discovery: Existing Challenges and Future Outlook

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Abstract

As the pharmaceutical sector increasingly adopts the transformative capabilities of artificial intelligence (AI) in drug discovery, a convergence of technological innovations and legal intricacies emerges, influencing the realm of pharmaceutical patents. The incorporation of AI into drug discovery has expedited the identification of new candidates and optimized the research workflow. Nevertheless, this shift in paradigm introduces various challenges within the patenting domain. A significant concern revolves around the interpretation of inventive steps and novelty criteria, as AI algorithms formulate hypotheses and pinpoint potential drug candidates in manners that may diverge from conventional approaches. This creates difficulties in establishing the patentability of inventions generated by AI. The evolving landscape of AI-driven drug discovery raises apprehensions regarding the adequacy of disclosure and enablement. Patent applications are required to adequately detail the AI algorithms and methodologies utilized; however, achieving a balance between necessary disclosures and safeguarding proprietary information is a nuanced endeavor. Additionally, we examine the ramifications of AI-generated inventions within the traditional patent examination framework. Assessing inventions through sophisticated algorithms and data-driven insights poses challenges for examiners, particularly in comprehending both the technological and legal dimensions involved. The added complexity of the FDA's demand for substantial data to grant trial access further complicates the overall process. In light of these challenges, this research proposes several potential solutions, including the development of guidelines for patent examiners tasked with evaluating AI-generated inventions and fostering collaboration between professionals in the pharmaceutical and legal fields. This underscores the global significance of modifying patent legislation to align with the rapidly changing environment of AI in drug discovery. With a focus on AI-driven medication development, this study highlights the obstacles encountered in the realm of pharmaceutical patents. Effectively tackling these challenges is essential for expediting research, enhancing cost-effectiveness, and encouraging innovation at the convergence of AI and pharmaceutical patent law, ultimately benefiting human wellbeing.

Introduction

The landscape of pharmaceutical patents is being influenced by the intersection of technological advancements and legal challenges as the pharmaceutical sector increasingly adopts the transformative capabilities of artificial intelligence (AI) in drug discovery. The integration of AI has accelerated the identification of new drug candidates and optimized the research process. However, this shift presents several challenges in the realm of patenting. A significant issue arises from the fact that AI algorithms generate hypotheses and identify potential drug candidates in ways that may diverge from conventional methods, raising questions about how to assess the criteria of inventiveness and originality. Determining the patentability of inventions produced by AI poses a complex challenge. Additionally, there are concerns regarding whether the disclosure and enablement requirements are sufficient, given the rapidly evolving nature of AI-driven drug discovery. Patent applications must thoroughly describe the AI algorithms and methodologies employed, yet achieving a balance between necessary disclosures and the protection of proprietary information is often problematic. Furthermore, the implications of AI-generated inventions on traditional patent examination processes warrant discussion. Patent examiners face difficulties in comprehending the technological and legal dimensions involved in evaluating inventions that utilize advanced algorithms and data-driven insights. This complexity is further compounded by the FDA's stipulation that a significant volume of data must be provided to gain access for trials.

This Research Article makes several potential solutions to the identified issues, such as establishing guidelines for patent examiners to assess AI-generated innovations and promoting collaboration between legal experts and pharmaceutical professionals. It underscores the necessity for a global evolution of patent regulations to accommodate the transformative impact of AI on drug research. Given the context of AI-driven pharmaceutical development, this analysis brings to light the difficulties encountered in the realm of pharmaceutical patents. To enhance research, improve cost efficiency, stimulate innovation at the intersection of artificial intelligence and pharmaceutical patent legislation, and ultimately benefit human health, it is essential to address these challenges comprehensively.

Artificial Intelligence and Pharmaceutical Industry

The reader is taken on a tour of the ever-evolving field of artificial intelligence (AI) and how it is revolutionizing the pharmaceutical industry's approach to drug discovery. We decipher the complex mechanisms by which artificial intelligence (AI) technologies expedite the discovery of new candidates and optimize the conventionally laborious research procedures. The investigation starts out by analyzing how artificial intelligence (AI) is transforming the drug discovery process. This includes highlighting how AI can scan large datasets, spot trends, and provide hypotheses at a rate of speed and efficiency never before seen. We examine case studies that highlight the use of AI for predicting medication interactions, clarifying chemical structures, and accelerating target identification. AI-driven strategies outperform traditional approaches in the search for promising therapeutic molecules, resulting in a paradigm shift in the effectiveness and reach of pharmaceutical research. Examined is the integration of deep learning models, machine learning algorithms, and other AI approaches, highlighting their cooperative role in enhancing human capacities in drug discovery. This investigation establishes the foundation for comprehending the complex interplay between AI technology and medication development, preparing the reader for the subsequent chapters that examine the legal issues resulting from this revolutionary combination. Early drug discovery is a crucial step that entails looking for chemical compounds across a wide range of scientific fields in a huge and complex environment. Because of the intricate interactions among millions of proteins and 25,000 genes in the human biological system, the process is inevitably delayed. The challenge of handling this complexity is the reason behind the high failure rate in medication development. The early stages of medication creation have been greatly impacted by recent developments in artificial intelligence (AI). AI speeds up the process of finding new therapeutic candidates by utilizing machine learning and digitization. The digital search area has grown as a result of the digitization of scientific knowledge, giving artificial intelligence (AI) access to a wider range of data to find possible compounds. AI algorithms may traverse a far larger innovation space than traditional approaches constrained by human skill, allowing for the recombination of innovation. AI is able to search through the combinatoric space and find new compounds with desired pharmacological effects because of its autonomous capacity to gather, evaluate, and discover complicated patterns in already-existing data. In many domains, supervised learning—a machine learning technique—can more quickly and reliably anticipate relationships than human beings. This skill is especially helpful in scenarios when navigating vast, complex data sets, as in compound discovery, is the bottleneck for scientific discovery.

The Dual Role of Artificial Intelligence in the Realms of Drug Discovery and Patenting

The double role that artificial intelligence (AI) plays in the pharmaceutical sector, outlining how it changes both medication discovery and patent analysis. Artificial intelligence (AI) is a disruptive force that easily fits into these important areas, changing the way that pharmaceutical innovation is done.

Artificial Intelligence's predictive analytics is a very useful tool in the field of drug research. It does this by analyzing large datasets, which speeds up the process of finding possible medication candidates and improves molecular structure, thereby making the innovation pipeline more efficient. Prominent examples, like Atomwise's AI-powered drug discovery tool that finds new medicines for Ebola, highlight the real-world achievements AI has made in this field. The use of AI in patent analysis appears to be revolutionary. AI algorithms find opportunities for technological advancement and gaps in the market by sifting through the complex web of patents currently in existence. Case law demonstrates the strategic value of patents and the necessity of advanced analysis tools like artificial intelligence. One such example is the legal battle between CRISPR Therapeutics and the Broad Institute around the ground-breaking gene-editing technique known as CRISPR-Case.

When it comes to making strategic decisions, the dual role of AI is very apparent. Artificial Intelligence (AI) plays a crucial role in patent portfolio optimization by directing research priorities and budget allocation. The legal complexity of patents in the pharmaceutical industry are highlighted by notable cases like Mayo Collaborative Services v. Prometheus Laboratories, Inc., which emphasize the necessity for AI-driven insights. AI's dual benefit not only improves operational efficiency but also drastically cuts down on the time and expense involved in research and patent analysis. IBM's Watson for Drug Discovery is one notable example of how AI simplifies the drug development process through the analysis of clinical trial data and scholarly literature.

The transformational potential of artificial intelligence (AI) is highlighted in this chapter, not just as a technological instrument but also as a strategic ally influencing comprehensive developments across the pharmaceutical lifecycle. Through the integration of knowledge gleaned from both patent analysis and molecular optimization, artificial intelligence becomes a key factor in transforming the direction of pharmaceutical discoveries in the future. AI, drug discovery, and patent analysis work together to foster efficiency and creativity, opening the door for a new era of patent-driven pharmaceutical breakthroughs.

Issues Relating to Patentability of AI Generated Innovations

The complex landscape of patentability issues raised by the use of artificial intelligence (AI) in medication development is problem that arises when using AI algorithms to create hypotheses and find prospective medication candidates in ways different from previous methods is understanding the inventive step and novelty criteria. The special factors needed to evaluate the creative contributions of AI-generated innovations, delving into the intricate nuances of determining their patentability. The dynamic character of AI-driven drug development makes it difficult to satisfy conventional patent requirements, which calls for a review of existing legal frameworks. Technological developments are necessary to address issues in nucleic acid-based research, such as pharmacokinetic modulation and molecular stabilization. Although AI has great promise for innovation and discovery in drug delivery, its limitations require human interaction for the interpretation of complex data. AI predictions are based on datasets, but in order to draw the right conclusions, human skill is needed for result interpretation and handling of gray regions. In order to make effective decisions, docking simulations may reveal inactive molecules due to algorithm bias, which emphasizes the importance of critical examination and human engagement. The extensive effects of incorporating artificial intelligence (AI) in drug development on the conventional patent examination procedure are critically examined in this study. Patent examiners are faced with a distinct set of issues as AI-generated inventions become more commonplace.

Artificial Intelligence (AI) approach involves machine learning or its subcategories, like natural language processing and deep learning. Both supervised and unsupervised learning are important because they deal with known inputs and unknown outputs. Within the pharmaceutical domain, the synopsis underscores the continued significance of small molecules, the expansion of biomolecular medications, and the promise of artificial intelligence (AI), underscoring the necessity of human intervention to surmount current impediments and guarantee sound decision-making in novel drug development and delivery. new challenges stem from the need to assess the technological and legal aspects of new breakthroughs. We develop a binary variable that indicates whether or not a pharmacological impact mechanism for treating a medical condition is understood. Over time, medications and the diseases they treat are linked by our drug development database. In order to identify potential mechanisms of action, drugs with indications for "Unidentified pharmacological activity" or "Not applicable" are labeled as having no known mechanisms. To determine the drug mechanism, we also utilize the free text found in the DrugBank database, which offers detailed information about each drug's mode of action.

Implications for Patent Examination

The first part of the conversation starts with a look at the challenges of analyzing innovations powered by sophisticated AI algorithms and data-driven insights. Patent examiners must have a sophisticated understanding of rapidly developing technology in order to comprehend the unique approaches utilized by AI in drug discovery. The integration of artificial intelligence in drug discovery has revolutionized the pharmaceutical industry, leading to accelerated identification of novel candidates and streamlined research processes. However, this paradigm shift presents several challenges when it comes to patenting AI-generated inventions. One key challenge lies in interpreting the criteria of novelty and inventive step. AI algorithms generate hypotheses and identify potential drug candidates in ways that may differ from traditional methods, raising questions about the patentability of AI-generated inventions.

The difficulties in standardizing the evaluation of patent applications pertaining to inventions produced by AI. Reevaluating existing examination frameworks is necessary as patent offices struggle to modify their review processes to include the unique characteristics of AI-driven innovations. The regulatory restrictions, especially those established by the FDA, create extra levels of complexity that further complicate the assessment process. An further challenge in the patent examination process is the requirement for a significant volume of data to authorize trial access, necessitating a careful balancing act between patentability and regulatory compliance. Given these difficulties, the chapter ends by emphasizing the urgent need for novel ways to patent assessment and outlining some frameworks and strategies that can improve the efficacy and efficiency of assessing AI-generated patents in the pharmaceutical industry.

The Economic Value of Intellectual Property Rights Particularly to Patent

The application of computational intelligence methodologies, in particular, artificial neural networks and algorithms like support vector regression (SVR) and extreme learning machines (ELM)—proves useful in the field of economic development. ELM is a tool used by researchers like Markovic to predict GDP growth rates. In their contribution, suggest a quantitative model for predicting company performance that makes use of deep neural networks and SVR, using financial and patent indicators as predictors. This model consists of a back propagation method for fine-tuning and a limited Boltzmann machine for unsupervised learning. Researchers in the US pharmaceutical sector use artificial neural networks to investigate how patent indicators both qualitative and quantitative affect a company's market value. According to the findings, instead of focusing all of their

resources on one area of technology, businesses should diversify their technological capabilities to prevent losing out on new chances. Additional research examines the nonlinear impacts of employee productivity, firm size, and profitability on patent citations. It also examines the connection between the relative patent position in the firm's most important technological field and the Herfindahl-Hirschmann Index (HHI) of patents. Bass and Kurgan concentrate on patents related to nanotechnology and use classification methods to find characteristics that set high-performing inventions apart from others in the field. Furthermore, Lai and Che present a valuation model based on an extended neural network that determines a patent's legal value by taking into account the damages awarded in cases of patent infringement. All things considered, these studies show the many ways that computational intelligence is used in economic development, patent valuation, and company performance prediction.

Regulatory Challenges in AI-Driven Drug Discovery

The complex interactions between the regulatory environment and inventions produced by artificial intelligence (AI) in drug discovery, with a particular emphasis on the difficulties presented by the strict regulations imposed by regulatory organizations, most notably the Food and Drug Administration (FDA).

The first part of the conversation delves into the regulatory nuances that come with approving AI-driven drug discovery advances. A significant obstacle is the FDA's requirement for a significant volume of data to authorize trial access, which calls for a careful balancing act between meeting legal requirements and proving patentability. More attention is paid to how AI-generated technologies' distinct qualities might affect how well they fit into the current regulatory landscape. The chapter emphasizes how regulatory norms must be modified to account for the unique characteristics of AI-driven drug discovery in order to maintain a peaceful coexistence between innovation and compliance. The changing regulatory environment surrounding AI-driven pharmaceutical inventions, recognizing the necessity of interdisciplinary cooperation between patent and regulatory experts to manage the complex requirements and guarantee a smooth introduction of these breakthroughs into the pharmaceutical market. In this part explores how crucial it is to address regulatory obstacles in order to successfully support the development and commercialization of AI-driven medicinal discoveries, which will eventually improve patient care.

Potential Solutions to the Problems Due to use of AI in Medical Development

Creative answers to the problems with patentability and the streamlined patent review procedure brought up by the use of artificial intelligence (AI) in medicine development. Acknowledging the intricacies present in this dynamic environment, we suggests innovative and workable approaches to balance legal obligations with technological progress.

The conversation starts off by promoting the creation of thorough standards designed specifically for patent examiners who are entrusted with evaluating ideas generated by artificial intelligence. These guidelines seek to bring clarity in light of AI's distinctive contributions to drug development by establishing a methodical framework for assessing the innovative step, originality, and sufficiency of disclosure criteria. The possible advantages of encouraging cooperation between legal experts and pharmacological specialists. The goal is to improve knowledge of legal nuances and technological complexities by promoting interdisciplinary partnerships, which will ultimately lead to a more informed and effective patent examination process.

Artificial Intelligence in Drug Development. This problem has sparked debates over whether patent laws should be changed in order to protect AI-generated inventions fairly and effectively in this quickly developing industry. Therefore, to address the patentability and ownership of AI-generated inventions in the pharmaceutical business, legislative and legal changes may be required. By making these adjustments, pharmaceutical companies would be able to safeguard their AI-based inventions more successfully and provide more people with access to reasonably priced medications. To further navigate the difficulties of patenting AI-generated discoveries, pharmaceutical corporations and AI-powered drug research organizations must work together. Pharmaceutical companies can work together to improve their drug development process by utilizing the creative thinking and experience of AI-powered companies, all the while managing the complicated legal issues related to patent protection. The concerns about patentability and ownership of AI-generated discoveries in drug discovery must be addressed.

The suggested remedies also take into account the issue's worldwide scope, highlighting the necessity of aligning patent rules throughout the world to account for artificial intelligence's revolutionary effects in drug discovery. This means pushing for global standardization and collaboration in order to modify legal frameworks to reflect the quickly changing environment. This study important it is to deal with AI's challenges to pharmaceutical patenting in a proactive manner. It

attempts to create a more flexible and cooperative atmosphere that encourages creativity while guaranteeing strong legal protection by providing tangible answers. AI is bringing in a new era in drug development by transforming conventional methods and providing creative solutions. The combination of AI and high-throughput screening is a new trend that makes it possible to analyze vast chemical libraries quickly. By forecasting the biological activity of possible drug candidates, our method expedites the screening process and improves detection of such candidates1. Furthermore, Zhavoronkov et al.'s work demonstrates the growing popularity of AI-driven de novo drug design, which uses deep generative models to create novel chemical compounds with desired pharmacological properties.

Global Perspectives on Patent Laws for AI in Drug Discovery

This international perspective offers a thorough examination of the global ramifications of modifying patent rules to take into account the rapidly changing artificial intelligence (AI) drug development landscape. The discourse transcends national boundaries, highlighting the worldwide aspect of pharmaceutical innovation and the necessity of unified legal structures. The significance of global collaboration in tackling the obstacles presented by artificial intelligence-generated innovations. In order to provide uniform criteria that manage the difficulties of patenting AI-driven discoveries and promote a consistent and encouraging environment for pharmaceutical breakthroughs, it emphasizes the need for cross-border collaboration. Using a patent analysis, the current study sheds light on past trends in neurodegenerative and rare illness drug discovery and research. It is crucial to remember that the methodology used has limitations because "biological" components like vaccinations and lengthy peptides are not included. One such restriction is the indirect link between patents and proteins because the patents were created using chemical modulators and the original proteins might not even be referenced in the document. The best solution to this is to do additional analysis utilizing natural language processing (NLP) techniques to extract gene annotations from patent documents. Examining the state of the world patent system today demonstrates the various tactics that various governments have used in reaction to AI-driven drug development. In order to highlight the differences in legal interpretations and the possible repercussions for global innovation.

The international organizations and treaties have influenced how patent rules have evolved to reflect breakthroughs in artificial intelligence. This chapter delves into the manner in which entities such as the World Intellectual Property Organization (WIPO) facilitate the standardization of patent practices, providing valuable perspectives on possible avenues for international collaboration. A

comprehensive analysis of current changes in worldwide patent law pertaining to artificial intelligence (AI) in drug discovery is presented to support these talks. This analysis provides a nuanced knowledge of the potential and problems that various countries confront. The urging cooperation on the global scene and highlighting the necessity of quickly modifying patent laws around the world to guarantee a smooth incorporation of AI in pharmaceutical research.

The Prospects of Artificial Intelligence in Advancing Pharmaceutical Innovation

With the integration of artificial intelligence (AI) promising ground-breaking breakthroughs in medication research and patient care, the pharmaceutical industry is poised for a transformative era. In order to usher in a new era of precision medicine and post-marketing surveillance, this chapter examines the prospective developments in AI's function within pharmaceutical innovation. It places special emphasis on predictive analytics, machine learning, and the integration of real-world evidence.

The development of artificial intelligence has resulted in a paradigm change in the way pharmaceutical innovation is planned and carried out. Precision medicine is about to undergo a paradigm shift because to machine learning and predictive analytics. Artificial Intelligence (AI) holds the potential to customize medicines based on the unique characteristics of each patient by evaluating large datasets that include genetic, molecular, and clinical information. This personalized approach would maximize therapeutic success while minimizing side effects.

Mamoshina et al.'s groundbreaking study provides evidence of the revolutionary potential of AI in predicting patient reactions to particular therapies. AI algorithms are able to interpret complex patterns in biological data of patients by means of thorough genetic profiling, which makes it possible to anticipate individual responses to various treatments. This is a major step toward patient-centered care because it not only increases treatment efficacy but also lowers the risk of adverse reactions. Post-marketing surveillance is about to undergo a revolution thanks to the predicted integration of AI with real-world evidence (RWE). Utilizing RWE, which comes from a variety of sources like social media, patient registries, and electronic health records, allows for a more thorough understanding of how well a drug works in actual situation. This integration makes it possible to track the efficacy of treatments, identify safety concerns in a timely manner, and modify therapeutic approaches in light of actual experiences. Using real-world data, Rajkomar et al.'s recent review examines the numerous uses and difficulties of utilizing AI in healthcare. The writers explore how AI might be used to manage the complexity of many data sources, guaranteeing its accuracy and applicability in guiding healthcare

choices. They also highlighted the difficulties that come with integrating AI into healthcare systems, including protecting patient privacy, controlling biases, and handling ethical issues.

Conclusion

This paper ultimately explores the critical issues surrounding artificial intelligence in the context of pharmaceutical patents and the transformative impact of AI on drug discovery. AI introduces unprecedented challenges related to patentability while accelerating the identification of new drug candidates and optimizing research processes. Building upon this foundation, the paper delves into the intricate patentability issues arising from the distinctive nature of inventions generated by AI. It addresses the complexities involved in assessing inventive steps and novelty criteria, as well as the delicate balance required to ensure sufficient disclosure without compromising proprietary information. The paper also explores the intricate implications for the patent examination process, shedding light on the challenges faced by examiners as they navigate the intersection of legal and technological domains. Furthermore, it underscores the regulatory considerations that significantly influence the patent landscape, particularly the stringent data requirements imposed by the FDA. The chapter highlights the importance of establishing standards for patent examiners, fostering collaboration between legal and pharmaceutical experts, and advocating for the global harmonization of patent laws while examining various potential solutions. The conclusion offers insights into the evolving nature of AI-driven drug development, the shifting landscape of patent legislation, and the necessity for a coordinated international approach to adapt legal frameworks in response to the opportunities and challenges presented by advancements in AI within the pharmaceutical sector.

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GST Implementation in Indian Family Businesses: Navigating Challenges and Embracing Opportunities

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Abstract

The implementation of the Goods and Services Tax (GST) in India on July 1, 2017, has brought significant changes to the operational dynamics of family businesses. This theoretical study aims to explore the effects of GST on family businesses, focusing on aspects such as operational efficiency, compliance, and overall performance. By adopting a mixed-methods approach, including qualitative interviews and quantitative data analysis, this research seeks to identify the challenges and opportunities presented by GST for family businesses. The study further aims to propose strategies for effective GST compliance and operational efficiency, contributing to the existing body of knowledge on tax reforms. The findings of this research will help policymakers and business owners understand the implications of GST on family businesses and navigate the complexities of the tax regime.

Keywords: GST, family businesses, tax reform, operational efficiency, compliance

Introduction

The Goods and Services Tax (GST), introduced in India on July 1, 2017, represents one of the most significant tax reforms in the country's history. This comprehensive indirect tax system was implemented with the goal of simplifying the existing tax structure and eliminating the cascading effect of multiple taxes that previously existed. The introduction of GST has had a profound impact on family businesses, which constitute a substantial portion of the Indian economy. These businesses, often characterized by their traditional practices and limited resources, have faced various challenges and opportunities due to GST implementation. The focus of this research proposal is to explore the theoretical aspects of GST and its implications for family businesses. Specifically, it aims to examine how GST has affected business operations, including changes in pricing strategies, supply chain management, and cash flow. Additionally, the research will investigate the compliance requirements

under GST and their impact on the administrative burden of family businesses. Finally, the proposal seeks to assess the overall performance of family businesses post-GST implementation, considering factors such as profitability, growth, and competitiveness. Through this comprehensive analysis, the research intends to provide valuable insights into the theoretical and practical implications of GST on family businesses in India.

The implementation of the Goods and Services Tax (GST) in India has had a significant impact on family businesses. Here are some key points to consider:

1. **Simplified Tax Structure**: GST replaced multiple indirect taxes like VAT, excise duty, and service tax with a single unified tax system. This simplification has made it easier for family businesses to comply with tax regulations.

2. **Input Tax Credit (ITC)**: Family businesses can now claim ITC on the taxes paid on inputs, which helps in reducing the overall tax burden. This feature promotes efficiency and reduces the cascading effect of taxes.

3. **Uniform Tax Rates**: GST has established uniform tax rates for various categories of goods and services, ensuring consistency across different states. This uniformity simplifies compliance for family businesses operating in multiple regions.

4. **Increased Compliance Burden**: While GST simplifies the tax structure, it also increases the compliance burden due to the need for regular filing of returns and maintaining proper documentation.

5. **Impact on Pricing**: The introduction of GST has led to changes in pricing strategies for family businesses. They need to adjust their prices to reflect the new tax rates, which can affect their competitiveness.

6. **Sector-Specific Impacts**: The impact of GST varies across different sectors. For example, small and medium-sized enterprises (SMEs) may face challenges in adapting to the new tax regime, while larger businesses might benefit from the streamlined tax system.

Research Objectives

1. To analyze the theoretical frameworks underlying GST implementation in family businesses.
2. To examine the impact of GST on the operational efficiency and compliance of family businesses.
3. To identify the challenges and opportunities presented by GST for family businesses.
4. To propose strategies for family businesses to effectively navigate the GST regime.

Literature Review

The literature review will cover existing studies on GST implementation in India and other countries.

Theoretical Frameworks on Tax Reforms and Their Impact on Businesses: Literature Review

Corporate Tax Reforms

Corporate tax reforms aim to simplify tax structures, enhance business competitiveness, and attract investments. Neelakantaswamy G.C. (2023) examined the impact of corporate tax reforms on the business environment and economic growth in India, highlighting that lower tax rates incentivize businesses to reinvest savings into capital expenditure, technology upgrades, and expansion initiatives. This boosts productivity, fosters innovation, and creates employment opportunities.

Goods and Services Tax (GST)

The implementation of GST in India aimed to simplify the tax structure and eliminate the cascading effect of multiple taxes. Kasina Naga Suryanarayana (2024) analyzed the impact of GST on Indian businesses, finding that while GST has streamlined the taxation process and contributed to economic formalization, it has also posed challenges, particularly for smaller businesses struggling with compliance and technological adaptation

International Tax Reforms

International tax reforms, such as the withdrawal of equalization levies on e-commerce transactions, aim to simplify tax structures, reduce compliance burdens, and resolve tax disputes. The Financial Express (2024) discussed the impact of these reforms on Indian businesses, noting that while some sectors benefited from streamlined tax administration, others faced challenges due to changes in tax treatment.

Studies on the Effects of GST on Small and Medium-sized Enterprises (SMEs) and Family Businesses: Literature Review

Impact of GST on SMEs

The implementation of GST has significantly transformed the operations of SMEs in India. According to Zoho Books (2024), GST has simplified the tax structure by unifying various taxes into a single tax, thereby reducing the compliance burden and administrative costs for SMEs The streamlined process for registering, filing returns, and paying taxes has allowed SMEs to focus more

on growth and less on administrative tasks. Additionally, the elimination of interstate commerce barriers has expanded market reach for SMEs, enabling them to compete more effectively with larger enterprises.

Challenges Faced by SMEs

Despite the benefits, GST has also posed challenges for SMEs. The increased compliance costs and the need for multiple registrations for pan-India businesses have added to the administrative burden3. SMEs have had to invest in technology and training to adapt to the new tax regime, which has been particularly challenging for smaller enterprises with limited resources.

Impact on Family Businesses

Family businesses, which often operate with traditional practices and limited resources, have been significantly affected by GST. The transition to the new tax system has required family businesses to overhaul their accounting practices and invest in compliance infrastructure. While some family businesses have benefited from the simplified tax structure and reduced logistics costs, others have struggled with the increased compliance requirements and technological adaptation.

Research on the Challenges and Benefits of GST Implementation in Different Sectors: Literature Review

Fast-Moving Consumer Goods (FMCG) and Pharma

The implementation of GST has had a mixed impact on the FMCG and pharmaceutical sectors. On the positive side, the subsumption of various taxes such as entry tax, octroi, and local body tax under GST has simplified pricing decisions and compliance processes. Additionally, the removal of the Central Sales Tax has led to better inventory management and improved working capital. However, challenges include the anti-profiteering provisions and rate rationalization steps, which have created pricing challenges for companies. Issues surrounding discount schemes, promotional offers, and the treatment of expired products have also been areas of concern.

Information Technology (IT) Industry

The IT industry has benefited from the simplified tax structure under GST, which has eliminated the dual taxation of software under VAT and service tax. This has streamlined tax compliance and reduced administrative burdens. However, the complex structure of multiple tax slabs

has posed challenges for SMEs in adhering to diverse regulations. Additionally, the lack of full understanding of the GST system among some businesses has added to the complexity.

Overall Impact on Various Sectors

A comprehensive assessment by Parag Barman (2023) highlighted that GST aims to simplify the tax structure, eliminate the cascading effect of taxes, widen the tax base, improve compliance, enhance revenue collection, and promote economic growth. However, the implementation faced challenges such as technical glitches, lack of awareness, resistance from some states and sectors, and transitional issues. The study used a mixed-methods approach to evaluate the macroeconomic impact and stakeholders' perceptions of GST.

Research Design and Methodology

The research will adopt a mixed-methods approach, combining qualitative and quantitative data collection and analysis. The methodology will include:

- **Qualitative Analysis**: Conducting in-depth interviews with family business owners and tax professionals to gather insights on their experiences with GST implementation.
- **Quantitative Analysis**: Analyzing financial data from family businesses to assess the impact of GST on their operational efficiency and compliance.
- **Case Studies**: Examining specific family businesses that have successfully adapted to the GST regime to identify best practices and strategies.

Data Collection

Data will be collected through:

- **Surveys**: Distributing structured questionnaires to family business owners to gather quantitative data on their GST compliance and operational challenges.
- **Interviews**: Conducting semi-structured interviews with 25 family business owners and tax professionals to gather qualitative insights.
- **Secondary Data**: Reviewing existing literature, government reports, and financial statements of family businesses.

Data Analysis

The collected data will be analyzed using:

- **Statistical Analysis**: Employing statistical tools to analyze quantitative data and identify trends and patterns.

Business ID	Annual Revenue (INR)	Number of Employees	Profit Margin (%)	GST Compliance Costs (INR)
1	50,00,000	15	12	1,00,000
2	75,00,000	20	15	1,20,000
3	60,00,000	18	10	1,10,000
4	80,00,000	25	18	1,30,000
5	55,00,000	12	11	1,05,000
6	90,00,000	30	20	1,40,000
7	65,00,000	22	13	1,15,000
8	70,00,000	24	14	1,25,000
9	85,00,000	28	17	1,35,000
10	95,00,000	35	19	1,45,000
11	58,00,000	16	12	1,08,000
12	78,00,000	26	16	1,28,000
13	63,00,000	19	11	1,12,000
14	88,00,000	32	18	1,38,000
15	52,00,000	14	10	1,02,000
16	77,00,000	23	15	1,27,000
17	68,00,000	21	13	1,18,000
18	82,00,000	27	17	1,33,000
19	53,00,000	13	9	1,03,000
20	76,00,000	25	14	1,26,000
21	69,00,000	22	12	1,19,000
22	83,00,000	29	16	1,34,000
23	54,00,000	15	11	1,04,000
24	79,00,000	24	15	1,29,000
25	71,00,000	23	13	1,23,000

Source: primary data

The table provides 25 family businesses, showcasing key metrics such as annual revenue, number of employees, profit margin, and GST compliance costs.

1. **Annual Revenue**: The annual revenue for these family businesses ranges from INR 50,00,000 to INR 95,00,000, indicating a diverse range of business sizes.

2. **Number of Employees**: The number of employees varies from 12 to 35, reflecting different scales of operations and workforce sizes.

3. **Profit Margin**: Profit margins range from 9% to 20%, showing varying levels of profitability across the businesses.

4. **GST Compliance Costs**: Compliance costs related to GST range from INR 1,00,000 to INR 1,45,000, suggesting that GST compliance imposes a significant financial burden on these businesses.

Overall, the data highlights the impact of GST on family businesses, particularly in terms of compliance costs and their effect on profitability. Larger businesses with higher revenues and more employees tend to have higher GST compliance costs but also show better profit margins. Smaller businesses with fewer employees and lower revenues face challenges in managing compliance costs while maintaining profitability. Analyzing these trends can help identify areas where family businesses can improve efficiency and better adapt to the GST regime.

- **Thematic Analysis**: Analyzing qualitative data to identify common themes and insights related to GST implementation. -

    To analyze qualitative data for thematic analysis, we typically gather insights from interviews, surveys, or open-ended responses from family businesses. Here's a hypothetical dataset with qualitative responses from 25 family businesses regarding their experiences with GST implementation. Each response includes themes such as challenges, benefits, compliance issues, and overall impact.

Business ID	Qualitative Response
1	Struggled with initial compliance, but now see benefits in streamlined processes and reduced paperwork.
2	GST implementation increased administrative costs, but it also improved transparency in financial transactions.
3	Faced difficulties adapting to new software for GST filings; however, sales across states became easier.
4	Compliance requirements are burdensome, but tax credits on inputs have improved cash flow.
5	Experienced disruptions during the transition, but the unified tax system has simplified tax payments.
6	Initial resistance to change; now, GST has reduced tax evasion and improved competitiveness.
7	Found it challenging to train staff on GST compliance, but it has standardized taxation across regions.
8	High compliance costs, but better inventory management and streamlined supply chain processes.
9	GST refunds are delayed, affecting cash flow, but overall tax burden has reduced.
10	Faced issues with multiple GST rates, but overall operational efficiency has improved.
11	GST compliance software was expensive, but it has provided better financial records and accountability.
12	Smaller scale business faced challenges in adapting; however, interstate trade has become easier.
13	Increased workload due to frequent GST filings, but the elimination of cascading taxes is beneficial.
14	Confusion around GST rates and rules, yet the system has brought more businesses into the formal economy.
15	Incurred additional costs for GST compliance, but sales tracking and reporting have improved.
16	Found GST portal difficult to navigate initially, but automated processes have saved time in the long run.
17	Difficulty in claiming GST refunds, but overall better compliance has helped in business credibility.
18	Compliance with GST laws is time-consuming, but it has reduced tax disputes and litigation.
19	High cost of compliance for small family business, yet it has leveled the playing field with larger businesses.
20	Faced challenges with GST audits, but transparency in transactions has increased.
21	Transition to GST affected sales initially, but has now streamlined accounting and billing processes.
22	Increased compliance burden, but it has improved tracking of input tax credits.
23	Lack of clarity on certain GST provisions, but overall tax regime has become more predictable.
24	Initial hiccups with compliance, but GST has led to better financial discipline.
25	Additional costs for software and training, but efficiency in tax filings and returns has improved.

Source: Primary data

This data can be used to identify common themes and insights related to the implementation of GST in family businesses. Common themes may include:

- **Initial Challenges**: Compliance issues, software adaptation, training staff.
- **Benefits**: Streamlined processes, reduced paperwork, improved financial transparency.
- **Compliance Costs**: High administrative costs, impact on smaller businesses, cost of software.
- **Operational Improvements**: Easier interstate trade, standardized taxation, better inventory management.

By analyzing these themes, we can gain a better understanding of how GST has impacted family businesses and identify areas for improvement in the tax system.

- **Comparative Analysis**: Comparing the experiences of family businesses in different sectors and regions to identify variations in GST impact.

To perform a comparative analysis, let's create a hypothetical dataset for 25 family businesses across different sectors and regions. We'll include sectors such as Manufacturing, Retail, Services, and Agriculture, and regions such as North, South, East, and West India. The dataset will capture key metrics related to GST impact, such as revenue change, compliance costs, and overall satisfaction with GST implementation.

Business ID	Sector	Region	Revenue Change (%)	Compliance Costs (INR)	Satisfaction with GST (1-5)
1	Manufacturing	North	5	1,10,000	4
2	Retail	South	-2	1,20,000	3
3	Services	East	8	1,05,000	5
4	Agriculture	West	3	90,000	3
5	Manufacturing	South	7	1,15,000	4
6	Retail	East	1	1,25,000	2
7	Services	North	10	1,10,000	5
8	Agriculture	South	0	95,000	3
9	Manufacturing	East	6	1,05,000	4
10	Retail	West	-3	1,20,000	2
11	Services	South	9	1,08,000	5
12	Agriculture	North	4	92,000	3
13	Manufacturing	West	5	1,10,000	4
14	Retail	North	-1	1,20,000	3
15	Services	South	7	1,05,000	4
16	Agriculture	East	2	90,000	3
17	Manufacturing	South	8	1,15,000	5
18	Retail	North	0	1,25,000	3
19	Services	West	11	1,10,000	5

20	Agriculture	East	3	95,000	3
21	Manufacturing	South	6	1,08,000	4
22	Retail	West	-2	1,20,000	2
23	Services	North	9	1,05,000	5
24	Agriculture	South	1	90,000	3
25	Manufacturing	North	7	1,15,000	4

Sources: Computed data

Interpretation

1. **Sectoral Variations**:
   - Manufacturing businesses across all regions generally report positive revenue changes, with moderate satisfaction levels (4 out of 5) and manageable compliance costs.
   - Retail businesses have mixed experiences, with some regions reporting negative revenue changes and lower satisfaction levels, indicating sector-specific challenges.
   - Services sectors consistently show positive revenue changes and high satisfaction levels (5 out of 5), suggesting that they have adapted well to GST.
   - Agriculture shows minimal revenue change and moderate satisfaction levels, reflecting the unique challenges faced by this sector.

2. **Regional Variations**:
   - North and South regions appear to have a generally positive impact from GST, with higher satisfaction levels and positive revenue changes, particularly in Manufacturing and Services.
   - East and West regions show mixed results, with Retail businesses facing more challenges compared to other sectors.

Overall Insights: The comparative analysis highlights that the impact of GST on family businesses varies significantly across different sectors and regions. Manufacturing and Services sectors have adapted well to GST, while Retail and Agriculture face more challenges. Regional differences also play a crucial role, with the North and South regions showing more positive outcomes compared to the East and West.

Examining specific family businesses that have successfully adapted to the gst regime to identify best practices and strategies.

Case Study 1: Tata Motors

Background: Tata Motors, a leading automotive manufacturer, faced substantial changes due to GST.

Challenges: The company had to navigate a complex tax structure involving excise duty, VAT, and CST, leading to tax inefficiencies and higher logistics costs.

Strategies: Tata Motors revamped its entire supply chain, updated IT systems, and retrained staff. They centralized warehouses and reduced the number of stock points, optimizing their supply chain.

Outcomes: The implementation of GST helped Tata Motors reduce operational costs, improve supply chain efficiency, and offer more competitive pricing.

Case Study 2: Hindustan Unilever Limited (HUL)

Background: HUL, a major player in the fast-moving consumer goods (FMCG) sector, encountered significant changes with GST.

Challenges: The company had to deal with multiple pre-GST taxes like excise duty, service tax, and various state-level taxes.

Strategies: HUL overhauled its tax compliance processes, restructured its distribution network, and invested in upgrading its IT infrastructure.

Outcomes: The transition to GST enabled HUL to streamline its supply chain, reduce tax-related inefficiencies, and enhance overall productivity.

Conclusion

The implementation of the Goods and Services Tax (GST) in India has significantly impacted family businesses, which are crucial to the nation's economy. This study explores the multifaceted effects of GST on these businesses, focusing on compliance, operational efficiency, financial performance, and strategic adaptation. Initially, the unified tax structure simplified the overall tax process, but the transition imposed substantial compliance burdens, requiring technological upgrades, staff training, and increased administrative costs. Over time, many family businesses successfully adapted by investing in automated compliance solutions and seeking professional advice, thereby reducing the long-term burden. The elimination of cascading taxes improved cash flow management, reduced logistics costs, and facilitated interstate trade, enhancing operational efficiency. While larger family businesses with more resources adapted quickly, smaller ones faced greater challenges. Strategic adaptation through proactive investment in technology, continuous staff training, and regular compliance audits proved beneficial. The study also highlighted sectoral and regional variations in

GST's impact, with manufacturing and services sectors faring better than retail and agriculture. Policy recommendations include targeted support for smaller businesses, streamlined GST filing processes, and robust training resources. This research enriches the understanding of tax reforms' impact on family businesses and provides actionable insights for policymakers and business owners to navigate GST complexities and leverage its benefits for sustainable growth.

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A Study on Outpatients' Service Satisfaction Level in Multispecialty Hospital, Madurai

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Abstract

This study aims to evaluate the satisfaction level of outpatient services provided by a multispecialty hospital in Madurai. Outpatient care is an essential part of healthcare delivery, and patient satisfaction plays a crucial role in determining the quality of services rendered. The study investigates various factors influencing outpatient satisfaction, including appointment scheduling, waiting time, doctor-patient communication, hospital environment, staff professionalism, and the overall cost of treatment. A cross-sectional survey was conducted using a structured questionnaire to collect data from 300 outpatient respondents. The results were analyzed to identify key areas that contribute to patient satisfaction or dissatisfaction. The findings suggest that while most patients were satisfied with the professionalism of medical staff and the hospital's cleanliness, challenges related to waiting time and appointment scheduling were highlighted as areas needing improvement. The study concludes that improving waiting times, enhancing communication, and optimizing appointment processes could significantly boost outpatient satisfaction. The insights gathered provide valuable recommendations for hospital management to enhance service quality, ensuring a more positive and efficient experience for future patients.

Keywords: Outpatient services, Patient satisfaction, Doctor-patient communication, Cost of treatment

Introduction

Patient satisfaction is a critical aspect of healthcare quality and plays a significant role in the success of any healthcare institution. In particular, outpatient services form an essential part of healthcare delivery, as they provide medical care to patients without the need for hospitalization. Multispecialty hospitals, which offer a wide array of specialized services in one location, cater to a diverse group of patients, making them an important part of the healthcare infrastructure. In Madurai, a prominent city in Tamil Nadu, the demand for multispecialty hospitals has been growing due to an

increasing population and the need for specialized medical care. Various factors influence outpatient satisfaction, including the ease of appointment scheduling, waiting times, communication with healthcare professionals, quality of medical care, and the overall hospital environment. A smooth and efficient outpatient experience can significantly enhance patient satisfaction, while delays or poor service may result in dissatisfaction and affect the hospital's reputation.

This study aims to assess the satisfaction levels of outpatients in a multispecialty hospital in Madurai. By focusing on key factors such as appointment booking, waiting times, interaction with medical staff, hospital facilities, and treatment costs, the research will provide valuable insights into areas that need improvement. The goal is to identify both strengths and areas for development, offering recommendations for hospital management to enhance the quality of outpatient services and ultimately improve patient care. The findings from this study will provide essential feedback for hospital administrators and healthcare providers, helping them to make informed decisions that can lead to better service delivery and greater patient satisfaction.

Need of the Study

➢ Patient satisfaction is one of the most important parameters of quality.

➢ The measurement of patient satisfaction is an important tool for research of various services offered by the hospital administration, and planning.

➢ Client satisfaction is a crucial index for determining the quality services and the easy in which they are provided by medical staff.

Objectives of the Study

➢ To know satisfaction level of the patients in availability of facilities in Multispecialty Hospital.

➢ To identify the satisfaction level in services provided by the doctors, nurses and pharmacy in Multispecialty Hospital.

➢ To access the waiting time, registration and maintenance of the patient details in Multispecialty Hospital.

Statement of the Problem

Patient satisfaction in outpatient services is crucial for the success of multispecialty hospitals, particularly in Madurai, where healthcare demand is rising. Despite the availability of advanced care, outpatients often face issues such as long waiting times, scheduling difficulties, and poor communication with healthcare providers. These factors can lead to dissatisfaction and affect the

overall patient experience. However, limited research exists on outpatient satisfaction levels in multispecialty hospitals in Madurai. This study aims to evaluate the factors influencing outpatient satisfaction, identify areas for improvement, and provide recommendations to enhance service quality and patient care.

Scope of the Study

➢ A patient 'expression of satisfaction or dissatisfaction is the judgment on the quality of hospital care in all of its aspects.

➢ Most of patient would like recommend of the hospital so other also would like to come for future health care.

Research Methodology

Sampling Method: Convenience sampling method

Sample Size: 100 patients

Limitation of the Study

➢ The sample size calculated for this study could not be achieved any may affect the results of the study.

➢ Respondents are not co-operated, because of illness.

➢ Time is limited for collecting the data.

Data Analysis and Interpretation

CHI SQUARE Analysis

Hypothesis

H0: There is no significance difference between the age and hospital services

H1: There is a significance difference between the age and hospital services

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.500[a]	16	.962
Likelihood Ratio	9.496	16	.892
Linear-by-Linear Association	1.487	1	.223
N of Valid Cases	100		

a. 18 cells (72.0%) have expected count less than 5. The minimum expected count is .84.

Inference

From above table p value.962, since the p value is more than .005 in case of age, the null

hypothesis is accepted. From this analysis it is concluded that there is significance difference between age and hospital's facilities.

One Way ANOVA

Income and Satisfaction Level About Consultation Charges of the Respondents

Hypothesis

H0: There is no significant relationship between the income and satisfaction level about consultation charges of the doctors.

H1: There is a significant relationship between the income and hospital satisfaction level about consultation charges of the doctors.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.155	4	.052	.027	.994
Within Groups	182.805	96	1.904		
Total	182.960	100			

Interpretation

From the ANOVA table we find the relationship between income and satisfaction level about consultation charges of the doctors. Process in appropriate (.994) is greater than the level of significant (.005%), the above null hypothesis is accepted and alternative hypothesis is rejected. Hence, there is association between income and satisfaction level about consultation charges of the doctors.

Friedman Test

The Friedman test is done for Ranking given by the respondents of satisfaction level

H0: There is no difference between mean ranks

H1: There is difference between mean ranks

Ranks

Particulars	Mean Rank
Staffs showed respect toward you	3.51
To use drugs	3.60
Adequate amount of medicines	3.66
Punctual and reachable	3.27
Price of medicines	3.55
Billing time of medicines	3.42

Source: Primary data

From above table, it is clear that the mean rank for build the punctual and reachable is very low (3.27) and the mean rank of adequate amount of medicines is very high (3.66). Hence, punctual and reachable is the first rank (3.27), followed by billing time of medicines (3.42) Second rank, staffs showed respect toward you(3.51) Third rank, price of medicines (3.55) Fourth rank, to use drugs(3.60) Fifth rank, adequate amount of medicines (3.66) Sixth rank.

Test Statistics^a

N	100
Chi-Square	3.235
df	5
Asymp. Sig.	.664

a. Friedman Test

Interpretation

As the computed p value (.664) is greater than assumed significance value of (0.05), the above null hypothesis is accepted. Hence, there is significant difference in the rank provides by respondents to the satisfaction range level.

Findings

CHI SQUARE Analysis: From chi-square table p value.962, since the p value is more than .005 in case of age, the null hypothesis is accepted. From this analysis it is concluded that there is significance difference between age and hospital's facilities.

ONE WAY ANOVA: From the ANOVA table we find the relationship between income and satisfaction level about consultation charges of the doctors. Process in appropriate (.994) is greater than the level of significant (.005%), the above null hypothesis is accepted and alternative hypothesis is rejected. Hence, there is association between income and satisfaction level about consultation charges of the doctors.

FRIEDMAN TEST: As the computed p value (.664) is greater than assumed significance value of (0.05), the above null hypothesis is accepted. Hence, there is significant difference in the rank provides by respondents to the satisfaction range level.

Suggestion

- Community participation actives of the clinical staffs should be increasingly implemented to get to know more and more patients' expectation and opinions about the hospital services.

- Methods of getting daily feedback from the patients such as creating feedback box, patient information center, and hospital official website should be enhanced.

- Patients often have high expectation about the services they would receive from clinical staff. Therefore, a proper training of code of conduct and courtesy should be given to both clinical and office staffs. Incentives and punishment should be able carried out based on regular performance reviews.

Conclusion

Patient receiving each hospital service are responsible for conveying the good image of the hospital; therefore, securing high satisfaction of patients attending the hospital quality important for a hospital management team. Many studies about outpatient services have revealed some problem like overcrowding, long waiting time, high hospital fee, and poor behavior of staff, etc. In current study, it was found that the majority of the respondents were highly satisfied with logistic arrangement, nursing care, doctor's communication skills, number of staff etc. Hence, it can be concluded that the outpatient department services from a vital element to draw a good image of the hospital services and the patients' opinion are essential in quality Improvement.

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Cryptography's Role in Decentralized Finance

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Abstract

Cryptography serves as the cornerstone of decentralized finance (DeFi), enabling secure, transparent, and trust fewer financial interactions. By leveraging advanced cryptographic techniques, DeFi protocols ensure data integrity, protect user privacy, and maintain transaction security without reliance on centralized intermediaries. Public-key cryptography enables peer-to-peer interactions, while hashing functions ensure the immutability of blockchain records. Zero-knowledge proofs and homomorphic encryption enhance privacy by allowing users to verify information without revealing sensitive data. This chapter explores the fundamental cryptographic methods underpinning DeFi systems, their applications in securing smart contracts, and the ongoing innovations shaping the future of decentralized finance. Through these advancements, cryptography empowers a global financial ecosystem that is resilient, inclusive and secure.

Keywords: DeFi, Public Key Infrastructure, Zero Knowledge Proofs, RingCTs, MPC.

Introduction

Decentralized Finance (DeFi) represents a paradigm shift in the world of finance, enabling a trustless, transparent, and borderless ecosystem that eliminates the need for traditional intermediaries such as banks and financial institutions. At the core of this transformative technology lies cryptography, a field of mathematics and computer science that secures communication and transactions in the digital age.

Cryptography is not merely a tool in DeFi; it is the foundation upon which its infrastructure is built. From securing blockchain networks and protecting user identities to verifying transactions and enabling privacy-preserving mechanisms, cryptography plays a vital role in ensuring the integrity and security of decentralized systems. Techniques like public-key cryptography enable trustless peer-to-peer interactions, while cryptographic hashing guarantees the immutability of blockchain records.

As DeFi expands to include a wide range of financial applications—such as lending, borrowing, trading, and asset management—the role of cryptography becomes increasingly significant. Emerging techniques, including zero-knowledge proofs and multi-party computation, promise to enhance user privacy and scalability without compromising security. This chapter delves into the critical cryptographic principles that underpin DeFi, examining how they enable secure, decentralized financial operations while addressing challenges such as scalability, privacy, and trust. By understanding the role of cryptography in DeFi, we can better appreciate its potential to reshape global finance and unlock new opportunities for innovation in a secure and equitable digital economy.

Basics of Cryptography in DeFi

- ❖ **Public-Key Cryptography**:
  - Enabling trustless peer-to-peer transactions.
  - Digital signatures for authentication and transaction verification.
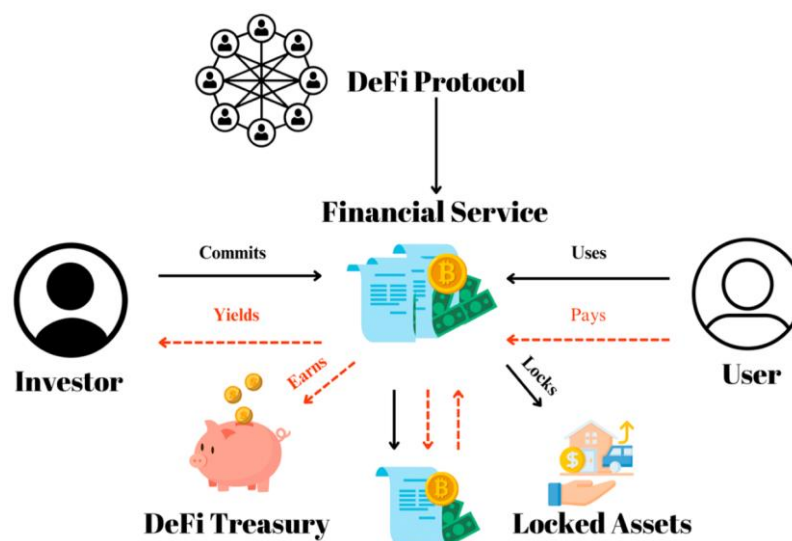- ❖ **Cryptographic Hashing**:
  - Ensuring data integrity and immutability in blockchain records.
  - Examples of commonly used hash functions (e.g., SHA-256).
- ❖ **Consensus Mechanisms**:
 - Role of cryptographic algorithms in securing blockchains.

Figure 1: Basics of DeFi

Applications of Cryptography in DeFi

o **Secure Transactions:** Cryptographic digital signatures (e.g., ECDSA or EdDSA) authenticate transactions on the blockchain, ensuring they are authorized by the rightful owner.

o **Smart Contract Security:** Zero-Knowledge Proofs (ZKPs): ZKPs, like zk-SNARKs and zk-STARKs, allow DeFi applications to verify transactions or computations without revealing sensitive data. Examples include privacy-preserving transactions and layer-2 scaling solutions. Smart contracts employ cryptographic primitives to ensure correctness and reduce vulnerabilities in decentralized protocols.

o **Decentralized Identity and Authentication:** Public-Key Infrastructure (PKI): Public and private key pairs are used to verify identities without relying on centralized authorities. Cryptographic methods underpin identity verification systems, enabling users to own and control their digital identities.

o **Privacy-Preserving Mechanisms:** Protocols like Mimble and Monero use cryptographic techniques such as RingCTs (Ring Confidential Transactions) to hide transaction amounts. Technologies like zk-SNARKs allow for private DeFi transactions by concealing sender, receiver, and amount details.

o **Decentralized Exchange (DEX) Operations:** Atomic Swaps: Hash Time-Locked Contracts (HTLCs) allow secure, trustless exchanges between different cryptocurrencies across block chains. Order Book Encryption: Cryptographic methods ensure the integrity of order book data in decentralized exchanges.

o **Key Management and Security:** Multi-Signature Wallets: Require multiple parties to sign a transaction, enhancing security for DeFi wallets and treasury management. Threshold Cryptography: Enables splitting cryptographic keys among multiple parties, ensuring no single entity has complete control.

o **Decentralized Governance:** Cryptographic Voting: Secure voting mechanisms, such as homomorphic encryption and ZKPs, ensure fair and transparent governance in DeFi protocols. Token omics: Cryptographic signatures ensure secure issuance and management of governance tokens.

Figure 2: Decentralized Finance Market size 2023 to 2032
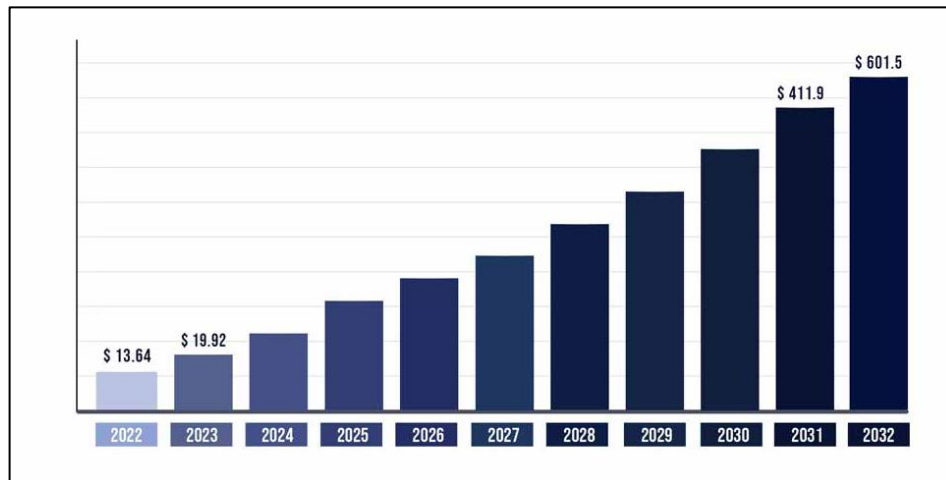
Advanced Cryptographic Innovations in DeFi

The rapid growth of decentralized finance (DeFi) has driven the need for advanced cryptographic techniques to address challenges such as scalability, privacy, and security. One such innovation is zero-knowledge proofs (ZKPs), which allow one party to prove the validity of a statement without revealing any underlying information. ZKPs are instrumental in enabling private transactions, ensuring confidentiality while maintaining transparency on the blockchain. Another breakthrough is multi-party computation (MPC), which facilitates collaborative decision-making and secure computations without exposing individual inputs. MPC has applications in DeFi governance, secure trading, and safeguarding private keys in decentralized wallets. As the threat of quantum computing looms, post-quantum cryptography is emerging as a crucial area of focus to develop algorithms resistant to quantum attacks, ensuring the long-term security of DeFi systems. These innovations, alongside advances in homomorphic encryption and cryptographic rollups for scalability, are shaping the next generation of DeFi protocols, enabling a more secure, private, and efficient decentralized financial ecosystem.

Challenges in Cryptography and DeFi

- o Scalability issues in cryptographic algorithms on large blockchain networks.
- o Balancing privacy and regulatory compliance.
- o Risks of cryptographic vulnerabilities and potential exploitation.
- o High computational costs of advanced techniques like zero-knowledge proofs.

The Future of Cryptography in DeFis

The future of cryptography in DeFi is poised to revolutionize security, scalability, and privacy within decentralized financial systems. As DeFi adoption grows, advancements in cryptographic techniques, such as zero-knowledge proofs (ZKPs), homomorphic encryption, and post-quantum cryptography, will play a critical role in addressing challenges like scalability, interoperability, and regulatory compliance. ZKPs, for instance, will enable privacy-preserving transactions and efficient verification, while post-quantum cryptography will future-proof DeFi systems against the potential threat of quantum computing.

Figure 3: The Future of Cryptography in DeFis

Enhanced cryptographic methods will also facilitate more sophisticated decentralized identity systems, allowing users to interact with DeFi protocols while maintaining complete control over their data. Furthermore, cross-chain interoperability solutions powered by cryptography will strengthen the integration of disparate blockchain networks, fostering a more unified DeFi ecosystem. As these innovations mature, cryptography will remain the backbone of trustless, transparent, and highly secure financial systems, unlocking new possibilities for inclusive and decentralized financial services.

Conclusion

Cryptography serves as the cornerstone of decentralized finance (DeFi), enabling secure, transparent, and trustless financial systems. It ensures the integrity and confidentiality of transactions through techniques like digital signatures and hashing while enhancing privacy with methods such as zero-knowledge proofs and confidential transactions. Cryptography also facilitates decentralized identity management, secure key storage, and robust governance mechanisms, empowering users with

greater control over their financial activities. As DeFi evolves, advancements in cryptographic technologies, including post-quantum cryptography and cross-chain interoperability protocols, will address emerging challenges like scalability, interoperability, and regulatory compliance. Ultimately, cryptography underpins the reliability and resilience of DeFi, enabling it to scale securely and sustainably while preserving its core values of decentralization and transparency.

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A Study on Customer Satisfaction towards Google Pay Transactions in Virudhunagar Town

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Abstract

This study explores customer satisfaction levels with Google Pay, a well-known mobile wallet program, and explains the several factors that affect its use in the context of digital payments. The study examines the fundamentals of mobile wallet use and evaluates how Google Pay fits into these dynamics. Additionally, it looks for the incentives and driving forces behind consumers' preference for Google Pay over other digital payment methods. This study also aims to determine the degree of customer awareness of the various functionalities provided by the Google Pay application through in-depth analyses. It also seeks to determine and examine the obstacles and problems consumers have when using Google Pay for their transaction

Keywords: Google pay, digital payment, consumer awareness

Introduction

Google Pay is a digital wallet and payment system that allows customers to make purchases in-store, on compatible websites, mobile apps, and Google services using Android smartphones. Users can link their credit or debit cards to their Google Pay account for both in-store and online transactions. On Android devices, Google Pay uses near field communication (NFC) to interact with payment terminals. When signed in to their Google account in the Chrome browser, users can use Google Pay on websites that support the service.

The Digital India strategy aims to transform India into a digitally empowered society and knowledge economy. On January 8, 2018, Google announced that Google Wallet would be integrated into Android Pay, which became Google Pay, also known as G-pay. Google Pay is a part of the digital India initiative and its popularity is increasing in society. People, both literate and illiterate, are using the Google Pay app on their smartphones for various transactions such as purchasing products, availing services, mobile recharges, online shopping, paying bills, and more. Google Pay is

a simple and secure way to transfer money instantly, providing financial flexibility to both merchants and customers. It promotes a cashless economy.

Statement of the Problem

The purpose of this study is to determine Google Pay's current level of customer satisfaction. Finding out who the customers are, what they want, and how they respond to Google Pay is made easier by the customer satisfaction research. By completing a customer satisfaction survey, the customers were thoroughly examined. This study will assist in learning more about the degree of satisfaction among Google Pay users, the reasons that influence their preference for this specific app, the issues they encounter when using it, and other related topics.

Need of the Study

Nowadays, online transactions are more common than cash transactions. Using cards stored in our Google accounts, Google Pay is a quick, simple, and safe method of making payments on websites, in applications, and in physical stores. Use our current bank accounts to send and receive money instantaneously. It reduces the danger of working with liquid more.

Objectives of the Study

- To analyse the satisfaction level of customers in the usage of Google Pay.
- To determine the various facility provided by Google Pay.
- To study the effectiveness of the promotional activities taken by Google pay.

Methodology

Data from primary and secondary sources served as the foundation for this investigation. It is a systematic questionnaire that is used to gather primary data. Secondary data from previous retailing research studies was gathered from various authors, books, journals, and the internet. The entire sample of respondents was set at random. There were fifty samples.

Sampling Method

The sampling used for the study is convenient sampling. This sampling is selected by the researcher for the purpose of convenience of access.

Data Analysis and Interpretation

Age Wise Classification

Table1

Table showing Age wise classification

S. No	Particulars	Respondents	% of Respondents
1	20 to 30 years	37	74
2	31 to 40 years	6	12
3	41 to 50 years	5	10
4	Above 50 years	2	4
	Total	50	100

Interpretation

The above table shown that 74% respondents are the age group of 20 to 30 years, 12% respondents are comes under the age group of 31 to 40 years, 10% respondents are comes under the age group of 41 to 50 years, 4% respondents are comes under the age group of above 50 years.

Inference

Majority of the respondents are the age group of **20 to 30 years**.

Gender Wise Classification

Table 2

Table showing Gender wise classification

S. No	Particulars	Respondents	% of Respondents
1	Male	31	62
2	Female	19	38
	Total	50	100

Interpretation

The above table shows that 62% of the respondents are male and 38% of the respondents are female.

Inference

Majority of the respondents are **Male.**

Monthly Income Wise Classification

Table 3

Table showing the Monthly Income Wise Classification

S. No	Particulars	Respondents	% of Respondents
1	Less than 10,000	16	32
2	10,001 to 20,000	26	52
3	20,001 to 30,000	6	12
4	More than 30,000	2	4
	Total	50	100

Interpretation

The above table shown that 32% respondents monthly income is less than Rs.10,000. 52% respondents monthly income is Rs.10,001 to Rs.20,000. 12% respondents monthly income is Rs.20,001 to Rs.30,000. 4% respondents monthly income is more than Rs.30,000.

Inference

Majority of the respondents monthly income is**Rs.10,001 to 20,000.**

Period of using Google pay

Table 4

Table Showing Period of using Google Pay

S. No	Particulars	Respondents	% of Respondents
1	Below 6 Months	13	26
2	6 Months to 1 Year	21	42
3	1 Year to 2 Year	12	24
4	More than 2 Year	4	8
	Total	50	100

Interpretation

The above table shows that 26% of the respondents are using google pay below 6 months and 42% of the respondents are using 6 months to 1 year and 24% of the respondents are using 1 year to 2 year and 8% of the respondents are using more than 2 year.

Inference

Most of the respondents are using Google Pay from **6 months to 1 year.**

Kinds of Problem faced by the respondents

Table 5

Table Showing Kinds of Problem faced by the respondents

S. No	Particulars	Respondents	% of Respondents
1	UPI Fail	10	20
2	Transaction takes longer time	5	10
3	Receiver's UPI ID unavailable	4	8
4	Problems with rewards	3	6
5	Problems on unsolved Complaints for 30 days	2	4
6	Not Facing Any Problems	26	52
	Total	**50**	**100**

Interpretation

The above table shown that 20% of the respondents are facing UPI failed problem, 10% of the respondents faced problem of transaction takes longer time, 8% of the respondents faced problems of unavailability of Receiver's UPI Id, 6% of the respondents faced problems with earns rewards, 4% of the respondents are faced problems on unsolved Complaints for 30 days and remaining 52% of the respondents not facing problems while using gpay services.

Inference

Most of the respondents are facing **UPI failed problem.**

Users satisfaction on Google Pay

Table 6

Table Showing Users satisfaction on Google Pay

S. No	Particulars	Respondents	% of Respondents
1	Satisfied	28	56
2	Not satisfied	22	44
	Total	50	100

Interpretation

The above table shown 56% of the respondents are satisfied by using google payand 44% of the respondents arenot satisfied.

Inference

Most of the respondents are saying **Google Pay is** satisfied.

The level of Satisfaction Regarding Google Pay

Table 7

Table Showing the level of Satisfaction Regarding Google Pay

S.NO	PARTICULARS	HIGHLY SATISFIED		SATISFIED		NEUTRAL		DIS SATISFIED		HIGHLY DIS SATIDFIED		RANK
		RESPONDENTS	% OF RESPONDENTS	RESPONDENTS	% OF RESPONDENTS	RESPONDENTS	% OF RESPONDENTS	RESPONDENTS	% OF RESPONDENTS	RESPONDENTS	% OF RESPONDENTS	
1	Mini Statement	8	16	36	72	6	12	0	0	0	0	5
2	Fund Transfer	13	26	30	60	4	8	2	4	1	2	4
3	Bill Payment	21	42	25	50	4	8	0	0	0	0	2
4	24*7	31	62	14	28	4	8	1	2	0	0	1
5	Minimum Amount Transfer	15	30	29	58	4	8	2	4	0	0	3
	TOTAL	88	176	134	268	22	44	5	10	1	2	

Interpretation

Form the above the table, **Mini statement,** 16% respondents are Highly Satisfied, 72% respondents are Satisfied, 12% respondents are Neutral, No respondents are Dissatisfied, No respondents are Highly Dissatisfied regarding Google Pay.

Fund Transfer, 26% respondents are Highly Satisfied, 60% respondents are Satisfied, 8% respondents are Neutral, 4% respondents are Dissatisfied, 2% respondents are Highly Dissatisfied regarding Google Pay.

Bill Payment, 42% respondents are Highly Satisfied, 50% respondents are Satisfied, 8% respondents are Neutral, No respondents are Dissatisfied, No respondents are Highly Dissatisfied regarding Google Pay.

24*7, 62% respondents are Highly Satisfied, 28% respondents are Satisfied, 8% respondents are Neutral, 2% respondents are Dissatisfied, No respondents are Highly Dissatisfied regarding Google Pay.

Minimum Amount Transfer, 30% respondents are Highly Satisfied, 58% respondents are Satisfied, 8% respondents are Neutral, 4% respondents are Dissatisfied, No respondents are Highly Dissatisfied regarding Google Pay.

Inference

Majority of the Respondents are giving **Rank 1 for 24*7 service.**
- Rank-1 for**24*7 Service**
- Rank-2 for **Bill Payment**
- Rank-3 for **Minimum Amount Transfer**
- Rank-4 for **Fund Transfer**
- Rank-5 for **Mini Statement**

Conclusion

The goal of this study was to determine how satisfied Virudhunagar town's Google Pay users were with the service's many features and functionalities. Based on the results and recommendations, it can be said that 56% of respondents are satisfied with Google Pay users in Virudhunagar town, while 44% are not thanks to a number of issues, including unsuccessful UPI transactions, slow transaction speeds, a lack of reward points, the inability to access their receiver's UPI ID, and issues that have not been resolved for 30 days.

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