APPLIED MANAGEMENT PERSPECTIVES

Contents

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FROM THE EDITOR-IN-CHIEF'S DESK

Dear Readers,
It is with great enthusiasm that I welcome you to this issue of Applied Management Perspectives, where we continue our commitment to fostering meaningful conversations within the Management community.

As the boundaries of our discipline expand, the necessity for rigorous, innovative, and impactful research becomes ever more crucial. In this issue, we are proud to present a collection of articles that exemplify these qualities, offering fresh perspectives on workforce diversity and its challenges, customer retention, innovative mechanization in postal services, and the interplay between GDP and financial services. These contributions reflect the diversity of thought and breadth of inquiry that define our field today.

This issue features original research articles each selected through a meticulous peer-review process. I extend my gratitude to the authors for their scholarly rigor, to the reviewers for their constructive feedback, and to the editorial board for their dedication in upholding the standards of excellence that our readers expect.

As we look to the future, Applied Management Perspectives remains committed to embracing the evolving challenges and opportunities in Management. We encourage submissions that push traditional boundaries, foster interdisciplinary collaboration, and address pressing global issues.

I also invite you, our readers, to engage with the content of this issue by sharing your thoughts, questions, and insights. Your feedback is invaluable in shaping the trajectory of our journal.
On behalf of the entire editorial team, thank you for your continued support of Applied Management Perspectives. Together, let us advance the frontiers of knowledge and make a lasting impact on our field and beyond.

Sincerely,
Prof. Prema Sankaran
Chief Editor

Editorial Note

Dear Esteemed Readers

Welcome to the sixth issue of Applied Management Perspectives, since our inaugural publication in 2022, this journal has aimed to provide a platform for scholars and practitioners to share their insights, research, and innovative perspectives on the dynamic field of management. With each issue, we strive to explore diverse and impactful topics that shape modern management practices and foster academic and professional dialogue.

This edition is a testament to our commitment to addressing contemporary challenges and opportunities in management and related fields. The articles featured in this issue span a wide array of themes, each contributing unique perspectives and findings to the ever-evolving body of knowledge. Here is a glimpse of the insightful contributions in this volume

Each article in this issue contributes to a deeper understanding of critical management topics, reflecting the journal's mission to bridge the gap between theory and practice. We extend our heartfelt gratitude to the authors for their scholarly contributions, the reviewers for their diligent evaluations, and our readers for their continued support and engagement.

As we move forward, we invite you to share your feedback, suggest topics of interest, and contribute to future issues. Together, let us continue to explore, innovate, and advance the field of management.

Happy reading!

Warm regards,

Dr Virupaksha Goud G
Editor - Applied Management Perspectives

THE EFFECT OF FARMERS NETWORK AND FARM SIZE ON COMMUNITIES OF PRACTICES OF FARMERS

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ABSTRACT:

The objective of the paper is to find the relationship between farmers network and farm size on communities of practice. The demographic characteristics plays a significant role in designing a policy for agriculture in India, it is very challenging because of the diversity in agricultural practices and among farmers. This study examines the networking pattern of farmers and their association with specific groups and communities to enhance knowledge about agricultural related matters. To address the objective, data was collected from agricultural farmers from five states of southern India. A structured questionnaire was developed and used to collect data from the respondents. Specific data analytical tools were used to analyze the data, the results show a positive relationship between the study variables.

Keywords: Agricultural Farmers, Agricultural Innovations, Communities of Practice, Farmers Networks, Farm Size

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INTRODUCTION:

Approximately 70% of Indian population are dependent on agriculture as their primary livelihood, making a significant contribution of 19% to the country's GDP. Despite the substantial number of families dependent on agriculture, income and financial development among them remain limited. This can be attributed to the highly intricate and unorganized nature of the Indian agricultural sector, which can be considered the largest unorganized sector in the country. (handbook of statistics on Indian states)

The size of land holdings significantly influences a farmer's income, with the average land holding size in India being approximately 1.15 hectares. This poses a challenge for small-scale or micro farmers, hindering their ability to engage in mass production and diversify into multiple crops. As a consequence, the overall growth of farmers is adversely affected. Agriculture-dependent households experience an average monthly income as low as 10,218. The escalating capital requirements for farmers further compounds their financial challenges. Over the past decade (2013-2023), the cost of pesticides has surged by 44%, adding to the economic burden on farmers.

Challenges of Agriculture Sector

Privatizing agriculture sector, which includes farming practices, due to several reasons. However, there has been notable progress and improvement in certain areas like seed and pesticide production. While the overall farming landscape remains largely traditional and small-scale, the seed and pesticide industries have seen advancements through the involvement of private companies like Monsanto (now part of Bayer) and Mahyco (Maharashtra Hybrid Seeds Company) have played significant roles in introducing genetically modified (GM) seeds and high-yielding varieties. These companies have developed seeds that are resistant to pests and diseases, contributing to increased crop yields and better farm productivity in the pesticide sector, companies like Syngenta

and UPL have been instrumental in developing and manufacturing improved pesticides. These companies have introduced innovative solutions that are more effective in pest control, reducing crop losses and promoting sustainable farming practices. Challenges related to land fragmentation, traditional farming practices, and concerns about the impact of privatization on small farmers have contributed to the cautious approach towards complete privatization of the entire agricultural sector in India. Despite this, advancements in specific areas demonstrate the potential benefits of collaboration between the private sector and agriculture for sustainable development.

The lack of effective consultation with farmers and stakeholders during the policy formulation process has also been a contributing factor. Farmers' involvement in policy discussions can ensure that their concerns and requirements are adequately addressed. For instance, during the recent protests, farmers expressed dissatisfaction with the perceived lack of consultation and engagement in the decision-making process.

Farmers Networks:

Farmers networks have gained increasing attention as important platforms for knowledge sharing, collaboration, and innovation among innovative farmers. This literature review aims to explore the concept of farmers networks and their role in supporting knowledge transfer, fostering agricultural innovation, and driving sustainable farming practices. By examining relevant studies, this review aims to provide insights into the characteristics, benefits, challenges, and outcomes associated with farmers networks among innovative farmers.

Farmers networks are informal or formal associations of innovative farmers who voluntarily come together to share knowledge, experiences, and innovative practices. These networks are characterized by shared interests, common goals, and a collective commitment to improving agricultural practices and outcomes. Farmers networks provide a platform

Dr. Vijaya Vardhan Manchala   Prof. D. Sreeramulu

for knowledge sharing and collaboration among innovative farmers. Through regular meetings, workshops, field visits, and online platforms, farmers can exchange information, practical insights, and successful strategies. This knowledge exchange leads to enhanced problem-solving abilities, improved decision-making, and the adoption of innovative practices.

Farmers networks play a vital role in driving agricultural innovation by facilitating the diffusion and adoption of new technologies, practices, and sustainable farming methods. Through network interactions, farmers can learn from each other's successes and failures, experiment with new approaches, and collectively address challenges, resulting in increased productivity, profitability, and sustainability. Participation in farmers networks can lead to increased empowerment and social capital among innovative farmers. Networks provide a sense of belonging, trust, and mutual support, allowing farmers to access resources, expertise, and opportunities that may otherwise be limited. Enhanced social capital strengthens the ability of farmers to adapt to change, influence policy, and collectively advocate for their interests.

The establishment and sustainability of farmers networks face challenges such as limited resources, geographic dispersion, and varying levels of participation. Successful farmers networks often demonstrate effective leadership, facilitation, and coordination. Additionally, supportive policies, funding mechanisms, and institutional support contribute to the longevity and effectiveness of farmers networks. Farmers networks among innovative farmers offer a valuable avenue for knowledge sharing, collaboration, and agricultural innovation. By fostering the exchange of knowledge and experiences, farmers networks contribute to improved farming practices, increased productivity, and the adoption of sustainable agricultural approaches. Recognizing the significance of farmers networks and providing support for their establishment and growth can enhance the capacity of innovative

farmers to address challenges and contribute to the overall development of the agricultural sector.

REVIEW OF LITERATURE:

Communities of Practice (CoPs):

Communities of Practice (CoP) have gained significant attention in recent years as a promising approach to fostering knowledge sharing and innovation within various domains. In the agricultural sector, CoPs have emerged as valuable platforms for facilitating collaboration, learning, and the exchange of innovative practices among farmers. The role of CoPs in supporting innovative farmers and their impact on knowledge transfer, agricultural practices, and sustainable development are significant and diverse. Aleksandra Dolinska, Patrick d'Aquino (2015) state that Informal and spontaneous character of communities of practice makes it difficult to both work with existing CoPs (Layadi et al., 2011).

Klerkx and Proctor (2013), Communities of Practice are characterized as social structures where individuals with shared interests, goals, and expertise come together to actively engage in knowledge sharing, problem-solving, and learning. They are driven by mutual interactions and develop a collective identity through their shared practices
Spielman et al, (2009), CoPs provide a conducive environment for farmers to exchange tacit and explicit knowledge, experiences, and practical insights. Through informal interactions, discussions, and collaborative activities, innovative farmers can share and co-create knowledge, leading to the generation of new ideas and the adoption of novel practices

Hall and Clark, (2009), CoPs have demonstrated their potential to foster innovation among farmers by promoting experimentation, learning from failures, and disseminating successful practices. They serve as platforms for farmers to explore new techniques, technologies, and sustainable farming methods, contributing to improved agricultural productivity, environmental stewardship, and resilience.

Dr. Vijaya Vardhan Manchala   **Prof. D. Sreeramulu**

Hounkonou et al, (2012), CoPs rely on social interactions and collective learning processes to facilitate knowledge exchange. Trust, mutual respect, and a sense of belonging are crucial for the success of CoPs. Active participation, engagement in discussions, and collaborative problem-solving enable farmers to acquire new knowledge, refine their skills, and develop innovative practices.

John (2005), Implementing and sustaining CoPs for innovative farmers faces certain challenges, such as geographic dispersion, limited resources, and time constraints. However, the availability of digital platforms, funding support, effective leadership, and facilitation can enhance the functioning and impact of CoPs in agricultural contexts.

Communities of Practice play a vital role in fostering knowledge sharing, innovation, and the adoption of sustainable practices among farmers. By creating spaces for collaboration, learning, and the exchange of experiences, CoPs enable innovative farmers to enhance their agricultural practices, address challenges, and contribute to the overall development of the farming community. Recognizing the importance of CoPs and providing support for their establishment and maintenance can lead to improved outcomes in agricultural innovation and sustainable farming. Generation of new knowledge through these groups is possible only when people are constantly interacting with one another to share experience and understanding to produce new understandings of new knowledge.

Barston and Tusting (2005), mentioned that participation in the groups is an essential aspect of practice-based learning. Brown and Duguid (2001) pointed that these CoPs acts a repository of explicit knowledge (formal in nature) as well as tacit knowledge (intangible and informal in nature) and holds the key to any change process. These groups encourage members to generate a common history or culture by sharing their practices, cases, methods, and repeated interactions (Wenger et al., 2002). Aleksandra Dolinska et al (2016), examines the farmers role in the innovation process through communities of practice (CoPs). In the multiple stakeholders' settings CoPs create a scope for the farmers through their interactions and learning. Sewell et al. (2014) described it as "sharing power with farmers" which means gaining negotiating capacity. Leeuwis and Aarts (2011) identified that constructing narratives have a direct effect on innovation process within the CoPs and it gives a sense and space for change.

OBJECTIVE
The objective of the research paper is to find the relationship between farmers network and communities of practice among farmers.

H1: There is a relationship between farmers networks and communities of farmers.

RESEARCH METHODOLOGY:
SAMPLING
Sample is a small representative segment of the target universe of the research drawn systematically to collect the needed data for any scientific study. The sampling frame was South India and the data about population was retrieved from the Ministry of Agriculture. There were 5 states of south India during 2021. The population for the present study is agricultural farmers from five states in South India.

SAMPLE SIZE AND TECHNIQUE
In research, the term "sample size" refers to the minimum number of individuals needed to draw valid conclusions. The sample size was calculated scientifically using Israel's formula (Israel, G. D., 1992). Determining sample size is very much essential to determine the research's reliability. The final sample size was 552 based at 5% error in mean estimates.

DATA ANALYSIS AND RESULTS:
Farmers Network

The below table.1 shows that 41.3 percent of the farmers associated networks is academic, followed by 37.9 percent of the farmers have their network in

farmer organization and 20.8 percent of the farmers have their network is both.

Table.1: Farmers Network

Farmers Network	No. of Respondents	Percentage
Academic	217	41.3
Farmer Organization	199	37.9
Both	109	20.8
Total	525	100.0

Source: Field Survey

Preference of Social Media Network

The below table.2 shows that 33.9 percent of the responded farmers prefer social media network YouTube, followed by 31.4 percent of the farmers prefer Instagram as their social media network, 29 percent of the farmers preference is Facebook as their social media network and 5.7 percent of the farmers preferred social media network is WhatsApp.

Table.2: Preference of Social Media Network

Social Media Network	No. of Respondents	Percentage
WhatsApp	30	5.7
Facebook	152	29.0
Instagram	165	31.4
YouTube	178	33.9
Total	525	100.0

Source: Field Survey

Usage of Social Media Network

The below table.3 shows that 62.3 percent of the farmer's usage of social media network very often and 37.7 percent of the farmer's usage of social media network rarely.

Table-3: Usage of Social Media Network

Social Media Network Use	No. of Respondents	Percentage
Rarely	198	37.7
Very often	327	62.3
Total	525	100.0

Source: Field Survey

Contacts in Your Network for Knowledge/ Information

The below table.4 shows that 41.3 percent of the responded farmers contact academician in their networks, followed by 37.9 percent of the farmers contact researchers in their networks and 20.8 percent of the Farmers contact advisors in their network.

Table 4: Contact in Your Network

Contact in Your Network	No. of Respondents	Percentage
Academician	217	41.3
Researcher	199	37.9
Advisor	109	20.8
Total	525	100.0

Source: Field Survey

Communities of Practices across Farm Size

Null hypothesis – There are no significant difference in mean scores of Communities of practices among Farmers with different farm size.

Table-5 Community of Practices across Farm Size (N= 525)

Less than 5 Acre	N	Mean	SD	SE
5-10 Acre	403	23.78	3.721	.185
11-15 Acre	79	23.56	3.859	.434
Above 15 Acre	20	23.75	3.401	.760
Less than 5 Acre	23	23.78	3.425	.802

Table.5 shows the mean scores, standard deviation (SD) and standard Error of mean (SE) of community of practices across farm size. The mean scores varied in the range of community of practices 23.58 to 23.78.

Table.6 Community of Practices across Farm Size –ANOVA – (N=525)

		ANOVA					
	Sum of Squares	Df	Mean Square	F	Sig.	
NEWSD I	Between Groups	41.143	2	20.571	1.630	.197
	Within Groups	6298.833	499	12.623		
	Total	**6339.976**	**501**			
MP	Between Groups	8.299	2	4.149	.238	.788
	Within Groups	8684.865	499	17.405		
	Total	**8693.163**	**501**			
SI	Between Groups	17.775	2	8.887	.819	.441
	Within Groups	5413.789	499	10.849		
	Total	**5431.564**	**501**			
KSL	Between Groups	2.846	2	1.423	.067	.935
	Within Groups	10613.608	499	21.270		
	Total	**10616.454**	**501**			
DI	Between Groups	8.368	2	4.184	.462	.630
	Within Groups	4517.945	499	9.054		
	Total	**4526.313**	**501**			

A one-way ANOVA was conducted to understand the effect of farm size on communities of practices. Table. 6. shows the results. The results suggest that the farm size has no effect on community of practices of the respondents.

- The analysis also discovered 76.8 percent of the farmers their having less than 5 Acre their farm size, followed by 15 percent of the farmers their having 5-10 Acre their farm size, 4.4 percent of the farmers their having 11-15 Acre farm size and 3.8 percent of the formers their having Above 15 Acre farm size. From the analysis 41.3 percent of the farmers their network is academic, followed by 37.9 percent of the farmers their network is former organization and 20.8 percent of the farmers their network is both. The study shows that 33.9 percent of the farmers preference of social media network is YouTube, followed by 31.4 percent of the farmers preference of social media network is Instagram, 29 percent of the farmers preference of social media network is Facebook and 5.7 percent of the farmers preference of social media network is whatsapp. The study found that 62.3 percent of the farmer's usage of social media network very often and 37.7 percent of the farmer's usage of social media network rarely. The study concluded 41.3 percent of the farmer's contact their network is academician, followed by 37.9 percent of the farmers contact their network is researcher and 20.8 percent of the formers contact their network is advisor. The study reveals that role of community practices dimensions, Shared Domain of Interest, Membership and participation, Social Interaction, Knowledge sharing and learning and Diffusion of innovation.

CONCLUSION:

This empirical research finds a positive relationship between firm size, farmers networks and communities of practice. The size indicates the risk they take and amount they invest on farming; these external

factors influence their knowledge seeking behavior and enthusiasm to learn best practices related to the agriculture. This study helps to design customized policies related to their networking styles and preference and according to the firm sizes. Shared it can be crated among farmers, if they can be divided based on the land holdings and preferred network styles.

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Dr. Vijaya Vardhan Manchala   **Prof. D. Sreeramulu**

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TRANSFORMING MODERN BUSINESS: THE ROLE OF AI AND IOT"

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ABSTRACT:

Modern business processes are undergoing a radical change due to the convergence of artificial intelligence (AI) and the Internet of Things (IoT), which is altering operating paradigms and changing industries. This study examines the mutually beneficial link between AI and IoT, emphasizing how their convergence is boosting customer satisfaction, increasing corporate efficiency, and stimulating innovation. While IoT offers real-time data gathering and connectivity, providing unparalleled visibility and control over resources and assets, AI allows enterprises to leverage advanced data analytics for predictive insights, automation, and tailored consumer engagements. Supply chain optimization, smarter manufacturing processes, improved consumer interaction, and lower operating expenses are all being made possible by AI and IoT working together. But there are also serious issues with the integration of these technologies, such as cybersecurity threats, data privacy issues, and the possibility of employment displacement due to automation.

Additionally, Businesses must manage the ethical ramifications of implementing AI and IoT, guaranteeing openness, equity, and responsible use. In order to show how AI and IoT are being successfully applied to provide competitive advantages and promote sustainable growth, this paper looks at case studies from a variety of industries, such as manufacturing, healthcare, and retail. Understanding the possibilities and difficulties of AI and IoT will be essential for companies looking to prosper in a world that is becoming more connected and data-driven as businesses continue to change in the digital era.

Key Words: Artificial Intelligence, Internet of Things, Business Transformation, Supply Chain Optimization, Customer Experience

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

Dr. A. Suresh Kumar   **Mr. A. Eashwar Dutt**

1 INTRODUCTION
1.1 Brief overview of AI (Artificial Intelligence) and IoT (Internet of Things)

Artificial Intelligence (AI) encompasses the creation of computer systems capable of performing tasks that typically require human intelligence. These systems emulate cognitive functions such as learning, reasoning, problem-solving, and decision-making. AI utilizes various methodologies, including machine learning, where algorithms improve through data exposure, and deep learning, a specialized approach that replicates the brain's neural networks. The applications of AI are widespread, impacting diverse sectors like healthcare, finance, transportation, and education. Some notable advancements include customized recommendations, self-driving vehicles, and predictive analytics. (Chui et al., 2018).

The Internet of Things (IoT) refers to a vast network of internet-connected physical objects capable of gathering, sharing, and utilizing data. These interconnected "smart" devices encompass a wide range of items, from household appliances and wearable technology to industrial equipment and urban infrastructure. By integrating sensors, communication systems, and data analysis, IoT enables continuous monitoring, automated processes, and performance enhancement in real-time. Smart homes exemplify IoT applications by regulating illumination and temperature, while smart cities employ it to effectively manage traffic flow and energy consumption. (Zanella et al., 2014).

The fusion of Artificial Intelligence (AI) and the Internet of Things (IoT), known as AIoT, empowers connected devices with advanced learning capabilities. This integration allows for independent decision-making and intelligent reactions across diverse applications. By leveraging data-driven insights, AIoT devices become more intelligent and adaptable. The convergence of these technologies spurs advancements in fields such as proactive maintenance, self-governing systems, and customized services. As a result, AIoT is reshaping industries and revolutionizing everyday experiences. (Khan et al., 2019).

1.2 Importance of these technologies in today's business landscape

In today's business landscape, Artificial Intelligence (AI) and Internet of Things (IoT) play transformative roles in driving innovation, efficiency, and competitive advantage. Here's a breakdown of their importance:

1. Enhanced Decision-Making and Efficiency
- AI enables businesses to analyse massive datasets quickly, generating insights that support informed decision-making. This capability improves strategic planning, customer segmentation, and operational optimization. (Brynjolfsson & McAfee, 2014)
- IoT allows real-time monitoring of equipment, supply chains, and other assets, which helps businesses enhance productivity, detect issues early, and reduce downtime. This proactive approach improves overall efficiency. (Wang et al., 2016)

2. Customer Experience and Personalization
- AI-powered tools enable hyper-personalization, helping businesses tailor products, services, and experiences to individual preferences. For example, AI-driven recommendation systems provide customers with personalized shopping experiences, increasing engagement and sales. (Smith & Linden, 2017)
- IoT enables businesses to gather and act on customer data in real-time, as seen in smart homes and wearables. This data enables companies to deliver timely and relevant services, enhancing customer satisfaction. (Bandyopadhyay & Sen, 2011)

3. Cost Reduction and Predictive Maintenance
- AI and IoT Integration: The integration of artificial intelligence and Internet of Things technologies enables proactive equipment maintenance across manufacturing, transport, and logistics sectors, minimizing unexpected failures and reducing maintenance expenses. By anticipating potential equipment malfunctions, organizations can implement preventive actions, thereby cutting repair costs and minimizing

operational disruptions. (Chien, S., & Ding, C., 2017)

- IoT Sensors: IoT-enabled sensors offer real-time monitoring of resources such as electricity, water, and fuel, enabling businesses to enhance resource utilization and decrease operational expenditures. (Kumar, N., & Joshi, M., 2019).

4. Supply Chain Optimization

- • AI Driven Analytics: Analytics powered by artificial intelligence enhance supply chain efficiency by optimizing processes, predicting demand, and improving inventory management precision. This minimizes waste and maintains product availability, which is essential for manufacturing models that rely on just-in-time delivery. (Gunasekaran, A., & Ngai, E. W. T., 2019).

- • IoT Devices: Internet of Things (IoT) sensors monitor shipments, environmental factors, and quality control in real time, enhancing visibility and streamlining operations throughout the supply chain network. (Li, X., & Wang, L., 2020).

5. Innovation and Competitive Advantage

- Artificial intelligence empowers companies to stay competitive by utilizing machine learning algorithms to create innovative products, services, and business strategies. Meanwhile, the Internet of Things offers valuable data on consumer preferences and market dynamics, allowing businesses to develop tailored offerings that directly address customer demands. (Davenport, T. H., & Westerman, G., 2018).

6. Data-Driven Decision-Making and Agility

- AI and IoT together foster an environment where decisions are based on data analysis. Organizations can leverage real-time information from IoT sensors and AI-powered predictive analytics to quickly adapt to market shifts and make informed, data-driven choices.

7. Sustainability and Environmental Impact

- Sustainability initiatives are significantly enhanced by AI and IoT technologies. Smart buildings utilize IoT to optimize resource

management, such as decreasing energy usage. Meanwhile, AI examines environmental data to uncover opportunities for minimizing waste and reducing carbon emissions. These efforts contribute to organizations' social responsibility commitments and regulatory compliance. (Silver, D., & McGrath, M., 2020).

By integrating AI and IoT, businesses can achieve a level of automation and intelligence that drives productivity, cost efficiency, and innovation—ensuring long-term relevance and resilience in an increasingly digital world.

1.3 Overview of how AI and IoT work together

Artificial Intelligence (AI) and the Internet of Things (IoT) work together to create intelligent, interconnected systems that collect, process, and act on data. By combining IoT's ability to gather data from the physical world with AI's analytical and decision-making capabilities, businesses can create solutions that improve efficiency, automation, and real-time responsiveness. (Zhang, Y., & Yang, L.,2020).

Here's an overview of how they integrate:
1. Data Collection and Transmission (IoT)

- IoT devices such as sensors, cameras, and wearables gather vast amounts of data from various sources, including machinery, environmental conditions, and user behavior. These devices are connected to a network (usually via Wi-Fi, Bluetooth, or cellular networks) that enables them to communicate and share data with each other or with centralized systems.

- IoT enables real-time data collection, providing businesses with insights into operations, product performance, and customer interactions.

2. Data Processing and Analysis (AI)

- The data collected from IoT devices is then fed into AI systems for analysis. Through machine learning and data analytics, AI can sift through large datasets, identify patterns, detect anomalies, and make predictions.

- For example, in predictive maintenance, AI

algorithms analyse data from IoT sensors on machinery to detect early signs of potential issues. This allows businesses to perform maintenance proactively rather than reactively, saving time and costs.

3. Autonomous Decision-Making and Action (AI + IoT)

- Once AI processes the data, it can trigger automated responses through IoT devices. For example, in smart manufacturing, AI can analyse data from IoT-connected machines and automatically adjust production settings or initiate troubleshooting if issues arise.
- In smart cities, AI processes data from IoT traffic sensors and adjusts traffic light patterns to optimize flow in real-time, reducing congestion without human intervention.

4. Continuous Learning and Optimization (AI)

- AI systems continuously learn from the data IoT devices generate, improving their accuracy and effectiveness over time. This is especially relevant in applications where environments or user behaviours change, like in personalized services, where AI adapts based on evolving customer preferences.
- As AI learns, it can refine its models, making future predictions more accurate and responsive, leading to a feedback loop of improvement and optimization.

5. Human-Centric Applications and Enhanced User Experience

- AI and IoT together can create personalized and human-centred applications. For example, smart home systems use IoT sensors and AI algorithms to learn a user's habits, such as preferred lighting and temperature settings, and adjust accordingly.
- In retail, AI analyses IoT-generated data on customer movements within stores to improve product placement or personalize marketing strategies, enhancing the customer experience and increasing engagement.

6. Scalability and Real-Time Monitoring

- With IoT providing continuous, scalable data streams and AI making sense of that data in real-time, businesses can scale these applications across locations or divisions seamlessly. AI-powered dashboards and monitoring systems present data in real-time, offering immediate insights into processes, inventory, and customer interactions, supporting quick decision-making.

1.4 Benefits of the AI-IoT Synergy

- Predictive Insights: Combining AI and IoT allows for predictive insights, enabling companies to anticipate maintenance needs, demand fluctuations, and customer preferences.
- Automation: IoT enables the data flow needed for AI-driven automation, reducing reliance on human intervention for routine tasks.
- Enhanced Operational Efficiency: With real-time data from IoT and decision-making support from AI, processes can be optimized dynamically.
- Personalization: By understanding user behaviour patterns through IoT data, AI can provide tailored experiences and products.

Through the synergy of AI and IoT, businesses can move towards smarter, more responsive systems that add value in areas like customer experience, operational efficiency, and sustainability, paving the way toward Industry 5.0 goals.

2 Statement of the Problem

Understanding the complex effects of artificial intelligence (AI) and the internet of things (IoT) has become essential as companies incorporate these technologies more and more into their daily operations. There is a dearth of thorough study analysing the precise ways in which AI and IoT are changing modern business practices, despite the fact that these technologies promise increased productivity, better decision-making, and superior customer experiences. (Vasan, A., 2020).

Businesses also have to deal with issues including cybersecurity risks, data privacy issues, and the

Dr. A. Suresh Kumar   **Mr. A. Eashwar Dutt**

possibility of employment displacement from automation. Organizations are frequently unable to keep up with the quick speed of technology change, which creates uncertainty regarding the best practices for adoption and possible return on investment. (Jain, R., & Sharma, D., 2020)

This study aims to investigate the extent to which AI and IoT are transforming business operations, customer engagement, and competitive strategies, while also identifying the challenges and risks businesses must navigate. By addressing these gaps, the research seeks to provide valuable insights for business leaders, policymakers, and researchers on effectively leveraging AI and IoT to foster innovation and drive sustainable growth in an increasingly digital economy.

The purpose of this paper is to explore the transformative roles of Artificial Intelligence (AI) and the Internet of Things (IoT) in the context of modern business development, with a focus on their applications, benefits, and potential challenges. This paper aims to analyze how these technologies contribute to achieving Industry 5.0 goals, emphasizing human-centered and sustainable innovation.

2.1 Key Questions to Be Addressed

* What are the current applications of AI and IoT in business development?
* How do AI and IoT support the principles of Industry 5.0?
* What are the benefits of integrating AI and IoT in business processes?
* What challenges and ethical considerations arise from using AI and IoT in business?
* How can businesses leverage AI and IoT to stay competitive in an evolving market?
* What is the future outlook for AI and IoT in shaping the business landscape?

By addressing these questions, the paper seeks to provide a comprehensive understanding of the importance, applications, and implications of AI and IoT in today's business landscape, offering insights for academics, practitioners, and industry stakeholders.

3 Objectives of the study

The main objectives of the study are mentioned here under:

* To identify and analyse current applications of AI and IoT in business development across various industries.
* To examine how AI and IoT technologies support and align with the principles of Industry 5.0.
* To evaluate the benefits of integrating AI and IoT in business processes and their impact on efficiency, cost reduction, and competitive advantage.
* To identify challenges and ethical considerations associated with the use of AI and IoT in business settings.
* To outline strategies for leveraging AI and IoT to maintain competitiveness in a dynamic market environment.
* To explore future trends and opportunities in AI and IoT that will shape the business landscape and offer recommendations for business preparedness.
* These objectives provide a structured pathway for the study, focusing on understanding the current impact of AI and IoT, addressing challenges, and exploring future opportunities for businesses looking to integrate these technologies strategically.

4 Significance of the study

This study's primary goal is to demonstrate how the Internet of Things (IoT) and artificial intelligence (AI) are revolutionizing the commercial world. In order to remain competitive and relevant, managers, legislators, and academics must comprehend the effects of new technologies as organizations use them more and more.

IoT and AI provide special methods for improving decision-making, streamlining operations, and optimizing procedures. This report clarifies how companies may use these technologies to save expenses, boost productivity, and spur innovation—all of which are essential for maintaining growth in the fast-paced world of today. By providing information

Dr. A. Suresh Kumar | Mr. A. Eashwar Dutt

on potential hazards and best practices, this study aids businesses in formulating strategic plans that complement market developments and provide them a competitive edge. Furthermore, this research investigates how these technologies affect job roles, skill requirements, and employee engagement, providing valuable information for organizations in talent development and workforce planning.

This study not only adds to academic knowledge but also provides practical guidance to organizations and policymakers navigating the complexities of a rapidly changing technological landscape.

5 Literature Review

The integration of Artificial Intelligence (AI) and the Internet of Things (IoT) has become a pivotal factor in transforming modern business practices. As organizations increasingly adopt these technologies, a substantial body of literature has emerged, highlighting their implications for efficiency, customer engagement, and strategic decision-making.

5.1 AI and Its Business Applications
AI technologies, encompassing machine learning, natural language processing, and computer vision, are reshaping business landscapes. According to Brynjolfsson and McAfee (2014), AI enhances operational efficiency by automating routine tasks, enabling organizations to allocate human resources to higher-value activities. Recent studies, such as those by Chui et al. (2018), emphasize AI's role in data analytics, providing businesses with deeper insights into customer behavior and market trends. These insights allow for personalized marketing strategies and improved customer relationship management, leading to enhanced customer satisfaction and loyalty.

5.2 IoT and Operational Efficiency
The IoT facilitates connectivity between devices, enabling real-time data collection and analysis. Research by Wang et al. (2016) demonstrates how IoT applications in supply chain management enhance inventory tracking and reduce operational

costs. By leveraging IoT, organizations can monitor equipment performance, leading to predictive maintenance and minimizing downtime. A study by Kaur and Singh (2020) further explores how IoT improves operational efficiency in manufacturing by optimizing production processes and resource allocation.

5.3 The Synergy of AI and IoT
The convergence of AI and IoT creates a powerful synergy that enhances decision-making processes. As noted by Manyika et al. (2017), AI algorithms can analyze vast amounts of data generated by IoT devices, leading to actionable insights. For instance, predictive analytics driven by AI can forecast demand patterns based on real-time data from IoT sensors, allowing businesses to optimize inventory levels and reduce waste. This combination not only improves operational efficiency but also fosters innovation, as organizations can develop new products and services based on data-driven insights (Porter & Heppelmann, 2014).

5.4 Challenges and Ethical Considerations
Despite the benefits, the adoption of AI and IoT also presents challenges. Issues related to data privacy, security, and ethical considerations are paramount. Research by Zuboff (2019) highlights the risks associated with data collection and surveillance, emphasizing the need for organizations to adopt ethical frameworks in their AI and IoT strategies. Additionally, concerns about job displacement due to automation necessitate a discussion on the societal impacts of these technologies (Susskind & Susskind, 2015).

5.5 Future Outlook and Implications
The literature indicates a growing trend towards the integration of AI and IoT in various sectors, with significant implications for the future of work and business models. As organizations continue to innovate and adapt, the emphasis will likely shift towards creating sustainable and resilient business practices. Studies by Bock et al. (2021) suggest that organizations embracing AI and IoT will gain a competitive advantage, as they can respond more effectively to market dynamics and customer needs.

Dr. A. Suresh Kumar   **Mr. A. Eashwar Dutt**

6 Current Trends in AI and IoT

Current trends in AI and IoT are transforming industries by enabling smarter, more connected systems that enhance decision-making, efficiency, and customer experiences. In AI, advancements in machine learning, natural language processing, and generative models are driving personalized customer interactions, predictive analytics, and automation across sectors like retail, healthcare, and finance. IoT, on the other hand, is expanding with the proliferation of smart devices and edge computing, allowing for real-time data processing and improved responsiveness. Together, AI and IoT are paving the way for innovations like smart cities, autonomous vehicles, and intelligent manufacturing, where IoT sensors gather data and AI systems analyse it to optimize processes and reduce costs. This convergence is also promoting Industry 5.0 values, with a growing emphasis on human-centred design, sustainable practices, and resilient, adaptable systems. (Raj, R. K., & Srinivasan, R., 2020).

- Recent advancements in AI and IoT technologies: Recent advancements in AI and IoT are rapidly accelerating innovation and transforming industries. In AI, major progress in deep learning, natural language processing (NLP), and generative AI has led to powerful models that can generate human-like text, images, and even code, enhancing personalized customer experiences and automating content creation. Breakthroughs in reinforcement learning and machine learning algorithms have improved AI's ability to analyse large datasets for predictive insights, enabling more accurate forecasting in sectors like finance, healthcare, and supply chain management. In IoT, advancements in edge computing allow data to be processed closer to its source, reducing latency and enabling real-time decision-making in applications such as autonomous vehicles, smart grids, and industrial automation. The integration of 5G technology with IoT has also expanded connectivity for smart devices, facilitating faster data exchange and supporting complex, interconnected systems in smart cities and healthcare. Together, these advancements are creating more intelligent, responsive, and efficient systems, reshaping industries and paving the way for a new era of digital transformation.

- Adoption rates across different industries: Adoption rates of AI and IoT vary significantly across industries, with sectors like technology, manufacturing, and healthcare leading the way. In manufacturing, AI and IoT are widely used for predictive maintenance, quality control, and process automation, with adoption rates continuing to grow as factories move toward smart manufacturing and Industry 4.0/5.0 principles. The healthcare sector has also seen a strong adoption of these technologies, using AI for diagnostic imaging and IoT for remote patient monitoring, especially accelerated by the demand for telehealth solutions. The retail and e-commerce industries are rapidly adopting AI for personalized recommendations, inventory management, and customer service chatbots, while IoT-enabled smart shelves and connected devices help streamline supply chains. In finance, AI adoption is high for risk assessment, fraud detection, and customer service, but IoT remains in the early stages, with a focus on secure, high-value applications. Industries like agriculture and logistics are increasingly adopting IoT for tracking, monitoring, and optimizing processes, although these sectors face challenges in connectivity and infrastructure. Overall, while AI and IoT adoption rates are advancing across industries, variations exist due to factors like cost, technical infrastructure, regulatory requirements, and specific business needs.

7 Case studies of businesses successfully implementing AI and IoT

Different industries have already started applying and implementing AI and IoT, and enjoying the results in terms of transformative impact on their businesses. Some of the illustrations are described here under:

1. Siemens (Manufacturing)
Siemens has integrated AI and IoT into its

Dr. A. Suresh Kumar   **Mr. A. Eashwar Dutt**

manufacturing processes through its IoT platform, MindSphere. By connecting production equipment and systems to MindSphere, Siemens collects real-time data from its manufacturing lines and applies AI algorithms to optimize machine performance, reduce downtime, and implement predictive maintenance. This system allows for continuous monitoring of factory equipment, identifying potential failures before they happen, and thereby reducing operational costs and improving productivity.

2. John Deere (Agriculture)

John Deere has leveraged IoT and AI in its farming equipment to support precision agriculture. Its connected tractors and machinery use IoT sensors and AI algorithms to monitor soil quality, crop health, and environmental conditions in real-time. By combining this data with machine learning models, farmers can make data-driven decisions about planting, irrigation, and fertilization, leading to higher crop yields and more efficient resource usage. This technology has been particularly beneficial for addressing the challenges of climate change and sustainable farming.

3. Amazon (Retail and Logistics)

Amazon has implemented AI and IoT extensively in its warehouses and logistics operations. Through a network of IoT-enabled robots and AI-powered systems, Amazon optimizes inventory management, order fulfilment, and supply chain logistics. In its fulfilment centres, robotic systems navigate the warehouse floor, picking and transporting items to human workers for packing. Additionally, AI algorithms optimize route planning for delivery, reducing delivery times and improving customer satisfaction. This integration has significantly increased Amazon's operational efficiency and reduced costs.

4. Royal Philips (Healthcare)

Philips has incorporated AI and IoT to enhance patient monitoring and diagnostics. Through its Health Suite digital platform, Philips connects medical devices and sensors to monitor patients' vital signs and health metrics in real-time, both in hospitals and remotely. AI algorithms analyse this data to provide early warnings of potential health issues, enabling proactive interventions. This system improves patient outcomes by enabling more personalized, continuous care and has become especially valuable in managing chronic diseases and post-operative care.

5. Tesla (Automotive)

Tesla leverages AI and IoT in its electric vehicles (EVs) to enable autonomous driving, predictive maintenance, and over-the-air updates. Each Tesla vehicle is equipped with IoT sensors that collect data on driving patterns, road conditions, and vehicle performance. AI algorithms process this data to continuously improve Tesla's self-driving software, enhancing safety and driving accuracy. Additionally, Tesla's over-the-air updates allow the company to deploy software improvements and new features remotely, creating a dynamic, adaptive experience for users and keeping vehicles at the cutting edge of technology.

These case studies illustrate the diverse applications and benefits of AI and IoT, from improved efficiency and productivity to enhanced customer satisfaction and sustainability. They demonstrate how businesses across various sectors can leverage these technologies for competitive advantage and transformative impact.

8 Impact on Business Operations

By automating procedures and enabling real-time data insights, the integration of AI and IoT in business operations improves decision-making, lowers costs, and increases efficiency. Businesses may function more proactively and responsively thanks to these technologies, which also minimize resource utilization, expedite operations, and enable predictive maintenance. All things considered, AI and IoT spur innovation, boost output, and give businesses a competitive edge in quickly changing markets. (Kumar, S., & Sharma, P., 2021).

• Automation of processes and its effect on efficiency: Automation through AI and IoT streamlines repetitive tasks, reduces human error, and accelerates workflows, significantly boosting operational efficiency. By enabling

Dr. A. Suresh Kumar **Mr. A. Eashwar Dutt**

predictive maintenance, real-time monitoring, and automated decision-making, businesses can optimize resource use, cut down on downtime, and enhance productivity.

• Data-driven decision-making and its benefits: Data-driven decision-making empowers businesses to make informed choices based on real-time analytics and insights, leading to improved outcomes and strategic planning. By leveraging data from AI and IoT, organizations can identify trends, optimize operations, and enhance customer experiences, ultimately driving growth and competitive advantage.

• Real-time monitoring and predictive maintenance in manufacturing: Real-time monitoring and predictive maintenance in manufacturing leverage IoT sensors and AI analytics to continuously assess equipment performance, enabling proactive interventions that minimize downtime and reduce maintenance costs while ensuring optimal production efficiency.

9 Impact on Customer Experience

The combination of AI and IoT technologies substantially improves customer experiences by delivering customized, quick, and smooth interactions across multiple channels. AI-powered analytics enable companies to gain insights into customer preferences and behaviours, facilitating personalized recommendations and focused marketing approaches that align with individual requirements. Concurrently, IoT devices enable instant communication, allowing businesses to track customer usage trends and provide timely assistance or pre-emptive service notifications, thereby enhancing engagement and contentment. Furthermore, intelligent technologies like smart home devices and wearables give customers increased control and ease of use, further enhancing their overall experience. By promoting more individualized and efficient interactions, AI and IoT not only increase customer loyalty but also help brands stand out in a competitive marketplace. (Smith, J., & Williams, M., 2021).

10 Challenges and Considerations

While implementing AI and IoT in business operations the organizations may come across with several challenges and considerations which they must navigate to ensure successful integration.

• Data Privacy and Security: As businesses collect vast amounts of data through IoT devices, safeguarding this sensitive information becomes paramount. Organizations must address potential vulnerabilities to prevent data breaches and ensure compliance with regulations such as GDPR.

• Integration and Interoperability: Many businesses face challenges in integrating new AI and IoT technologies with existing systems and processes. Ensuring that devices, software, and platforms can communicate effectively requires careful planning and investment in compatible infrastructure.

• Skill Gaps and Workforce Impact: The adoption of AI and IoT may lead to significant changes in job roles and required skill sets. Organizations must address potential skill gaps by investing in training and reskilling programs, as well as managing workforce concerns related to automation and job displacement.

• High Implementation Costs: While AI and IoT technologies can drive significant long-term savings and efficiencies, the initial investment in hardware, software, and training can be substantial. Companies need to assess their return on investment and establish a clear financial strategy to support implementation.

• Ethical Considerations: The deployment of AI, particularly in decision-making processes, raises ethical questions regarding bias, transparency, and accountability. Businesses must be proactive in addressing these concerns to build trust with customers and stakeholders.

• Scalability and Maintenance: As organizations grow and their needs evolve, ensuring that AI and IoT solutions can scale effectively becomes crucial. Companies must also consider ongoing maintenance and support to ensure systems remain functional and relevant over time.

Dr. A. Suresh Kumar   **Mr. A. Eashwar Dutt**

By proactively addressing these challenges, businesses can better position themselves to harness the full potential of AI and IoT technologies while minimizing risks and ensuring ethical practices.

11 Future Outlook of AI and IoT

The prospects for artificial intelligence and the Internet of Things are marked by swift progress and growing convergence across diverse industries, heralding revolutionary shifts in business operations and customer engagement. As AI technologies advance, they will facilitate more intricate data examination, resulting in improved forecasting abilities and automation of intricate processes. The rollout of 5G infrastructure will further enhance IoT connectivity, enabling smooth device communication and instantaneous data handling, which is crucial for applications such as intelligent urban environments, self-driving vehicles, and manufacturing automation. (Kumar, R., & Gupta, A., 2020).

In the coming years, we can expect greater emphasis on interoperability among IoT devices, enabling more cohesive ecosystems that enhance operational efficiency and user experience. Additionally, advancements in edge computing will empower IoT systems to process data closer to the source, reducing latency and improving responsiveness, particularly in critical applications like healthcare and manufacturing. (Patel, S., & Sharma, P., 2021).

Sustainability will also play a significant role in the future of AI and IoT, as businesses increasingly seek to leverage these technologies to optimize resource usage and reduce environmental impact. Companies will focus on creating energy-efficient solutions and utilizing AI for better resource management, aligning with global sustainability goals. (Thomas, L., & Chen, W., 2020).

Moreover, ethical considerations surrounding AI, including bias, transparency, and data privacy, will necessitate the development of robust frameworks and regulations to guide responsible usage. As public awareness and scrutiny grow, organizations will need to prioritize ethical practices in their AI and IoT

strategies to maintain trust and compliance. (O'Neill, C., & Turner, M., 2020).

Overall, the convergence of AI and IoT will continue to reshape industries, driving innovation, enhancing customer experiences, and fostering new business models that are adaptable to an ever-changing technological landscape.

CONCLUSION

In conclusion, the transformative role of AI and IoT in modern business is profound and far-reaching, reshaping how organizations operate, engage with customers, and innovate. These technologies empower businesses to harness real-time data, automate processes, and enhance decision-making, leading to increased efficiency, reduced costs, and improved customer experiences. As companies continue to integrate AI and IoT into their strategies, they not only gain a competitive edge but also foster greater adaptability and resilience in an ever-evolving market landscape.

Moreover, the alignment of AI and IoT with principles such as sustainability and human-cantered design underscores their potential to contribute positively to society and the environment. However, the journey toward full integration is not without challenges, including data privacy concerns, ethical considerations, and the need for robust infrastructure. To navigate these complexities successfully, businesses must embrace a strategic approach that prioritizes ethical practices, workforce development, and collaborative ecosystems. As we look to the future, the continued evolution of AI and IoT will unlock new opportunities and innovations, driving the next wave of digital transformation and enabling businesses to thrive in an interconnected world. Ultimately, organizations that proactively adapt to these changes will be better positioned to meet the demands of tomorrow's dynamic and digital economy.

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CHISELING ENTREPRENEURIAL MINDSETS: A SYSTEMATIC LITERATURE REVIEW ON THE ESSENTIAL SKILLS

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ABSTRACT:

In contemporary times, entrepreneurs are held to a higher standard than mere administrators. Entrepreneurship and entrepreneurial activities are gaining importance in this VUCA world. As their significance for both the economy and society has been established, governments across the globe are increasingly endorsing independent activities. Understanding the essential skills that comprise an entrepreneurial mindset is therefore of the utmost importance. The purpose of the systematic literature review is to identify the essential skills that comprise an entrepreneurial mindset. In total, forty-seven research studies were incorporated into the review. The systematic procedure facilitated the examination of research trends throughout the years. Understanding the essential skills necessary to cultivate an entrepreneurial mindset was also made possible by the research. The entrepreneurial mindset has been the subject of numerous studies, but the essential skills demanded in an ever-evolving environment have received even less attention. This research provides an answer to this question and establishes the direction for subsequent investigations. The study is of utmost importance for policy makers as it identifies the essential skills that should be the primary emphasis of educational programs and activities designed to foster an entrepreneurial mindset.

Key Words: Entrepreneurial Mindsets, Skills, Entrepreneurship, Systematic Literature Review

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1. INTRODUCTION

According to Bosman (2019) Technical skills are needed, but you also need to be curious, be able to put together pieces of information to find answers, and be focused on creating value. These are all traits of an entrepreneurial mindset. Success in today's fast-paced, highly competitive business world requires an entrepreneurial mindset and the acquisition of essential skills. This is true whether one is an entrepreneur launching a new firm or an employee aiming to innovate and drive development inside an existing organization. By definition, the entrepreneurial mindset is "the inclination to discover, evaluate and exploit opportunities (Bosman & Fernhaber, 2018). An entrepreneurial mindset is more than just starting a business. It also means being proactive, creative, and focused on opportunities when fixing problems and making decisions. Entrepreneurship leads to new ideas, jobs, and economic growth (Kritikos, 2014). It is generally acknowledged that entrepreneurial activities hold significant economic value. It drives new jobs, commerce, ideas, technology, and goods (Arzeni, 1998; Audretsch, 2007; Birch, 1987; Kirchoff, 1997). Given its relevance, it is not unexpected that much work has been put into understanding what can assist such actions (Davis et.al.,2016).

Research studies show that entrepreneurship is not an inborn trail but one that can be entrepreneurial mindset can be learned and developed (Naumann,2017). But those sparks and drivers need to be set off by someone with a business attitude. People have been interested for a long time in the psychological traits, motives, attitudes, and actions that make someone an entrepreneur and help them be successful. Since studying entrepreneurial thinking, entrepreneurship researchers have wondered why some individuals recognize opportunities and others don't. Studies have indicated that entrepreneurial mindset can be developed. And if it can be developed there has to be certain skills that foster the entrepreneurial mindset. Some researchers say that training these skills is one way to get students ready for the uncertain needs of society and the job market in the coming decades (Murgatroyd, 2010; Sahlberg & Oldroyd, 2010). It is now generally accepted that an entrepreneurial mindset helps leaders create value by "recognizing and acting on opportunities, making decisions with limited information, and remaining adaptable and resilient in conditions that are uncertain and complex," said Rowena Barrett, pro vice-chancellor for entrepreneurship at the Queensland University of Technology.

Despite an increased focused on developing and understanding entrepreneurial mindsets, the studies on the necessary skills that led to this mindset remain nascent. Many studies focus on entrepreneurs' human capital as success criteria for new enterprises, but little is known about the drivers of entrepreneurial skills needed to establish a business (Stuetzer et.al., 2013). To fill this research void, this systematic literature review was conducted. The primary objective of this research is to synthesize the existing body of literature concerning the entrepreneurial mindset and the requisite skills. The research study seeks to identify the skills that must be developed in order to cultivate an entrepreneurial mindset. The research will serve to establish a definitive course regarding the essential skills demanded. Additionally, it seeks to determine future research agendas through the identification of research gaps within the studies.

2. LITERATURE REVIEW:

McGrath and MacMillan (2000) defined "entrepreneurial mindset" as "the ability to sense, act, and mobilize under uncertain conditions." According to them, entrepreneurs stay alert to new opportunities, but do not pursue all of them at the same time. Instead, they are aware of their scarce resources and strictly focus them on those projects which are aligned with their strategy and promise the highest return. Implementing these projects requires them to be adaptive to the evolving reality to ensure the best exploitation of opportunities. For this, they leverage their exist-ing internal and external social networks (McGrath & MacMillan, 2000).

The entrepreneurial mindset is defined as a feeling or tendency to provide a critical and creative thinking ability (Nabi et al., 2017). Research studies have indicated that entrepreneurial mindset is related to self ompetence (Haynie et al., 2010). And the self competence of individuals depends upon the psychological factors Solesvik et al. (2013); Westhead and Solesvik (2016). A study by Lindberg et al. (2017) also said that understanding how people act and what they do as entrepreneurs is an important part of having an entrepreneurial mindset. entrepreneurial mindset has also been linked to knowledge, experience, creative thinking, problem-solving, looking for opportunities, attitudes, and beliefs (Pfeifer et al. (2016) and Zupan et al. (2018). The entrepreneurial mindset is linked with the individual's thinking ability, looking for opportunities instead of obstacles, and offering ideas in overcoming solutions rather than complaints (Naumann, 2017; Davis et al., 2016). Which leads to the conclusion that the entrepreneurial attitude can be strengthened. (Cui et al., 2019; Daniel, 2016).

The "entrepreneurial mindset" can be analyzed from two perspectives. In relation to commercial activities, it involves groups and individuals who create marketable products and services or are entering different phases of establishing and managing a company. These activities hardly overlap with the educational activities of young people in primary education. The second position, which has been gaining in prominence in the last decade turns the spotlight on the promotion of creative and innovative problem-solving as a universally applicable skill (Neck & Greene, 2011; Sarasvathy & Venkataraman, 2011).

Haynie and Shepherd (2007, p. 9) argued that entrepreneurial mindset is an outcome of meta-cognitive awareness as it is the "ability to adapt thinking process to a changing context and task demands". In 2010 Shepherd et al., further refined their definition and suggested that the "ability to rapidly sense, act, and mobilize" is a response to a decision made under uncertainty to exploit an opportunity. Baron (2014) stressed the uniqueness that entrepreneurs create by the way they "think, reason, make decisions, plan and set goals". They are able to connect apparently unrelated patterns through the use of their internal frameworks, which are shaped by experience, knowledge, heuristics and networks. The environments they are in make a different way of thinking necessary. When they translate their ideas into reality they do not use usual cause- and effect logics, but connect information in a different way (Baron, 2014). McMullen and Kier (2016, p. 664) agree by stating that the EM is the "ability to identify and exploit opportunities without regard to the resources currently under their control".

These definitions hereby make entrepreneurial mindset a skill that can be developed. In our research study we are centering our focus on the definition as given by). Davis et al., (2016) stated that EM is a "constellation of motives, skills, and thought processes that distinguish entrepreneurs from non-entrepreneurs".

Entrepreneurship skills are the traits and skills that allow people to find, build, and go after business opportunities that will help them succeed (Baron and Markman, 2000). People who want to start and run their own businesses need to have strong entrepreneurship skills. These skills include many different abilities, such as being creative, coming up with new ideas, taking risks, and being able to spot and take advantage of chances. Entrepreneurs must pitch their ideas, close deals, and develop ties with customers, suppliers, and investors, so effective communication and networking skills are also crucial. Strong financial management skills are also needed to make budgets, make predictions, and keep track of cash flow. Problem-solving and decision-making skills are also very important for businesses because they have to deal with problems and unknowns quickly and effectively. As such, entrepreneurship skills are necessary to get through the tricky parts of starting and running a business in today's market.

Dr Durdana Ovais   **Dr. Richa Jain**

3. MATERIAL AND METHOD

It was discovered through a review of the relevant literature that the entrepreneurial mindset is subject to numerous definitions. According to studies, entrepreneurship is a skill that can be learned rather than something that comes naturally to people. Because of this, mapping is needed to find the skills that make up this entrepreneurial mindset. In order to bring together various points of view and aspects of the entrepreneurial mindset, this research study also tries to find connections between the entrepreneurship mindset and the skills needed. The other goal of this study is to find the gaps in the research so that research fans can come up with answers in the future.

These inclusion criteria were set before the search for appropriate research works and the inclusion criteria were decided. The factors for elimination were also chosen to cut down on wasted time and effort. A thorough literature review was done to see how much writing was already out there on the subject. This is how the research study does its job. We did a full search using the keywords "entrepreneurial mindset" and "skills," which led to a considerable number of research studies. It was possible to find more key terms in these studies by looking at their titles and keywords. This helped make a better list. Also, the list was looked at more closely to see if the key terms were used in the news and study. The writing that was already out there on the subject was looked at using the Google Scholar search engine database. The final list had 47 study papers that were all about having an entrepreneurial mindset and skills. The parts of these research studies were looked at, and it was decided that the parts about the release year, study type, focus area, key skills, and results would be taken from these research studies.

4 FINDINGS AND DISCUSSION
4.1 trend analysis of research

There were 47 research studies included in this systematic review of the literature. A trend analysis was performed by examining the prevalence of these research studies conducted in the past few years. An increasing level of attention has been observed towards the domains of interprenior mindset and

interprenior skills. As the significance of interviews has progressively come to be acknowledged over time, researchers' curiosity regarding the characteristics of an entrepreneur has grown. The growing quantity of research studies serves as an indication of the unresolved inquiries that academia endeavors to address in order to benefit the industry.

Figure 1 Trend Analysis of Research
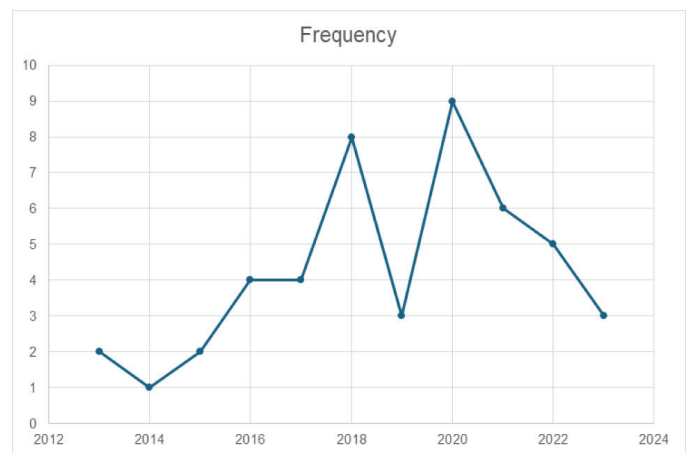
Source: Developed for the purpose of the study

An illustration of the number of studies conducted throughout the course of time can be found above. Between the years 2018 and 2020, there was a growing interest in the academia regarding entrepreneurial mindset and skills. It is also possible to observe that the level of interest has been steadily increasing over the course of the years.

4.2 Types of studies undertaken
Figure 2 Types of studies undertaken

Source: Developed for the purpose of the study

Dr Durdana Ovais   **Dr. Richa Jain**
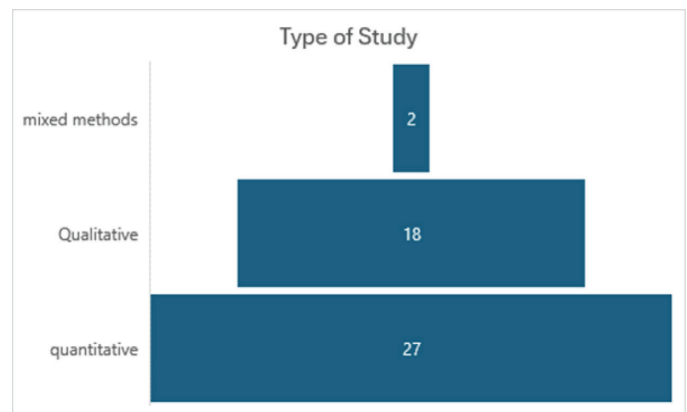
The categories of studies conducted are depicted in the figure above (Figure 2). An observation was made that the majority of research conducted to examine the entrepreneurial mindset was quantitative in nature. Additionally, qualitative research was being conducted; however, it primarily consisted of exploratory case studies targeting particular regions or occupations. A total of two investigations have been conducted employing hybrid methods.

4.3 Word Cloud of key words used.

The emergence of the word cloud concept in recent years has facilitated comprehension of which keywords are most frequently employed in research studies. On the basis of the keywords utilized in the reviewed research studies, a word cloud was generated. The findings are illustrated in Figure 3 that follows.

Figure 3 Word Cloud of key words used.

Source: Developed for the purpose of the study

The word cloud that is produced provides an overview of the primary variables that comprise the world-based research studies that are being evaluated(Figure 3). Evidently, their education and analysis of entrepreneurial intent had been the primary focus, as had been the development of their mindset. Furthermore, the studies looked into the skills that are needed and can be learned through a variety educational program. These terms show that there is a lot of focus on learning and understanding the attitude and skills needed to be an entrepreneur, as well as the part that education plays in encouraging people to be entrepreneurial. Other buzzwords that are often used are those that are specific to being an entrepreneur, like spotting opportunities, managing risks, and growing a business. Overall, the terms show that the focus is on learning about the business world from a psychological, educational, and practical point of view.

4.4 Focus Area of Studies

Figure 4 Focus Area of Studies.
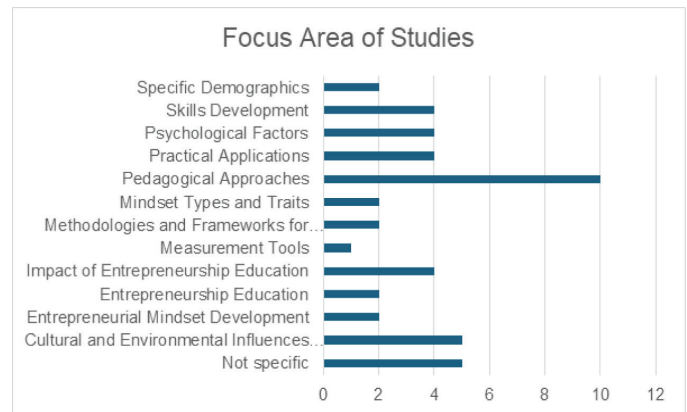
Source: Developed for the purpose of the study

The illustration above (Figure 4). shows that the educational methods to learning the entrepreneurial mindset and skills necessary for business have been the main focus of the studies under review. After this, studies were done to try to figure out how culture and surroundings affect the desire to be a business. Another big area of study has been how entrepreneurs improve their skills, what psychological factors affect their willingness to take risks, how business schooling affects them, and how these ideas can be used in real life. A smaller number of studies have looked at how to measure a business attitude and the skills that are needed.

Dr Durdana Ovais   Dr. Richa Jain

4.5 Skills identification and categorisation

Table 1: Categories of skills

Category	Skills	Authors
Professional Skills	Self-reflection, Collaborative problem-solving, Opportunity identification, Strategic planning, Managing ambiguity, Resolution of problems and decision-making, Transformational leadership, Clear and visual communication, Teamwork and networking, Digital communication	(Korte et al., 2018; Balachandra, 2019; Aima et al., 2020; Bekki et al., 2018; Gubik & Bartha, 2021; Jardim, 2021; Hassan et al., 2022)
Technical Skills	Opportunity identification, Creativity, Innovative thinking, Financial literacy	(Zupan et al., 2018; Colombelli et al., 2022)
Management Skills	Careful planning, Strategic implementation	(Blake Hylton et al., 2020)
Social Skills	Communication, Teamwork	(Costin et al., 2018; Pollard & Wilson, 2014)
Personal Skills	Curiosity, Self-reflection, Confidence, Resilience, Creativity, Initiative, Risk-taking, Happiness, Gratefulness	(Mukhtar et al., 2021; Ikonen & Nikunen, 2019; Morris & Tucker, 2023; Subramaniam & Shankar, 2020)
Educational Skills	Decision-making, Risk management, Problem-solving, Attitude, Self-efficacy, Inspiration	(Wardana et al., 2020; Cui et al., 2021; Burnette et al., 2020; Saptono et al., 2020)
Mindset Skills	Entrepreneurial mindset, Growth mindset	(Daspit et al., 2023; Billingsley et al., 2023)

Source: Developed for the purpose of the study

Professional Skills: These skills are essential for navigating the professional world and include self-reflection, collaborative problem-solving, strategic planning, managing ambiguity, resolution of problems and decision-making, transformational leadership, clear and visual communication, teamwork and networking, and digital communication (Aima et al., 2020).

Technical Skills: Technical skills are specific abilities and knowledge required to perform tasks related to a particular field or industry. In the context of entrepreneurship, technical skills might include identifying business opportunities, being creative in product development, and thinking innovatively to solve complex problems. Financial literacy is also crucial for managing the financial aspects of a business effectively (Colombelli et al., 2022).

Management Skills: Management skills involve the ability to plan, organize, lead, and control resources to achieve specific goals or objectives. In entrepreneurship, careful planning and strategic implementation are vital for launching and growing a successful venture. Entrepreneurs must be adept at managing resources, time, and people to drive their business forward (Blake Hylton et al., 2020).

Social Skills: Social skills are interpersonal abilities that enable individuals to interact effectively and harmoniously with others. In an entrepreneurial context, communication and teamwork are essential for building relationships with stakeholders, collaborating with partners, and leading teams towards common goals (Wongpreedee et al., 2015).

Dr Durdana Ovais   Dr. Richa Jain

Personal Skills: Personal skills refer to qualities and traits that individuals possess and develop to manage themselves and their relationships effectively. These skills include curiosity, self-reflection, confidence, resilience, creativity, initiative, risk-taking, happiness, and gratefulness. Entrepreneurs need these personal qualities to navigate the challenges of entrepreneurship, take calculated risks, and bounce back from setbacks (Ikonen & Nikunen, 2019).

Educational Skills: Educational skills encompass the knowledge, attitudes, and self-efficacy gained through formal education and learning experiences. Decision-making, risk management, attitude, and self-efficacy are critical for aspiring entrepreneurs to develop as they navigate the complexities of starting and running a business (Wardana et al., 2020).

Mindset Skills: Mindset skills refer to the attitudes, beliefs, and perspectives that shape how individuals approach challenges and opportunities. An entrepreneurial mindset emphasizes qualities such as resilience, adaptability, growth mindset, and a willingness to take risks. Developing this mindset is crucial for aspiring entrepreneurs to overcome obstacles, seize opportunities, and achieve success in their ventures (Handayati et al., 2020). These skills are essential for success in the modern, technology-driven world and include critical thinking, communication, collaboration, creativity, adaptability, and digital literacy. In entrepreneurship education, fostering these skills prepares individuals to thrive in a rapidly evolving business landscape (Ghafar, 2020).

4.6 Analysis of key findings from studies

Table 2: Analysis of key findings from studies

Category	Key analysis
Entrepreneurial Skills and Mindset Development Through Education	Simulation games, empathy, arts entrepreneurship education, interdisciplinary approaches, Challenge-Based Learning programs, and growth mindset interventions enhance skills like decision-making, risk management, problem-solving, communication, and teamwork, while also influencing entrepreneurial self-efficacy and attitude.
Role of Entrepreneurial Mindset in Innovation and Problem-Solving	Entrepreneurial mindset, distinct from managerial, offers a competitive edge by fostering people-oriented, purpose-oriented, and learning-oriented mindsets, enabling individuals to introduce innovations into communities.
Entrepreneurial Skills and Mindset in Different Contexts	Successful women waste recycling entrepreneurs exhibit an entrepreneurial mindset that promotes environmental care, learning, and creativity, which positively impacts SMEs' performance through innovation and business alertness.
Impact of Educational Methods on Entrepreneurial Mindset	Intervention methods enhance participants' perception of opportunity identification and creative capabilities, while effective Entrepreneurially Minded Learning activities enhance entrepreneurial behavior and self-efficacy.
Impact of Cultural and Environmental Factors on Entrepreneurial Mindset	Cultural and environmental factors significantly impact entrepreneurial mindset and preparation, with the field of study and ecosystem evaluation positively influencing students' entrepreneurial intentions.
Entrepreneurial Mindset in Poverty Alleviation	- Entrepreneurship offers significant potential as a poverty-alleviation tool.

Source: Developed for the purpose of the study

Dr Durdana Ovais | Dr. Richa Jain

The above table (table 2) helps in consolidating the key learnings of the studies that were under consideration. From the analysis 6 main themes had emerged. Regarding entrepreneurial skills and mindset development through education, it was found by Korte, Smith, and Li (2018), that empathy is a key part of being an entrepreneur because it helps you understand how other people feel, think, and experience things. The study by Wardana et al. (2020) shows that educational factors affect a person's business self-efficacy, attitude, and thinking. In order to help people acquire a creative mindset, entrepreneurship education aims to improve their skills, attitudes, and abilities (Pollard & Wilson, 2014). According to Lindberg et al. (2017), challenge-based learning programs improve the attitude and skills of entrepreneurs, including their ability to plan, be creative, and understand money. To solve complicated problems, we need to use methods from different fields and work together to learn, which encourages self-directed and active participation (Zupan, Cankar, & Setnikar Cankar, 2018). Helping students develop a business mindset, like growth mindset treatments, can boost their confidence in their ability to succeed and keep at their work (Burnette et al., 2020).

The studies aimed at understanding the role of entrepreneurial mindset in innovation and problem-solving it was found that an entrepreneurial mindset is characterized by its potential to generate a competitive advantage over a managerial mindset (Daspit, Fox, & Findley, 2023). According to Subramaniam and Shankar (2020), entrepreneurial leaders cultivate perspectives that are focused on learning, people, and purpose, which empowers them to effectively navigate situations characterized by uncertainty and ambiguity. By recognizing and comprehending the desires and requirements of community constituents, individuals with an entrepreneurial mindset are capable of introducing innovations into their respective communities (Korte, Smith, & Li, 2018).

Asenge et al. (2018) found that the performance of small and medium-sized enterprises (SMEs) is enhanced by the entrepreneurial mindset via inventiveness, originality, and business vigilance. In addition to environmental stewardship, intellectual growth, spirituality, ingenuity, and innovation, prosperous female waste recycling entrepreneurs exhibit an entrepreneurial mindset (Latukismo et al., 2021).

Studied analysing the impact of educational methods on entrepreneurial mindset like that of Hassan et al. (2022) found that entrepreneurial behavior and self-efficacy are both enhanced by EML activities that are truly effective. According to Lindberg et al. (2017), the implementation of intervention strategies has a beneficial effect on the way in which participants perceive the identification of opportunities and their creative capacities.

Sustainableto et al. (2020) in understanding the impact of cultural and environmental factors on entrepreneurial mindset, discovered that entrepreneurial preparation is impacted by cultural and environmental factors that influence the entrepreneurial mindset. Furthermore, a positive correlation was observed between the academic discipline and students' intentions to pursue entrepreneurship, as well as their assessment of the entrepreneurial ecosystem (Gubik & Bartha, 2021).

According to Morris and Tucker (2023), research indicates that entrepreneurship possesses considerable capacity to alleviate poverty, given that individuals living in distress establish both formal and informal enterprises. The significance of education, the cultivation of an entrepreneurial mindset and skills, which are vital for problem-solving, economic growth, and innovation, is underscored by these results. Additionally, cultural and environmental influences are noteworthy in this regard.

5.CONCLUSION:

It is evident, based on the presented findings, that academic interest in the entrepreneurial mindset and skills increased significantly between 2018 and 2020. As evidenced by the increased number of studies conducted over time, interest has increased consistently. While the majority of research on entrepreneurial mindset has been quantitative

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Dr Durdana Ovais   **Dr. Richa Jain**

in nature, exploratory case studies in particular regions or occupations have been the subject of qualitative research. Limited research has utilized mixed methodologies. Education and the analysis of entrepreneurial intent, in addition to the development of an entrepreneurial mindset and set of skills via educational programs, have been the primary focus of these studies.

There is a significant emphasis on acquiring knowledge and comprehending the mindset and skills necessary to be an entrepreneur, as well as the function of education in fostering entrepreneurship. The use of buzzwords such as opportunity identification, risk management, and business expansion demonstrate a pragmatic and psychological approach to understanding the business world.

Following the impact of culture and environment on entrepreneurial aspirations, the educational methods for acquiring an entrepreneurial mindset and set of skills have been a major subject of research. Additionally, there is a focus on comprehending how entrepreneurs develop their skills, the psychological determinants that influence their propensity for taking risks, the consequences of business education, and the pragmatic implementation of these concepts in real-world situations.

A growing interest in comprehending and cultivating the entrepreneurial mindset and skills, with an emphasis on education, psychology, and practical application, is underscored by the reviewed studies. The significance of these factors in promoting entrepreneurship and tackling obstacles in the business realm is widely acknowledged.

The analysis of research studies makes it clear that people who want to be excellent entrepreneurs need to have certain skills. There are many types of these skills, such as career skills, technical skills, management skills, social skills, personal skills, educational skills, and thinking skills. Each of these skills is very important for starting and growing an entrepreneurial mindset and the career success you would like to have Professional skills like self-reflection, working with others to solve problems, effective planning, and clear communication are necessary to get ahead in the business world. To put business ideas into action well, you need technical skills like being able to spot opportunities and understand money. To plan, organize, and lead teams to reach business goals, you need to have management skills. It's important to have social skills like conversation and teamwork if you want to make friends and work with others. Personal skills, like being resilient, creative, and willing to take risks, are necessary to deal with problems and adjust to new situations. The information, attitudes, and self-efficacy that you learn from school are all examples of educational skills. These are very important for people who want to start their own business. Mindset skills, like having a growth mindset and being resilient, are important for keeping a positive mood when facing problems and seizing chances. When someone is an entrepreneur, they often have to deal with doubt and misunderstanding, so these skills are especially important.

The studies suggest that learning these skills through schooling and other situations can greatly improve a person's entrepreneurial mindset and raise their chances of success in business. The value of knowing these influences in promoting entrepreneurship is highlighted by the fact that culture and environmental factors play a major role in influencing entrepreneurial mindset and behavior.

Future Scope: As there has seen that the number of coordinate studies on analysis of 11 of skills, future quantitative studies can be undertaking to analyse the label of these qualities in an individual and methods to develop these excuse in individuals. As our research has led to the identification of skills future studies can be undertaken to analyse pedagogy method to inbuilt these skills. And analyse the impact of these still generations on internal mindset.

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A QUALITATIVE PERSPECTIVE ON THE DIVERSE WORKFORCE OF EMPLOYEES AND SEVERAL CHALLENGES THAT CAN IMPACT THEIR PRODUCTIVITY, JOB SATISFACTION, AND OVERALL WELL-BEING.

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ABSTRACT

In this research we will discuss about the diverse workforce of employees and what are the challenges they face that can impact their productivity, job satisfaction and overall wellbeing. A qualitative analysis about the employees and problems were discussed. This paper discusses about the types workforce and what are type of problems faced and what are the best HR Solutions to improve the condition. The paper discusses about contingent workers—including freelancers, contractors, and temporary workers—face particular difficulties. Human resources (HR) give employee well-being top priority for numerous reasons. Employees who feel healthy and who have support often are more productive. They can work more quickly and concentrate better on their responsibilities. Healthy and content employees are less likely to take sick leave or miss work, therefore saving the business money and lessening disturbance. Greater Retention Rates: Emphasizing well-being might result in more job satisfaction, which would lower turnover rates. Workers are more likely to remain employed with a company that values their welfare. Well-being programs help to increase employee engagement. Better performance and innovation follow from engaged employees' greater commitment to their work and the company. Emphasizing well-being helps to produce a good and encouraging company culture. This can improve general moral, communication, and teamwork. Companies who give employee well-being first priority will draw elite talent. Companies who show a dedication to the welfare and pleasure of their workforce are more likely to attract potential workers. Emphasizing staff well-being will help to guarantee adherence to health and safety policies, so lowering the risk of legal problems and possible liabilities. Addressing mental health as part of well-being programs helps employees to lower stress and anxiety, thereby improving the working conditions. Improved public image results from companies who are perceived as sympathetic to the welfare of their staff, which can help them down road. Although well-being initiatives could have upfront expenses, their lower healthcare expenditures, more productivity, and lower turnover rates will eventually help to pay for itself.

Prof. Sudarshan S   **Prof. Hridayama Dev Varma**

INTRODUCTION:

A workforce that is varied consists of workers with a wide range of backgrounds and traits. These traits may differ in terms of colour, ethnicity, gender, age, sexual orientation, religion, status as a disabled person, socioeconomic background, level of education, and cultural background, among other things. A healthy and effective workforce depends on the well-being of its employees. Prioritizing well-being can benefit the company overall and its workforce in a number of ways. The following are some significant ways that worker well-being affects the workforce:

1. Enhanced Performance and Productivity

Health and Energy: Productivity is increased by employees who are in good physical and mental health since they are more focused and have more energy.

Decreased Absenteeism: Employees in better health are less likely to miss work due to illness, which guarantees steady productivity and performance.

Enhanced Engagement: Workers are more engaged and dedicated to their task, which leads to improved performance, when they feel well-supported.

2. Enhanced Retention of Employees

Job Satisfaction: Workers are happier and less likely to look for work elsewhere if they believe their health and well-being are given priority at work.

Loyalty and Commitment: Organisations that make investments in the welfare of their employees frequently see increases in the loyalty and commitment of their workforce.

3. Reduced Medical Expenses

Preventive care: By encouraging wellbeing and good health, health problems can be identified early and managed, which lowers the need for costly medical procedures.

Decreased Stress-linked disorders: By addressing mental health and stress, the organisation can reduce total health care costs by preventing linked disorders.

4. Improved Culture at Work

Good Work Environment: Promoting employee well-being creates a welcoming workplace where staff members are treated with respect and feel appreciated.

Collaboration and Teamwork: Contented workers are more inclined to work together, which strengthens the bonds and collaboration of the team.

5. Increased Attraction of Talent

Employer branding: Top talent seeks for surroundings that are encouraging and healthy, and companies that are known for their dedication to employee well-being tend to draw in this talent.

Competitive Advantage: Providing well-being initiatives can help a business stand out from rivals and attract top talent.

6. Originality and Hands-on Approach

Mental Clarity: Innovative and innovative thinking are more likely to come from employees who are not overworked or under stress.

Encouragement to Experiment: Employees who work in a supportive environment are more likely to take chances and try new things, which can result in creative solutions.

7. Increased Contentment with Clients

Positive Interactions: Happy employees are more likely to interact with consumers in a positive way, which raises customer satisfaction.

greater Service: Contented staff members frequently offer greater service, enhancing the general clientele experience.

For various linked reasons, job happiness is crucial for companies as well as for employees:

Regarding Staff:

Prof. Sudarshan S   Prof. Hridayama Dev Varma

JOB SATISFACTION

Job satisfaction results in a sense of accomplishment and fulfilment personally. Contentment with their work makes employees valuable and recognized, so improving their general quality of life. Contented workers have reduced stress and anxiety, which can improve both their mental and physical condition. This lessens the possibility of burnout and long-term medical problems. Job satisfaction usually corresponds with chances for professional development. Workers content with their employment are more likely to seek out more growth and embrace challenging tasks. Work-Life Balance: Contentment in the workplace helps one to balance their life. Contentment in their jobs makes employees more inclined to properly manage their time and preserve a good balance between their home life and their employment.

For Businesses

Higher productivity follows from motivated and efficient behavior of satisfied personnel. They are more willing to work hard and extra to satisfy organizational goals. High work satisfaction lowers turnover rates by themselves. Happy employees are less likely to leave, so saving the company the expenses related to hiring and training new personnel. Contented employees are more engaged, displaying more dedication and excitement for their work. Greater degrees of creativity, ingenuity, and problem-solving follow from this. Job satisfaction adds to a good and encouraging working environment. It improves ties among colleagues, therefore enhancing teamwork and cooperation. Employees that feel good about their work are more likely to provide first-rate customer service. Their good attitude can improve client experiences, therefore increasing client loyalty and happiness.

Contented workers typically show lower rates of absenteeism. Their regularity and punctuality help to minimize interruptions and preserve flow by which they operate. Organizations with strong job satisfaction draw top talent, therefore enhancing their reputation. One major competitive advantage in the employment market is a strong reputation as a company. Employment satisfaction can generally result in improved financial performance. A better bottom line results from improved customer satisfaction, less turnover, and higher production as well as from lower turnover. Compliance and Risk Management: Contented workers are less likely to disclose concerns or participate in workplace strife, therefore lowering the risk of legal and compliance issues. Contented workers are more likely to be company champions, therefore advancing its values and goals both inside and outside of the office. This might improve the brand of the company and draw more business prospects.

LITERATURE REVIEW

Rahul Baburao Waghmare (2021). "Workforce Diversity to Foster an Innovation". Diversity in the workforce is important for organizations since it fosters inventive performance in modern ones by embracing diverse viewpoints and ideas and increasing productivity and innovation.

Deepu Kumar (2018) "Workforce Diversity and its Impact on Employee Performance". Workers with a variety of backgrounds, including those in education, religion, and age, make up a diverse workforce. Effectively handling diversity poses a number of obstacles as well as opportunities for improving employee performance within an organization.

Aiman Hasan (2019) "Workforce Diversity: Boon or Bane to the Organization". A diverse workforce has advantages and disadvantages that must be considered for an organization to succeed. Diversity may become a great advantage for the company if it is managed well. Sofía Pérez de Guzmán (2023). "Contingent workers' expectations for a collective voice: between individualism and the need for representation". Faced with obstacles to traditional union participation, contingent workers in Italy and Spain indicate needs for social security and representation; typically preferring individual decisions over group action.

Stefano Bini(2018) "Contingent work is not contingent. Which models of regulation for the

new forms of work". Contingent workers question conventional worker protection. Protecting workers' professionalism in the changing work environment depends critically on creative regulatory measures including soft law and corporate social responsibility. Michael Foley ET AL(2014). "Contingent workers: Workers' compensation data analysis strategies and limitations". The presence of contingent workers presents difficulties in ensuring safety and reporting data accurately, as their different levels of protection and benefits affect workplace safety incentives and the ability to monitor injuries accurately in workers' compensation programs.

M. Ramesh et al(2010). "Job satisfaction and contributing variables among the bank employees in cuddalore district, India". The paper addresses job satisfaction as the final impression of a person following a task, which is shaped by the fulfilment of main demands and compliance with values and expectations. S. Subhashini et al(2014). "A study on job satisfaction among spinning mill workers with special reference to Tirupur district, tamilnadu". The paper addresses job satisfaction as a set of either positive or negative emotions that workers experience regarding their employment. It has bearing on workers' sense of success and accomplishment, output, and personal well-being as well as their The study centres on job satisfaction among Tirupur District, Tamilnadu, spinning mill workers.

Dr. Pechetty Svr Babu(2022). "Job satisfaction as a function of self-efficacy and personal strain among high school teachers in Chittoor district of Andhra Pradesh state of India". Job satisfaction is perceived to be directly linked to productivity and personal well-being, and it is influenced by self-efficacy and personal strain among high school teachers. S. Joseph Xavier et al(2012). "A study on job satisfaction among the academicians across the self financing arts and science colleges in Tiruchirappalli, south Tamilnadu, India". Job satisfaction among academicians in self-financing arts and science colleges in Tiruchirappalli, South Tamil Nadu, India is discussed in this study. It claims that keeping excellent personnel in the company depends much on job satisfaction. It does not, however, include particular information or

conclusions regarding job happiness among the academics.

Subramania Bala Jeshurun (2012). "An empirical study on job satisfaction among employees of spinning/textile mills in Tirunelveli district, Tamilnadu". The study addresses employee performance in relation to the idea of job satisfaction. It says job happiness is influenced by things including compensation, promotion, working conditions, and connections with managers and fellow employees. P. Bhanumathi et al (2014). "Employee Well-Being and Mental Health". Changing employee expectations and job pressure make employee well-being absolutely important. Companies have to create customized plans to handle mental health issues and keep a qualified staff efficiently.

Ranjit Singha (2024). "Nurturing Employee Well-Being and Mental Health". Retention of talent depends critically on employee well-being. The paper investigates how mental health affects workplace dynamics, so providing information for designing better workplaces and future trend prediction.

WHAT ARE THE TYPE OF WORKFORCES IN AN ORGANIZATION

Indeed, a wide variety of job categories now make up the modern workforce. Below is an explanation of each component:

Employees employed full-time are those who normally put in a set amount of time at work (around 35 to 40 hours a week) and are frequently eligible for benefits like paid time off, retirement plans, and health insurance. Typically, they are regarded as the backbone of the workforce.

Part-Time Workers: Compared to full-time employees, these workers usually put in fewer hours. They provide flexibility to both businesses and employees, even though they do not always get the same perks as full-time workers.

Contingent Workers: This group consists of temporary employees, contractors, and freelancers.

Prof. Sudarshan S   **Prof. Hridayama Dev Varma**

They don't have the same job security or benefits as full-time employees because they are recruited for certain tasks or for a little time. Without requiring long-term commitments, this arrangement can offer organizations flexibility and specialized capabilities.

Digital Workers: These are non-human labourers who carry out jobs that humans typically complete, such as robotics and artificial intelligence. They can do data-driven, repetitive jobs, freeing up human workers to concentrate on more intricate and creative work. This combination gives people a range of job opportunities to fit their needs and lifestyles and enables firms to be more adaptable and responsive to market demands.

What are the problems faced by full time workers and what hr can do about it

Issues That Full-Time Employees Face
* Work-Life Balance: Stress and burnout can result from full-time employees' inability to strike a balance between their personal and professional obligations.
* Job Security: In unstable economic times, even full-time employees may have uncertainty about their capacity to keep their current jobs.
* Career Growth and Development: Job discontent and disengagement may result from a lack of prospects for promotion or professional growth.
* Workplace Stress: Lack of resources, tight deadlines, and heavy workloads can all lead to stress and lower productivity.
* Acknowledgment & Recognition: Feelings of undervaluation and demotivation can result from not receiving credit for one's efforts and accomplishments.
* Health & Well-Being: Sedentary work settings and long hours can be detrimental to one's physical and mental well-being.
* Insufficient Remuneration: Workers could perceive themselves as being underpaid or that their pay is not commensurate with their contributions and living expenses.
* Work Environment: Poor morale, increased employee turnover, and poor productivity can result from a toxic or unfavourable work culture.

HR Resources

* Encourage a work-life balance: Encourage taking breaks and vacations and provide remote work choices and flexible work schedules. Make sure that workloads are reasonable and assist staff in drawing boundaries between their personal and professional lives.
* Improve Work Security: Be open and honest in your communication regarding the company's financial situation and future goals. Provide employees with retraining and upskilling opportunities to assist them in adjusting to evolving job demands.
* Encourage Career Development by offering chances for education, growth as a professional, and promotion. To assist staff members in reaching their objectives, provide clear career pathways and mentorship programmes.
* Control Workplace Stress: Make sure employees can achieve their goals without experiencing undue stress by regularly evaluating workloads and providing the required resources. Provide mental health services and stress management programmes.
* Acknowledge and Reward Staff: Put in place programmes that bring attention to the accomplishments and contributions of staff members. Provide incentives based on accomplishment and cultivate a culture of gratitude.
* Encourage healthy lives by providing wellness programmes, gym memberships, and health screenings in order to promote health and well-being. Establish a healthy work atmosphere and provide ergonomic workstations.
* To guarantee equitable remuneration, it is imperative to periodically assess and modify salary packages to guarantee they remain competitive and accurately account for employees' contributions and living expenses. Provide perks that enhance workers' financial security.
* Create a Positive Work Environment: Encourage a respectful, inclusive, and cooperative culture. Deal with any toxicity, harassment, or discrimination issues as soon as possible.

Prof. Sudarshan S   **Prof. Hridayama Dev Varma**

- HR can help full-time employees have a more encouraging, effective, and fulfilling work environment by addressing these frequent problems.

What are the problems faced by part time employees workers and what hr can do about it.

Compared to full-time employees, part-time workers encounter a different set of difficulties. The following are some typical problems and possible HR fixes:

Issues That Part-Time Workers Face

- Absence of perks: When compared to full-time employees, part-timers sometimes do not receive the same perks, like paid time off, retirement programmes, and health insurance.
- Job Insecurity: Part-time jobs may be more susceptible to schedule modifications and layoffs, which could result in unstable and unpredictable finances.
- Limited Career Advancement: Opportunities for promotions, professional growth, and career advancement may be scarcer in part-time employment.
- Inconsistent Schedules: Part-time workers may find it challenging to efficiently manage their time and plan their personal lives due to irregular work hours and schedule fluctuations.
- Isolation from Full-Time Staff: Part-time workers could have a sense of exclusion from the company's culture and lose out on crucial announcements, gatherings, and team-building exercises.
- Perceived Inequity: Compared to full-time employees, part-timers may feel underappreciated or experience unequal treatment.
- Insufficient Training: The performance and job satisfaction of part-time workers may be impacted by their lack of access to the same training and development opportunities as full-time workers.
- Restricted Access to Resources: They might not have as much access to the company's tools, resources, or assistance as they would need to do their tasks well.

HR RESOURCES

- Extend Benefits: Give part-time workers prorated benefits wherever it is practical. This could involve contributions to a retirement plan, compensated time off depending on hours worked, and partial health care.
- Improve Work Security: Draft contracts that are unambiguous about the duties, responsibilities, and duration of the work. Offer possibilities for longer-term or permanent roles to part-time employees and communicate any prospective changes in a transparent manner.
- Encourage the Development of Careers: Provide part-time workers with access to programmes for skill development, career progression, and training. Promote mentorship and offer opportunities for full-time role transitions upon request.
- Provide Consistent Scheduling: Make scheduling procedures more dependable and give workers adequate notice of their shifts. Take into account providing flexible work schedules that take into account workers' personal obligations.
- Incorporate into the Culture of the Company: Invite part-timers to meetings, events, and team-building exercises to help them become a part of the company culture. Make sure they feel included and have access to company communications.
- Encourage Fair Treatment: Make sure that part-time workers are appreciated and acknowledged for their contributions in order to promote an inclusive and equitable work environment. Respond quickly to any impressions of inequality.
- Give Adequate Training: Make certain that continuing and comprehensive onboarding training is provided to part-time employees. Provide them with resources and assistance so they can be successful in their roles.
- Boost Resource Access: Make certain that part-time workers get the equipment, materials, and assistance they require to do their duties well. This can involve having access to office space, technology, and administrative assistance.
- HR may foster a more encouraging and engaging work environment for part-timers by addressing these issues, which will increase their job

Prof. Sudarshan S   **Prof. Hridayama Dev Varma**

satisfaction, output, and retention.

What are the problems faced by contigent workers and what hr can do about it.

- Unlike full-time and part-time employees, contingent workers—including freelancers, contractors, and temporary workers—face particular difficulties. The following are some typical problems and possible HR fixes:
- Issues Contingent Workers Face
- Lack of Job Security: Contingent workers frequently have to make decisions about how long their jobs will last and what chances they will have in the future.
- Limited Benefits: Usually, they are not eligible for paid time off, retirement programmes, or health insurance.
- Contingent workers may experience feelings of exclusion and isolation from team activities, crucial communications, and company culture.
- Workload Variations: Unpredictability and financial stress can result from varying workloads and revenue fluctuations.
- job Development: There can be less chances for training, job progression, and professional development.
- Value and Recognition: Compared to permanent employees, contingent workers may feel underappreciated or that their efforts are not valued as highly.
- Access to Resources: It's possible that they don't have as much access to the equipment, technology, and resources that they need to do their tasks well.
- Legal and Contractual Issues: Conflicts and discontent can arise from misinterpretations of the terms of the contract, payment plans, and employment expectations.

HR RESOURCES

To improve job security, give precise and comprehensive contracts that specify employment requirements, project schedules, and length. Offer longer-term agreements or chances for performance-based renewals wherever you can.

Provide Pro-Rated perks: Consider providing pro-rated access to specific perks, such wellness initiatives, health insurance, and retirement contributions, for temporary employees. Promote Inclusion: Involve contingent employees in team meetings, events, and communications as a proactive means of assimilating them into the company culture. Assure them that they are a valuable member of the group.

As far as possible, try to give employees more regular work schedules and workloads. Keep lines of communication open regarding impending tasks and possible job openings. Encourage Career Development by giving people access to opportunities for skill development, professional growth, and training. Provide networking opportunities and mentorship to aid in their professional advancement.

Acknowledge efforts: Put in place initiatives to recognise contingent workers' efforts. Congratulate them on their accomplishments and offer constructive criticism. Ensure Resource Access: Make certain that contractors get the equipment, software, and assistance they need to do their duties well. Give them access to administrative assistance and company resources.

Make Legal and Contractual Terms Clear: Write thorough, precise contracts that include payment conditions, work requirements, and project deliverables. Keep the lines of communication open so that any problems or complaints may be quickly resolved. HR may help contingent workers feel more supported and satisfied at work by tackling these issues, which will increase retention, productivity, and job satisfaction.

What are the problems faced by digital workers and what hr can do about it.

- Digital workers face particular difficulties that call for careful HR planning, especially those who use automation, robotics, and artificial intelligence. The following are some typical problems and possible HR fixes:
- Issues Digital Workers Face
- Ethical Concerns: Concerns regarding decision-

Prof. Sudarshan S   **Prof. Hridayama Dev Varma**

making, privacy, and job displacement are brought up by the integration of digital workers.

- Job Displacement: Using automation and AI in the workplace may result in job losses or a major shift in the responsibilities of jobs held by humans.
- Skill Gaps: Because of the quick speed at which technology is developing, workers may need to constantly refresh their skills in order to stay employable.
- Combining Human Workers: It can be difficult to ensure that human and digital workers collaborate well.
- Data security and privacy are issues that digital workers must deal with because they handle sensitive data on a regular basis.
- Dependency on Technology: If technology malfunctions or is corrupted, an excessive dependence on digital workers may result in operational weaknesses.
- Fairness and Bias: AI systems have the potential to reinforce biases found in their training sets, producing unfair or discriminating results.

HR RESOURCES

- Handle Ethical Issues: Create precise rules and regulations to handle moral dilemmas with digital employees. Talk openly with staff members about how automation and artificial intelligence will affect the workforce.
- Reduce Employment Displacement: Put in place plans to upskill and reskill workers whose jobs are being automated. In order to assist them in adjusting to new roles, offer training programmes and transition support.
- Fill in the Skill Gaps: To assist staff in staying up to date with technology changes, invest in programmes for ongoing learning and development. Provide online workshops, certifications, and course access.
- Promote Integration: Encourage a cooperative work atmosphere where the skills of human and digital employees can complement one another. Give instruction on the proper use of automation and artificial intelligence tools.
- Improve Data Security and Privacy: Put strong

data security measures in place and make sure privacy laws are being followed. Educate people on best practices for data protection.

- Control Your Dependency on Technology: Create backup plans in case your technology fails. Make sure backup plans and protocols are in place to keep things running smoothly.
- Maintain Fairness and Reduce Bias: Make sure AI systems are trained on a variety of representative data sets and conduct regular audits to check for biases. Create procedures to keep an eye on and deal with any unjust results.
- HR can foster a more harmonic and balanced work environment where human and digital workers may live and prosper by proactively addressing these issues. This strategy maximizes the advantages of technology improvements for the company while also supporting the workforce.

CONCLUSION

HR Strategies to Support Wellness and Health Programmes for Employee Well-Being: Provide physical health-promoting initiatives including fitness centres, wellness challenges, screenings, and nutrition seminars. Support for Mental Health: Make counselling services, mental health days, stress-reduction plans, and mindfulness training accessible. Work-Life Balance: Promote a good work-life balance by offering remote work opportunities, flexible scheduling, and enough paid time off.

A salubrious workplace: Establish a work atmosphere that supports health by including areas for relaxation, wholesome food options, and ergonomic workstations. Acknowledgment and Incentives: Give staff members credit for their accomplishments to encourage gratitude and drive. Professional Development: Provide avenues for people to advance their careers and fulfil their career aspirations. Open Communication: Keep the lines of communication open so that staff members can freely communicate their concerns and general well-being.

Workplace rules should be inclusive and supportive of all employees, considering their varied requirements and experiences. Organisations may

cultivate a thriving workforce that is engaged, productive, and devoted by putting employee well-being first, which will ultimately contribute to the success of the business as a whole. For several reasons, job happiness is quite significant among workers. Contented workers are often more creative. Higher efficiency and productivity follow from their drive to do well and take satisfaction in their work. Employees that are happy with their work are more likely to remain with their employer over a longer term. This lowers hiring and training new employee related expenses as well as attrition rates. Enhanced employee engagement results from job satisfaction. Often beyond their minimum job requirements, engaged employees are more committed in their work and in the success of the organization.

High job satisfaction adds to a favorable work environment. Good relationships among satisfied workers increase their likelihood of improving teamwork and cooperation by means of their influence on others. Contented workers are less likely to be absent from work or take unneeded sick days, therefore preserving production and lightening the load on other team members. Employee satisfaction with their jobs increases their likelihood of offering better customer service. Their good attitude helps to raise consumer happiness and experiences. Employee happiness and satisfaction increase their likelihood of feeling safe and valuable, thereby motivating them to be more creative and imaginative in their jobs. Job satisfaction helps employees to lower their stress. Reduced stress helps to enhance general well-being and lower mental and physical health issues, thereby helping to control healthcare expenses.

High degrees of employee satisfaction usually translate into improved company reputation. This can draw elite talent and provide a competitive edge in the employment scene. Eventually, employment satisfaction might result in improved corporate financial success. The bottom line includes decreased turnover, higher customer satisfaction, more productivity, and less absenteeism. Beyond corporate advantages, professional pleasure is crucial for personal fulfilment. Employees that are content are more likely to feel successful and driven in their work.

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INFLUENCE OF ADAPTIVE MARKETING IN CUSTOMER RETENTION USING DIGITAL NUDGING

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ABSTRACT

Using technology, data, and real-time insights, adaptive marketing customises marketing initiatives to fit particular customer demands and behaviours. This method is particularly successful in digital nudging, wherein digital interfaces gently direct users towards intended actions. This study explores the relationship between adaptive marketing and customer loyalty in the digital commerce landscape. It explores the Nudge Constellation, Quantum Engagement, Trust Event Horizon, and Warp Speed Retention. Digital nudges guide users towards desired actions, but when combined with adaptability, the magic intensifies. Adaptive marketing is a quantum superposition of tactics, impacting engagement metrics like click-through rates and dwell time. Trust is the central focus, and adaptive marketing fuels customer retention through personalised onboarding and loyalty programs.

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INTRODUCTION

Adaptive marketing is a dynamic method in which consumer comments and real-time data constantly shapes marketing strategy and techniques. It uses artificial intelligence (AI), machine learning, and big data analytics among other technologies to provide consumers relevant and personalised marketing experiences.

Adaptive marketing is applied in the following sectors and areas:

- Online stores utilise adaptive marketing to personalise shopping experiences, suggest items, and design focused promotions depending on user preferences and behaviour.
- Brick-and-mortar retailers apply adaptive marketing for tailored in-store experiences including mobile app-targeted promotions, loyalty programs, and real-time inventory changes.
- Marketers use adaptive marketing to instantly maximise digital ad campaigns by changing ad placements, creative content, and targeting criteria depending on performance data.
- Adaptive marketing helps companies respond to consumer interactions, trends, and feedback by customising material and engagement techniques on social media channels.
- Adaptive marketing lets content, timing, and frequency change depending on recipient behaviour and engagement measures, enabling tailored email campaigns.
- Banks and other financial services use adaptive marketing to provide individualised financial advice, product recommendations, and services depending on consumer data and interactions.
- Adaptive marketing allows telecommunications firms to customise offers, service suggestions, and customer support depending on user data and network usage trends.
- Airlines, hotels, and travel agents utilise adaptive marketing to personalise travel experiences, run focused discounts, and enhance customer service.
- Automotive: Using adaptive marketing, car manufacturers and dealers customise marketing messaging, provide individualised discounts, and improve customer relations grounded on user

data.
- Using adaptive marketing, healthcare providers and insurance companies interact with patients with tailored health material, appointment reminders, and wellness programmes.
- Streaming services, media firms, and content creators utilise adaptive marketing to suggest items, personalise user experiences, and involve audiences depending on viewing behaviour and preferences.
- Adaptive marketing is used in educational institutions and e-learning systems to customise course suggestions, material delivery, and engagement techniques depending on student behaviour and development.
- By using real-time data and insights, adaptive marketing—which is generally used across many sectors to improve consumer experiences, raise engagement—and drive better company outcomes—is becoming increasingly important.
- Through encouraging innovation, increasing corporate efficiency, and upgrading customer experiences, adaptive marketing significantly helps the economy grow. Adaptive marketing offers the following numerous strategies to support economic growth.
- Personalising marketing initiatives help companies more effectively satisfy customer requirements and preferences, therefore promoting higher satisfaction and more expenditure.
- Customised offers and promotions inspire more regular buying, therefore increasing corporate income.
- Adaptive marketing lets companies react fast to consumer trends and changes in the market, therefore preserving their competitiveness.
- Businesses can spot and seize fresh prospects more quickly, therefore promoting a more dynamic and competitive market.
- Using cutting-edge technologies like artificial intelligence and machine learning in adaptive marketing forces companies to innovate.
- This creativity affects general company operations, customer service, product development, and marketing only.
- Focusing on tactics that maximise returns helps

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REACH GREATER HEIGHTS

| Prof. Neglur Indrani Sudhindra | Prof. Hridayama Dev Varma | Prof. Surjadeep Dutta |

adaptive marketing to enable more effective distribution of marketing dollars. By cutting waste and using their resources, companies may improve financial results and create economic stability.

- Targeting specific markets and customising consumer interactions, adaptive marketing helps Small and Medium-Sized Enterprises (SMEs) compete with bigger companies.
- As SMEs expand thanks in part to this democratization of marketing techniques, job creation and economic diversification follow.
- Drives Job Creation: As adaptive marketing spreads, so does the need for qualified individuals in data analytics, digital marketing, and technology development.
- In these highly sought-after fields, this demand drives workforce development and generates fresh employment prospects.
- Encouragement of consumer-centric markets via adaptive marketing helps companies to be more sensitive to consumer preferences and demands.
- Greater customer satisfaction and loyalty resulting from this consumer-centric strategy help to drive ongoing economic development.

Businesses applying adaptive marketing may efficiently reach and interact with foreign audiences, therefore broadening their market. This growth diversifies income sources, promotes the world economy, and facilitates international trade. Data analytics helps companies to make wise selections that increase operational effectiveness and strategic planning using which they drive decision making.

Better corporate results and general economic stability follow from this data-driven strategy. Rising company efficiency, consumer spending, and market competitiveness taken together help to drive economic growth. Adaptive marketing enables companies to flourish and expand, therefore supporting the more general economic development.

FUNDAMENTAL IDEAS OF NUDGING

In marketing, nudging is the gently directing or influencing action taken by consumers without thus limiting their freedom of choice. Here is a closer examination of nudging's mechanisms and uses in marketing:

- Choice architecture is the arrangement of decisions' presentation to affect their outcome. In a cafeteria, for instance, arranging better food options at eye level to inspire better eating practices.
- Assuming that many individuals will continue with the default configuration, it is advisable to configure advantageous options like such. For instance, unless they choose not, to automatically enrol clients in a rewards programme.
- Using the actions of others to impact others is known as social proof. Showing that a product is a best-seller, for instance, or stressing favourable reviews will inspire others to buy.
- Making certain material more obvious and unforgettable helps with salience. For limited-time offers, for instance, emphasise them with strong colours or bold typeface.
- Priming: Exposing individuals to specific stimuli prior helps to gently change their impressions and actions. In ads, for instance, utilising pictures of satisfied consumers helps to establish a favourable relationship with the product.
- Anchoring: Offering an anchor—a reference point—that shapes next decisions and assessments. To give the discount additional weight, for instance, show a higher original price adjacent to a lowered price.

LITERATURE REVIEW

- Kristiningsih ji et al (2023) - "Adaptive Digital Marketing Approaches for MSMEs Amidst the COVID-19 Pandemic". Adaptive digital marketing strategies are crucial for MSMEs to enhance resilience, empower consumers, gain market insights, and make informed decisions amidst the Fourth Industrial Revolution and the COVID-19 pandemic.
- Darrell Norman Burrell et al (2023) - "Adaptive Marketing, Management Strategy, and Technology Innovation in Beverage and Hospitality Markets". As evidenced by Sweeter the Juice winery's response to the COVID-19

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GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

Prof. Neglur Indrani Sudhindra   **Prof. Hridayama Dev Varma**   **Prof. Surjadeep Dutta**

epidemic using technology-driven solutions guided by a management consultant, adaptive marketing is modifying strategies to changing surroundings.

- A. Leslie Gunatilaka (2023) - "The Adaptive Marketing of Penny Dreadful: Listening to The Dreadfuls". In "The Adaptive Marketing of Penny Dreadful," adaptive marketing—that is, Showtime matching methods with fan ideas from social media—improves engagement and innovatively approaches television marketing.

- Caroline Kalil Reimann et al (2022) - "Adaptive marketing capabilities, market orientation, and international performance: the moderation effect of competitive intensity". Adaptive marketing is the ability of companies to evolve with the times using vigilant learning, experimentation, and open marketing, therefore improving international performance, particularly in competitive conditions.

- Irina Petlin et al (2022) - "Scientific and methodological approach to the evaluation of adaptive marketing strategy of hotel enterprise enterprises". As the research on hotel sector marketing strategies indicates, adaptive marketing is modifying strategies depending on internal and external analysis to satisfy changing market conditions.

- Sayan Putatunda et al (2023) - "A BERT-based Ensemble Approach for Sentiment Classification of Customer Reviews and its Application to Nudge Marketing in e-Commerce". Using sentiment analysis of consumer feedback, nudge marketing—a subtle tactic for e-commerce firms—allows them to lead consumers towards better decisions without coercion.

- Evan Polman et al (2023) - "Nudges Increase Choosing but Decrease Consuming: Longitudinal Studies of the Decoy, Default, and Compromise Effects". As shown in longitudinal studies on the decoy, default, and compromise effects, nudging marketing influences decisions but may over time lower consumption.

- Viktor Ivankovic et al (2022) - "Market nudges and autonomy". In for-profit environments, market nudges might overwhelm individuals because of their uncontrolled character and stacking effect, therefore possibly affecting autonomy. Suggested to solve these issues are policy actions.

- Ajay Kumar Kadiyala (2022) - "Is Digital Nudging an Ethical Marketing Strategy?" Digital nudging is a marketing tactic based on smartphone apps meant to gently steer consumer behaviour. The study investigates its ethical consequences from consumer viewpoints, therefore addressing its acceptance as a marketing strategy.

- • Alice Gimblett (2019) - "Nudging responses to marketing emails: Evidence from London Fireworks Campaign". As the London Fireworks Campaign study shows, "nudge marketing involves using behavioural triggers like specificity, social proof, and reciprocity to enhance email response rates."

- Blake M. DiCosola, Gina Neff (2022) - "Nudging Behavior Change: Using In-Group and Out-Group Social Comparisons to Encourage Healthier Choices". According to the paper, "nudge marketing in health choices involves using in-group and out-group social comparisons at checkout to encourage healthier decisions."

- Mark Passera (2011) - "Nudge this: behavioural economics & political marketing". Using behavioural economics, nudging marketing gently influences choices. Emphasising prejudices and heuristics to properly guide decisions, it questions the presumption of reason.

ADAPTIVE MARKETING: HOW IT HELPS IN NUDGING

Using real-time data, analytics, and customised tactics, adaptive marketing responds dynamically to changing market conditions and specific customer behaviour. It's a great strategy for improving customer retention and gently influencing behaviour. Adaptive marketing helps in various spheres as follows:

- Encouraging Customer Action

Prof. Neglur Indrani Sudhindra   Prof. Hridayama Dev Varma   Prof. Surjadeep Dutta

- Adaptive marketing customises material and offers depending on particular client preferences, behaviour, and past encounters. This personalising raises the possibility of guiding consumers towards desired behaviour, such signing up for a service or completing a purchase.

- Analysing market trends, rival pricing, and consumer behaviour in real time helps companies dynamically change prices to inspire purchase. This might inspire urgency or offer quick incentives meant to prod consumers to behave.

- By means of data-driven insights, companies may pinpoint pivotal points in the customer journey to deliver focused messages or offers, therefore acting as behavioural triggers. For instance, an instant follow-up email including a discount voucher can prod a buyer who leaves their cart to finish the purchase.

- Adaptive marketing is the constant testing of several approaches to identify the most successful one. A/B testing allows companies to hone their strategies and find the best means of nudging consumers.

- Improving Client Attachment- Adaptive marketing guarantees that consumers get relevant and customised experiences, therefore enhancing their level of happiness and loyalty. Customised recommendations, tailored materials, and bespoke offerings help clients to feel important.

- Predictive analytics—using customer data analysis—allows companies to forecast future actions and pinpoint clients in danger of attrition. This makes it possible to keep consumers involved through proactive initiatives including tailored retention campaigns.

- Real-time Engagement-Adaptive marketing lets real-time engagement happen across email, social media, mobile apps, etc. Responses to consumer behaviour and timely encounters help to strengthen bonds and retain clients by means of time.

- Gathering and evaluating client comments allows companies to better grasp their wants and problems. This input is used in adaptive marketing to constantly enhance goods, services, and client contacts, thereby raising general satisfaction and retention.

- Adaptive marketing makes loyalty programmes more relevant and tailored, therefore improving their value. Customised rewards and recognition depending on personal preferences and behaviour help to keep consumers by increasing the efficacy of these initiatives.

- Businesses may build a more interesting and rewarding customer experience by always adjusting to consumer behaviours and preferences, therefore increasing retention rates and improving nudging towards desired activities.

All things considered, adaptive marketing is a great instrument for economic growth because of its capacity to personalise consumer experiences, maximise resources, and inspire invention. Adaptive marketing enables continuous economic development and success by improving firm performance and creating a dynamic market environment.

NUDGING APPLICATIONS IN MARKETING

- Email campaigns use customised content and subject lines to raise open and click-through rates. Including social proof—like "Join thousands of satisfied customers"—can prod them to interact.

- Using choice architecture in website navigation will help users towards intended activities, including newsletter registration or purchase completion. For instance, make use of unique call-to-action buttons.

- Using past behaviour to guide individualised product suggestions derived from data. This improves the shopping experience and encourages consumers towards more purchases as well.

- Simplifying the checkout process and hence lowering friction will help to lower cart abandonment. Giving orders exceeding a specific amount free delivery can encourage consumers to put additional goods on their cart.

Prof. Neglur Indrani Sudhindra   **Prof. Hridayama Dev Varma**   **Prof. Surjadeep Dutta**

- Creating loyalty programmes using nudges to inspire regular participation is a challenge. Showing consumers that they are moving towards the next incentive, for instance, can inspire further purchases.
- Time-limited offers and scarcity messages—e.g., "Only 2 left in stock!"—help to generate urgency and drive consumers towards quick response.

GOOD NUDGING EXAMPLES

- Amazon encourages further purchases with nudging strategies including "Customers who bought this item also bought...." They also build urgency with scarcity signals like "Only 3 left in stock."
- Personalised suggestions based on viewing behaviour from Netflix are a kind of nudging, urging consumers to find new content they are likely to appreciate, thereby keeping them involved on the platform.
- One classic example of nudging is arranging impulse-buy products like candy and magazines next to the checkout stations. The ease and visibility encourage consumers to buy last-minute.

In marketing, nudging is a subtle yet effective approach that lets companies shape consumer behaviour in a way that feels natural and nonassuming. Understanding and using nudging ideas will help businesses develop more successful plans that increase involvement, conversion, and client loyalty.

CONCLUSION:

Digital nudging is a strategy that helps companies provide personalised, engaging, and fulfilling customer experiences. It involves sending tailored emails, alerts, and messages based on a customer's past behaviour, preferences, and interactions. This can lead to increased customer retention and repeat business. Behavioural notifications, such as reminders about remaining items in a customer's basket, can encourage customers to complete purchases. An improved user interface can also enhance customer satisfaction and loyalty. Quick interventions, such as chat windows or comments, can help prevent turnover. Gamification and loyalty programs can boost involvement, while instructional materials can improve the consumer experience. Social evidence and community development can foster loyalty and belonging. Continuous value transmission ensures engagement and continuous value. Examples of digital nudging include e-commerce, SaaS platforms, and reminders about renewals and membership benefits. Overall, digital nudging can help companies build long-term loyalty and retention.

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INNOVATIVE MECHANIZATION IN POSTAL SERVICES
A Preliminary Data Assessment of Northwestern India

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ABSTRACT

The paper presents the compilation assessments, made after examining its different aspects, as follows:

Purpose: To preliminarily associate operations, analysing utility, and suggest reform ideas.

Methods: The paper is a qualitative one, with a primary focus on conducting descriptive analysis based on field visits. Initial field screening was held in stated regions of northwestern India

Key findings: Delhi circle held that the Mechanization of process may help in postal operations in handling high traffic. Haryana circle had the approvals delays as the key issue, that needs development. Himachal and Punjab circle had the shortage of staff and illiterate customers.

Conclusion: Future is prospected to minimize human involvement with lesser physical presence of customer and seller. Self-vending machine may go successful, but teller is needed.

Suggestions: Addition of more offices, staff and counters, with specialised training and counselling may help. Practical operability and reach using thermal or solar heating equipment, drone and Heli taxi can add. Extension on demographic and psychographic dimensions of products in other circles and across nation can add for the betterment of commercial portfolio of the department.

Implications: The study results are only confined to department of posts or the comparative sectors. The paper discusses the necessity of implementing mechanization and technological advancements to improve efficiency. The study emphasizes potential areas for startups to introduce innovation. It emphasizes the societal significance of postal services. Regarding the environmental aspect, the proposal to utilize solar equipment is an ecofriendly practice.

Keywords: Automation, Postal Services, Preliminary Data Assessment, North-Western India, Literacy.

INTRODUCTION

India Post is offering a strand of services, which helps in covering and developing different aspects of communication facilitation and financial inclusion since last two centuries approximately through its network of 0.15 million POs. Regardless of various initiatives offering entire assurance specially within the rural regions, inclusion is not so successful, bearing many field limitations and regional anomalies. To become the leader big challenge amid acute technology competition in this regard, is focusing the users' desires effectively at their doorsteps. To assist that, Infosys has been selected by IP for an application to enhance India public's financial services across 150000 POs. For the assignment, it assisted IP in complete machine integration, facts migration and system deployment and solutions throughout all identified POs, helping multi-year offerings utility support and infrastructure operations, training +35000 IP employees. Speaking on this deal, AS Prasad, DDG, economic services, IP said, "this transformational software is predicted to adorn IP's enterprise" (Infosys newsroom). Darpan Project, a part of larger IT modernisation project, will increase the department's rural reach (India Post, 2017). Looking on IP innovations and the ground hindrances, this paper presents a basic enumeration of key aspects observed of department of posts in the stated regions of northwestern India.

LITERATURE REVIEW

A limited literature was available on post offices and other relevant aspects. The few initial studies found were observed done as follows:

Jain, Morris, & Raghuram (2001) examine troubles around IP. Moves of IP were noted. Palacios, & Sin (2001) found the demanding situations of old age savings in India. They could device solution for modern-day individual's underneath pressure. World Bank (2002) counselled that IP is particularly nicely positioned to address the pressures of a changing surroundings by expanding services into non-traditional regions along with e-banking, e-authorities and e-trade.

Raghavan (2005) highlighted on PO savings bank as one of the largest pension distributor and largest life insurance company. As per him, challenges confronted are routine deficits, restricted capital expenditure, the preponderance of workforce

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| Prof. Rohit Kanda | Prof. G.S. Bhalla | Prof. Gunmala Suri |

expenses, a negative internetworking ratio, lagging circles, flawed costing strategies, and non-economic pricing.

Ranganathan (2005) stated that with the net, cellular telephone network revolution posing the risk of making the letter mail out of date, postal monopolies throughout the sector are in process of restructuring and/or privatization. The study has been targeted on identifying the motives.

Hari Sundar, & Jacob (2009) attempts to study endowment in Cochin district. The examiner exhibits the reality by PO maximum discount functions.

Subrahmanian (2010) highlights the importance of training of personnel in DOP. The focal point is on edification to improve pleasant motion and continuous development, he adds.

Planning commission (2011) have emphasized the want of the modernization of IP. The improvement in IP suggested by tips thru specialists.

Aggarwal (2012) looks at the various factors which focus on influencing the traders to invest many of the distinctive financial saving schemes of the POs. Instructions has an enormous effect at the saving. Malakar (2013) looks at the function played via IP in monetary inclusion and the challenges before the IP in supplying banking services, using discussions with officials of IP. He acknowledged that IP served Indian villagers as a banker lot earlier than monetary inclusion turn out to be buzzword and IP claims to be the pioneer of monetary inclusion in India.

Samal (2013) put forward that due to great use of digital media, more worrying clients, presence of courier, economic establishments, and challenges of globalization, corporatization and liberalization, PO must take the right steps for its survival. He highlighted business improvement, IT modernization, and service improvement, to be taken by the IP. Giri (2014) discusses the situation of economic services and technology modernisation. It also highlights the opposite generation driven offerings of the

Pondicherry postal division.

Potadar, M., Mehta, & Potdar, S. (2015) look on the extra demanding situations, IP may have. IP becomes the immediate enterprise eliminating market stress and locate itself efficaciously.

Birajdar, & Joshi (2016) specializes in excellence of offerings that are provided by IP. They point out the importance of maintaining the service for extended client pleasure.

Kanda, Bhalla, Bansal, Kaur, and Bhalla, Guneet S. (2021) observed the consumer acceptance and use of information technology in Indian postal services. They observed failure handling having the most impactful effect on brand value, loyalty and related factors. Kanda, and Bhalla (2021) assessed administrative efficiency of employees of Indian post offices. They found that there is a considerable impact of work flexibility on employee satisfaction.

Kanda, and Bhalla (2021) explored on customer satisfaction of users of Indian post offices. As per them, failure handling has a more detrimental impact on make worth and allegiance. Kanda, et. al (2021) referring tourism related perspectives of India post regarding the post offices located in the tourism hotspots, presented a perspective regarding the post offices located in the tourism hotspots. They recommended that how the scenario can be strengthened. Bhalla, Shukla, and Kanda (2022) assessed on the role of Indian postal services amid covid-19 in north India. They appreciated the adequacy, dynamism and turbulent support the postal services rendered. Dobrodolac, Lazarevic, and Jovcic (2024) proposes integrating the concept of shared mobility into the postal delivery system, by that expanding the existing assortment of services.

RESEARCH GAP

Assessment dialogue tells that least observe is available on northwestern India. Only a few studies in international context have been found held in practice. While, referring to the actual studies in

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Indian context, only four studies have been observed held on, where the earlier three were held by some prior authors, while the latter fourth one is held by the present author itself. Coming to a grassroot assessment of in specific department, significant gap is there.

RESEARCH OBJECTIVES

* To preliminarily assess and associate factors of operations of postal, banking and other services at PO.
* To analyse the product utility amid provider, intermediaries, users w.r.t. entrepreneurs and startups.
* To summarize reformatory suggestions to facilitate further development of public and business.
* Accordingly, the purpose of this study is to preliminarily assess and associate the basic factors of operations, analysing the product utility of the products, and to summarize reformatory suggestions.

RESEARCH METHODOLOGY

The paper is a qualitative one, with a primary focus on conducting descriptive analysis based on field visits. Initial field screening was applied as an instrument of initial enquiry towards the aspects. It helped us to understand and observe the consumer preference and staff view for the different set of postal services and products. It also helped us to observe the agent views. It was held in Chandigarh, Delhi, Shimla, Ludhiana, using depth interviews. It was undertaken using the predesigned multiparty interview schedule for the purpose, filled based on conducted depth interviews. In the Initial Field Screening, under the Initial Field Screening, the researcher performed a line by line transcribe of the interviews and the transcribed document was running into pages. All the transcribed statements were retained relating to the same concept and were worded differently. As per the grounded theory (Strauss, & Corbin, 1990), each statement was categorised under respective concepts (Ollapally, 2015).

ANALYSIS & DISCUSSION

As per the principles of grounded theory (Strauss, & Corbin, 1990), each statement collected in field visits was categorised under respective concept (Ollapally, 2015). Initial field screening was held in different offices of Delhi, Himachal, Haryana and Punjab Circles as follows:

1) Delhi Circle

Delhi, officially Delhi NCT, is a union territory and the federal capital (MLJ, 1991; Habib, 1999). The entire NCT's populace was 16.8 million in 2011 (City Population), with Delhi urban being the world's second biggest urbane (United Nations, 2016), inhabited since the 6 Century BC (Asher, 2000), and emerged critically after 1900's becoming global corporate and economic centre (NCRPB) as second wealthiest metropolis, and home to 23000 millionaires and 18 billionaires (Global Data Lab). The federal and local authorities administer the New Delhi mutually, under the ambit of the planning board act 1985 (NCRPB). We visited Meghdoot Bhawan (CPMG, Delhi Circle) on 11/2/2020. In post, high traffic is observed there. Mechanization of process may help. In savings, it is looking for developments.

Delhi NCT

Gole market was built by Edwin Lutyens in 1921 (ANI, 2023), where Gol Dak Khana GPO is 800 meters from it, designed by Robert Russell in 1931 (ANI, 2023). We visited Gol Dak Khana (New Delhi HO) on 11/2/2020 and 25/2/2020. In postal segment, user look mostly for speed, parcel, and registered post. In savings products, user purchase in bulk, having all secured. Insurance is only for government employees. The building is an old heritage structure, that needs conservation and restoration.

We visited the infamous Dak Bhawan, Department of Posts at Sansad Marg, formally housing Sansad Marg HO and National Philatelic Museum on 25/2/2020. In postal segment, user look mostly for speed, parcel, and registered post. In savings products, user purchase in bulk, having all secured. We visited Kashmiri Gate GPO on 8/2/2020. In postal segment,

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in staff view, parcel, bulk, registered, speed post and philately are taken. In savings, in agent views, FD, pensions, motive-based saving are taken.

Ambala

Ambala cantonment has a large military base and the air force. Its geographical position makes it critical in local tourism. We visited Ambala cantonment HO at Staff Road on 7/2/2020. In postal segment, speed, registered, parcel post, post card and stamps are taken for. In savings, TD, saving, Atal pension, and Sukanya are mostly taken. Insurance is being promoted for professionals now. Rural computerisation in vast stretch is a strength. Customer look in utility, trust and security. We visited RMSD Ambala cantonment on 3/2/2020. In postal segment, speed, registered, ordinary and parcel post are taken for. We visited SSPO, Ambala division situated at upstairs Ambala cantonment GPO on 19/3/2020. For postal services,

Prof. Rohit Kanda	Prof. G.S. Bhalla	Prof. Gunmala Suri

user look speedy, authentic and cost savvy service / products. For savings products, user seek full-fledged banking.

Panchkula
We visited Panchkula SO on 06/10/18. In postal segment, post is a reliable, cost and time efficient solution for users. In savings, interest and convenience are the product USPs.

Rohtak
We visited Rohtak HO on 25/2/2020. In postal services, user look for optimum time, charges, brand, safety and authenticity. In savings products, user seek brand and convenient solutions.

Gurugram
Gurugram is the most populous city in Haryana. We visited Gurgaon HO on 11/2/2020. In postal segment, speed, registered and parcel post are preferred with no effect of courier. In savings, time deposits, and small saving account are looked for. Insurance is being promoted for professionals verbally. Customer view look in brand and security of funds. Self-vending machines can work well.

Panipat
During the 8th battle of terrain, Ghori defeated Prithvi Raj here (Deshwal, 2004). We visited Panipat HO on 26/2/2020. In postal services, user look for optimum time, charges, brand, safety and authenticity. In savings products, user seek easy, in close proximity, brand and convenient solutions. Insurance is not so popular.

Hissar
We visited Hissar HO on 28/2/2020. In postal services, user look for optimum time, charges, safety and authenticity. In savings products, user seek brand and convenient solutions.

3) Himachal Pradesh Circle
According to Puranas, Himachal Pradesh is the Jalandhar Khand and Kedar Khand, known as "Dev Bhumi" to the ancients, and located in the Western Himalayas (Balokhra, 2007), with the society is divided into castes and sub-castes. We visited CPMG Himachal Pradesh office and officials at Kasumpti, Shimla on 14/2/2020. In postal segment, postal services are the preferred product options, given vast reach everywhere. In savings, saving products are preferred mostly in rural markets.

Shimla
Shimla was the spring capital of British and became capital of East Punjab and Himachal consecutively (Chauhan, 2019). The city hosted the 1972 Shimla agreement. We visited Ambedkar Chowk PO, Shimla GPO and SSPO office, Shimla division on 13/2/2020. In postal segment, there is good response for all services bearing vast network in hills. In savings, voluntary training and information is usually provided to agents. Insurance is very efficient for government employees. Customer look in authenticity, safety, brand repute, security of investment and all place delivery. We visited SSPO Shimla. We visited Kasumpti SO, Chotta Shimla PO and Summer Hill PO on 14/2/2020. In postal services, speed, parcel and registered post are preferred.

| Prof. Rohit Kanda | Prof. G.S. Bhalla | Prof. Gunmala Suri |

Kullu Manali

Kullu is called the valley of gods and thus every village has its local deity (Balokhra, 2007). There are various places of interest in the vicinity. We visited Kullu HO on 15/1/2020. Things were up to mark.

Mandi

Mandi is a town on the banks of river Beas (Balokhra, 2007: Chapter :5 – Cultural Heritage, P. 158). We visited Mandi HO on 18/1/2020. For postal services, parcel noted was used mostly.

Dharamshala

Dharamshala was declared the second capital of Himachal Pradesh by CM Virbhadra Singh on 19 January 2017. We visited Dharamsala HO on 12/1/2020 and 13/1/2020. For postal services, article

safety and timeliness are a matter of preference, to the customers and users. For savings, products are good much looked for, along with other options sold in region by competitors.

Kanghra

Kanghra, the highest populated in Himachal, had Katoch as the oldest Dynasty (Balokhra, 2007). Kanghra, Hamirpur, Kullu, Lahul and Spiti formed Kanghra district of undivided Punjab (Kumar, & Kundal, 2016). We visited Kanghra HO in Himachal Pradesh for the first time on 31/08/19 and 12/1/2020. For postal services, things were up to mark with parcel used mostly along with post. For savings products, consumption is moderate by the users, along with utilisation of banks.

Dalhousie

Dalhousie, named after the viceroy Lord Dalhousie, is having a large church (Balokhra, 2007). We visited Chamba GPO on 13/01/2020. In postal segment, scarce population that is far flung, use ordinary post mostly. Customer view selling through branch correspondent and postman helping.

Una

Una district is home to the holy shrine of Chintpurni. We visited Una HO and SSPO office on 15/1/2020. In postal segment, there is good response for all services bearing vast network in hills. In savings, voluntary training is provided to agents. Customer

look in security and delivery.

Hamirpur

Jwala Mukhi sanctum, dedicated to the goddess Jwala was visited by many eminent personalities. We visited Hamirpur HO on 26/08/19. In postal segment, bearing scarce population and a far-flung location, people use ordinary post mostly. In savings, small saving scheme is opted by rural females.

4) Punjab Circle

In the modern history, the word Panjab has been first quoted by Mughals, later seen the rise of Sikhism (Goraya, 2010), with a parallel existence of the

Prof. Rohit Kanda   **Prof. G.S. Bhalla**   **Prof. Gunmala Suri**

British (Chauhan, 2019). The period followed the fall of Punjab as a province of British, where the British made Gulab Singh, king of Kashmir (Dhar, 1977) and took Koh-e-Nur to London (Chauhan, 2019). With 1947 partition, Simla became the capital of East Punjab (Deshwal, 2004). Later, reorganization commission merged hill areas into Himachal (Balokhra, 2007) with rest divided among a Hindu Haryana and Sikh Punjab (Chauhan, 2019). The period from 1980 to 1991 had terrorism activities (Balokhra, 2007; Chauhan, 2019). The Punjab circle constitute of Indian Punjab and UT Chandigarh. We visited CPMG Punjab at Chandigarh on 12/2/2020. In postal segment, speed, registered, parcel post are the preferred products. Insurance is being promoted for professionals.

Chandigarh

Chandigarh capital region includes Chandigarh, Panchkula and Mohali. We visited Chandigarh GPO on 08/10/18. In postal segment, people go for speed and regd. In savings, SB, TD and NSC are looked.

Ludhiana

Ludhiana is Punjab's largest metropolis with an envisioned population of 1618879 as of the 2011 census (www.smartcities.gov.in). We visited Ludhiana HO on 6/2/2020. In postal segment, speed, parcel, registered post and stamps, with time and safety are sought. In savings, Sukanya, cumulative TD, small savings are taken for. Insurance is being promoted for professionals. Customer look in convenience and suitability. Competitors for financial products have advertised. We visited RMSD Ludhiana then.

Jalandhar

We visited Jalandhar HO on 11/1/2020. For postal services, things were observed going on. For saving products, mobile banking, investment security and high interest rates are core USP. Insurance products introduction for common professionals is there. Customer view postal services as preferred.

Amritsar

Amritsar is recognized for its wood chessboards, and chess portions producing industry. We visited Amritsar GPO on 20/08/18 and 10/1/2020. For postal services, it was observed that e-resources may not work as some literacy problems may exist in coming future as such. For savings products, it was reported a low hassle

| Prof. Rohit Kanda | Prof. G.S. Bhalla | Prof. Gunmala Suri |

solution, with higher interest rate and full security instead of banks.

Pathankot

Pathankot is located the intersection of Jammu and Kashmir, Punjab and Himachal Pradesh. Nurpur state founded by Jhetpal in about 1000 AD, had capital at Pathankot (Balokhra, 2007). We visited Pathankot Rural SO on 31/08/19. In postal segment, regd. post is looked.

RESEARCH FINDINGS

Opinions and statements of IP officials in the northwestern Indian regions had following findings: Delhi: Problems faced on selling front is having the high traffic, with most footfall constituting lesser educated migrant population, in an old condensed premise.

Ambala: Only parking seems a limitation. Rural computerisation in vast stretch is a strength. Being a public utility, expenses are more than receipts, causing deficit. Self-vending operations may help. Gurugram: Problems faced on selling front is excess workload in NCR region. Problems faced on resource front is infrastructure renovation and land area redundancy. Shortage of staff was observed.

Kanghra: Problems faced on the resources front are on material supply sometimes, being harsh terrain.

Ludhiana: Competitors for financial products have advertised superior and extensive in locality to give strong competition and grab customers. Insurance is being promoted extensively for professionals.

Amritsar: Postal products were observed having an authoritative staff. High crowd is selling front problem having limited number of staff. Resource front problem is old infrastructure and equipment.

Discussion

Previous literature does cite slightly similar results and circumstances on the limited literature available for reference, with limitedly relevant solutions to the explored problems. Only a few studies in international context have been found held in practice. While, referring to the actual studies in Indian context, only four studies have been observed held on, where the earlier three were held by some prior authors, while the latter fourth one is held by the present author itself. Coming to a grassroot assessment of in specific department, significant gap is there. Hence, this study made a significant contribution as a full-fledged grass root field examination, covering some of the past gap.

CONCLUSION

Future is prospected to minimize human involvement with lesser physical presence of both parties. Self-vending machine may go successful, but teller is needed given the rural and illiterate populace.

CPMG Delhi Circle had the following observations. Mechanization of process may help in postal operations in handling high traffic. Problems faced on selling front are regional offices ignoring the directions. Problems faced on resource front is internal will lacking for improvement.

CPMG Haryana Circle had the following observations. In postal segment, consumer look for speed, registered post and philately specifically. In savings, consumer go for TD, small saving account. Insurance is limited for government employees only. Problems faced on selling front are high traffic and literacy differences among regionalities. Problems faced on resource front are the government / departmental approvals delays, that are needed to have major developments. Customer look in convenience, price, authenticity, safety and security in products. Gurgaon PMG had the following observations. In post, speed, parcel, and registered post are sought after. In savings, TD taken much.

CPMG Himachal Pradesh Circle had the following observations. In postal segment, postal services are the preferred product options, given vast reach everywhere. In savings, saving products are preferred and taken extensively, mostly in rural markets. Insurance is being promoted for professionals. Infrastructure and resources are up to

Prof. Rohit Kanda   **Prof. G.S. Bhalla**   **Prof. Gunmala Suri**

mark at CPMG, with some management issues. Inner location in hilly terrain may be a slight hindrance. Shortage at regionality level may be there, resource updating is limited in remote locations. As noted by a senior official of CPMG, 2 H.O. are accessible by air at large.

CPMG Punjab Circle had the following observations. In postal segment, speed, registered, parcel post, and philately are the preferred products. In savings, TD, SB, KVP, MGNREGS are preferred. Problems faced on selling front are shortage of staff and illiterate customers in regionality. Customer looks in comfort and brand repute, while choosing the product. A dynamic management style is there.

RECOMMENDATIONS

The compilation provides us a comprehensive account of the characteristics of the study and the interpretation of results was made using the facts. The study results are useful to departments of posts and its such other competitors and contemporaries in India and abroad. Specific recommendations are:
Timely solutions, authenticity, paperless procedures and minimum effort functions to be focused much. Addition of more offices, staff and counters, with specialised training and counselling should be there. Himachal and Punjab circle having approvals delays, needs to have early developments responsibly. Practical operability and reach using solar heating equipment, drone and Heli taxi needs to be worked.

IMPLICATIONS

The paper discusses the necessity of implementing mechanization and technological advancements in postal services to improve financial efficiency and enhance service delivery. It emphasizes potential areas for startups to introduce innovation in postal services, including self-service vending machines and automated teller systems. Suggested solutions will also have many positive benefits for the environment, including lesser pollution, renewable energy utilization, and low fuel ingesting.

LIMITATIONS

The study results are only confined to department of posts in India with special reference to northwestern India, or in comparison with the relevant competing industries and sectors in India and abroad, given the similarity of economy, social environment and such other factors.

FUTURE RESEARCH

An extension on demographic and psychographic dimensions with particular reference to individual products in specific regions, circles and national level, using a structured randomized study would be a fruitful extension. Same can be held with the postal and rural finance department of other international economies to test about the similarities and variations.

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Prof. Rohit Kanda	Prof. G.S. Bhalla	Prof. Gunmala Suri

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ASSESSMENT OF THE EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION IN THE PUBLIC INSTITUTION OF WEST HARARGE ADMINISTRATIVE ZONE, OROMIA REGION, ETHIOPIA

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ABSTRACT

This study aimed to assess the effect of service quality on customer satisfaction in the selected public service sector of the West Hararge zone. To achieve the objective of the study, a explanatory research designs was used. Regarding to research approach, researchers used both quantitative and qualitative. This study was conducted using 384 respondents, which was selected using convenience sampling techniques customers of selected public sectors of West Hararge zone. Both primary and secondary source of data were used. The necessary data was collected from the respondents through questionnaires and interviews. The collected data was analyzed using the Statistical Package for Social Sciences (SPSS) version 24 and its outputs using descriptive and inferential statistics. The study has found that all service quality dimensions (Empathy, Assurance, Tangibility, Responsiveness, and Reliability) affect customer satisfaction. The study also identified the major challenges of public service delivery of public sectors. These were summed up into to lack of skilled and experienced leaders and managers, structural and technological problems, behavioral and ethical problems, and budgetary concerns. Finally, the study recommends that public sectors should enhance customer satisfaction by enhancing tangibles, responsiveness, assurance, empathy, and reliability. To do so, they have to be equipped with leadership skills, resources, technological adequacy, and behavioral and ethical adherence.

Keywords: Customer satisfaction, Empathy, Assurance, Tangibility, Responsiveness, Reliability, and service quality

Prof. Nehawi Mohammed Jemal

1 INTRODUCTION
1.1 Background of the Study

The service industry is among the highly dynamic industries as customers often demand change (Smith, 2007). Demand changes drive the service provision and delivery forward with increasing demand for quality service. Since services are intangible in nature their success and failure are not easily quantified (Minazzi, R, 2008). The success of any service-providing organization can be measured in terms of its customer's attitude towards the service delivery activity; which means that service quality is the dominant element in customer's evaluations of a given service (Awoke, 2015).

Customer satisfaction is about relationships between the customer, product, or service as well as the provider of a product or service(Giese J, 2000). Customer satisfaction is a highly personal assessment that is greatly influenced by individual expectations (Girum, et al., 2018). Quality in service is very important, especially for the growth and development of service sector business enterprises (Sachdev SB, 2004).

Service quality delivery is becoming a global concern that demands continuous reform to fit the turbulent environment and changing customer needs. Effective service delivery is now a prominent agenda of most countries including Ethiopia (Teshome, Z.,2020). The demand for effective and efficient delivery of services requires fundamental change involving both institutional and cultural changes. Hence, measuring the level of satisfaction indicates how successful organizations are at providing services, and is taken as the effective outcome measure. (Zewdu T., Behailu B., Girma G. and Muluken M., 2020). Therefore, this study aimed to assess the effect of service quality on customer satisfaction in the selected public service sector of the west Hararghe zone.

1.2 Statement of the problem

Public organizations have responsibility and accountability for delivering efficient and effective services to communities and societies as customers. Though public service institutions, nowadays, have an ever-increasing demand to deliver the best services and improve efficiency relatively compared to previous times, demands are changing in their quality requirements in the government and private sectors (Alemseged, 2019). According to Benjamin (2012), stated that public organizations agree that providing customer service is one of the most important factors that contribute to the establishment of reputation and credibility among the public. They also argued that the public- complaints of long queues, poor service delivery, and insufficient physical facilities affect the image and level of service quality delivered in public organizations. Many studies have been done about Service quality and Customer Satisfaction (Besfat, 2019).

However, the literature tells us that the studies done on the subject of service quality and customer satisfaction appear to be mostly focusing on the private sector. Nevertheless, if we take the context of developing countries like Ghana the public organizations are mainly the dominant players in service delivery which requires research attention (Benjamin, 2012), and the context of Ethiopia is not different from this fact. From the Ethiopian perspective, several studies have been conducted on service quality dimensions and customer satisfaction. Several research studies on the issue indicated that the service performance of the sectors is not up to the satisfaction level of the public (Tilahun B., 2017). Service quality delivered by public service organizations is inundated with several challenges (Emnet & Habtamu, 2011).

In addition, according to, Tewodros A. (2015). the fact that civil service in many cases has not been able to properly address the rights of service users to get public service equitably has contributed to the prevailing negative perception among the public about the efficacy of government institutions and civil

servants. In Ethiopia, customers usually complain about efficiency and lack of quality excellence in Public Service (Tilahun B., 2018). The service delivery and grievance handling systems of most of the public service organizations are not in a position to fully satisfy the large number of customers (Besfat, 2022). Problems have been observed in delivering services to the public in a manner that satisfies customers (Yoseph, 2011).

A research conducted by Biruktait (2017) one of the major problems in the civil service institutions of Ethiopia was low service delivery systems which could lead to low performance of service delivery. However, most of them were focused on private sectors such as insurance, banks, hotels, and the like (Shimekit, Kelkay Eshetie, Wondoson Seyoum & Seid Hussein Ali, 2016), (Addisalem Tadesse and Desta Yohannes, 2019). Few studies have been done on service delivery and customer satisfaction in public organizations (e.g. Assessment of Service Quality and Customer Satisfaction in Public Service: Evidence from the selected public organization (Tilahun B.,2018), Perceived Service Quality and Patients' Satisfaction: The Case of Wolaita Sodo University Teaching Hospital (Biruktait Girma, 2017). To overcome this problem few published studies conducted in Ethiopia focused on service quality and customer satisfaction at the regional level and sub-cities of Addis Ababa. But, on the zonal level, there is a scant study.

According to researchers Addisalem Tadesse and Desta Yohannes (2019), the dimensions of service quality vary from country to country, from one organization to another organization, and even from culture to culture. So, those studies that were made at the regional and federal level cannot exactly represent the public services of the West Hararge zone.

Furthermore, as far as the researcher's knowledge is concerned, there is no study so far conducted to assess the effect of service quality on customer satisfaction of the West Hararghe Zone Public Service organizations. Therefore, this research was conducted to fill the gap in this regard by assessing the effect of service quality on customer satisfaction in the selected public service sector of the West Hararge zone.

1.3 Research Questions

Based on the identified research problems, this study tried to answer the following questions.

1. What are the levels of customer satisfaction in the public service sector of the West Hararghe zone?
2. What are the relationships between the service quality dimension and customer satisfaction in the public service sector of the West Hararghe zone?
3. What is the effect of service quality dimensions (tangibility, reliability, responsiveness, assurance, and empathy) on customer satisfaction in the public service sector of West Hararghe zone?
4. What are the major challenges that face service delivery in the public service sector of the West Hararghe zone?

1.4   Objective of the Study

1.4.1   General Objective of the Study

The general objective of the study was to assess the effect of service quality on customer satisfaction in the selected public service sector of the West Hararge zone.

1.4.2   Specific Objectives of the Study

The specific objectives of the study are;

• To assess the level of customer satisfaction towards quality service delivery of selected public service organizations
• To assess the effect of service quality dimensions (tangibility, reliability, responsiveness, assurance, and empathy) on customer satisfaction,
• To determine the relationship between service quality dimension and customer satisfaction of selected public service organizations and
• To identify the major challenges that face service delivery of selected public service organizations of West Hararge zone.

Prof. Nehawi Mohammed Jemal

2 Review of Literature
2.1 Concept of Service

The service concept is adapted to the current society's life and is as old as the history of humans. Considered from this viewpoint, there is no generally accepted and complete definition of services. International Business Machine (IBM), in their ongoing research program Services science, lists a random selection of efforts to define services from the literature and suggests that service is a provider-client interaction that creates and captures value (Yuan, 2013).

In review of a wide variety of definitions Hermen (2009) summed it up when he said, "A service is an activity which has some element of intangibility associated with it which involves some interaction with customers or with property in their possession, and does not result in a transfer of ownership. A change in condition may occur and production of the service may or may not be closely associated with a physical product."

In simple terms "Services are deeds, processes, and performances" (Jayaraman et al., 2010). However, in a broader definition, Enyonam (2011), and Benjamin (2012) indicate that "services include all economic activities whose output is not a physical product, and is generally consumed at the time of production, and provides added value in forms such as convenience, amusement, timeliness, comfort, or health which are essentially intangible in nature". Ahmad (2011), on the other hand, defines services as "any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything". He affirms the view that "services are intangible, inseparable, variable and perishable and also added that services normally require more quality control, supplier- credibility, and adaptability".

2.2 Customer Satisfaction

Several researchers emphasized the importance of customer service as a key to organizational success. Arshi et, al. (2013) propound that the most productive output of an organization is the production of customer satisfaction. The real value lies in delivering customer satisfaction which precedes customer retention and profits. Although most organizations understand the importance of this stakeholder, few can commit themselves to achieving customer satisfaction. For them, customer service is an attitude and not a department or competency.

A customer-led company recognizes that its only true assets are satisfied customers. Without satisfied customers, the balance sheet assets are merely scrap. The notion of customers as assets is not a philosophical point, but a hard, economic one. Companies can measure the lifetime value of customers and estimate the potential revenues they will generate. The results can be staggering and should open the eyes of management to the profit implications of being customer-led (Douglas, 2003).

Organizations that understand what customers want and provide a product or service to meet these requirements can gain a competitive advantage and profit. Generally speaking, if organizations improve their communication with their customers commit themselves to delivering customer service, and develop the necessary competencies for it, they will be able to deliver the desired level of customer satisfaction and meet organizational goals (Minazzi R., 2008).

2.3 Conceptual Framework
The conceptual framework shown below revealed independent variables reliability, responsiveness, assurance, empathy, and tangibility with dependent variable customer satisfaction.

Prof. Nehawi Mohammed Jemal

Independent Variable

Dependent Variable
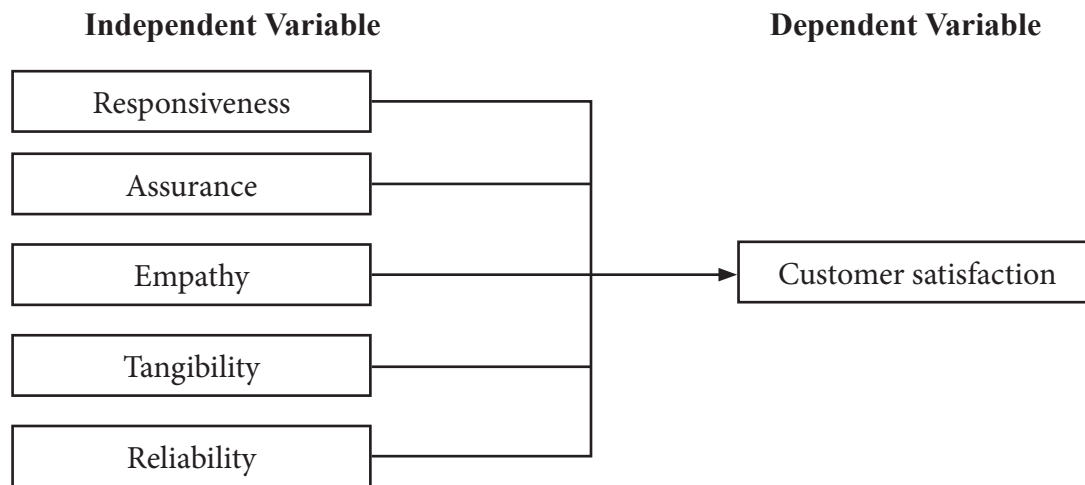
Source: Research Model adapted from Parasuraman, et al, 1988
Figure 1. Conceptual framework

3. Research Methodology
3.1 Research Design

This study employed explanatory research design as a main research design for studying the situations under study to realize the intended research objectives. This study used explanatory research design to understand (get a clearer view of), explain, predict, and control the relationship between variables of the study.

To effectively achieve the objective of the study, the researchers employed a mixed research approach. These approaches were used to create a better understanding of the research problem.

3.1. Target Population of the study
The target population of the study was the total number of customers who accessed services in the selected public services office of three towns of the West Hararge zone.

3.2. Sampling technique and Sample size
3.2.1. Sampling Technique
A purposive sampling technique was used to select three towns from all total towns of the West Hararghe zone. The selected towns namely Chiro, Hirna, and Badesa towns because of their convenient accessibility and proximity to the researchers. In addition, researchers selected three public service institutions by purposive sampling technique. These institutions were: the Revenue Authority, Water and Sewage Authority, and Land Development and Management Office. The selection of these institutions was based on some criteria like high number of customers, large budget allocation, and their importance in the social and economic setting of the town's administration.

The researchers also used a convenient sampling technique to choose customers from these three sectors. In a population where it is difficult to determine the number of population and exactly spot a sample at a time in a given place like customers, using this sampling method is very appropriate to access respondents easily.

3.2.2. Sample Size Determination
To determine the sample size of the customers, the researchers used the unknown population sample size determination formula. This is because of the reason that the numbers of customers getting services in the selected public sectors are not specified and sometimes very specific customers are regularly visiting and revisiting public organizations.

Therefore, the researchers prefer to use the unknown population sample size determination formula of (Kothari, 2004) was used for this study to determine sample size of the study.

$$n = \frac{(Z)^2 pq}{(e)^2}$$

Where;
n = sample size,
Z= the normal distribution value of 95% confidence level
p= prevalence of people who have a similar attribute (probability value of 50%)
q=1-p = 50% (expected non-prevalence)
e=error terms
Therefore, the calculation for sample sizes is the following.

$$n = \frac{1.962 \times 0.5 \times 0.5}{(0.05)^2}$$

$$= 384$$

3.3. Sources of Data
The study has used both primary and secondary types of data. Primary data was first-hand information or data originally obtained by the researchers on the variables of interest for the specific purpose of the study. Secondary data refers to information or data that was collected by another person and is readily available.

3.4. Data Collection Instruments
Primary data was collected by using questionnaires and interviews. An open-ended and close-ended questionnaire was used to collect data from customers of the selected public offices of WHZ. The interview was conducted by using a structured interview with the leaders of selected public services offices of three selected towns of WHZ. Secondary data was also collected by reading and reviewing from annual reports of selected public offices of West Hararge Zone.

3.5. Methods of Data Analysis
The collected data was analyzed using quantitative and qualitative approaches. Quantitative data analysis was done by the use of the Statistical Package for Social Scientists (SPSS) software version 24. Descriptive statistics such as frequencies and percentages, mean, standard deviation and range were used to analyze and present the results. Furthermore, inferential statistics like multiple linear regression, and ANOVA were used.

3.6. Model specification
In this study, a multiple linear regression model will be used to achieve research objectives. The basic objective of using multiple linear regression analysis in this study was used to make the research more effective in assessing the impacts of independent variables (tangibility, reliability, responsiveness, assurance, and empathy) on the dependent variable (customer satisfaction) a regression function is as follows:

$Y = \beta_0 + \beta_1\beta_1 + \beta_2\beta_2 + \beta_3\beta_3 + \beta_4\beta_4 + \beta_5\beta_5 + u_i$

Where; Y is the dependent variable (customer satisfaction)
β_0 = constant
β_{1-5} = the coefficient of independent variables,
β_{1-5} = Independent variables (tangibility, reliability, responsiveness, assurance, and empathy)
u_i =error term.

4 Results and Discussion
4.1 Demographic Characteristics of the Respondents

The demographic information of the respondents includes sex, age, level of education, marital status, and customer experience in the organizations. This aspect of the data analysis deals with the analysis of the personal data of the respondents to whom the questionnaires were given. The table below shows the details of the demographic information of the respondents and their percentages.

Prof. Nehawi Mohammed Jemal

Table 1. Demographic Characteristics of the Respondents

S.No.	Items	Indicator	Frequency	Percentage
1.	Sex			
		Male	219	61.9
		Female	135	38.1
		Total	**354**	**100**
2.	Age	18-35	138	39.0
		36-55	185	52.3
		Above 55	31	8.8
		Total	**354**	**100.0**
3.	Marital Status	Married	236	66.7
		Single	81	22.9
		Other	37	10.5
		Total	**354**	**100**
4.	Respondents Educational Level	Illiterate	81	22.9
		Primary School	94	26.6
		High School	75	21.2
		Diploma	53	15.0
		Degree	48	13.6
		Master Degree	3	.8
		Total	**354**	**100.0**
5.	Respondents Occupation	Private	119	33.6
		Gov't employee	102	28.8
		Farmer	74	20.9
		Student	55	15.5
		Unemployed	3	.8
		Other	1	.3
		Total	**354**	**100.0**
6.	Respondents Organization Experience	Less than 1 month	19	5.4
		2-3 months	66	18.6
		4-5 months	110	31.1
		More than 6 months	159	44.9
		Total	**354**	**100.0**

Source: Survey data (2023

The result of the sex of the respondent from the above table 1 shows that 61.9 % (219) of the respondents were male and 38.1% (135) of the respondents were female. This implies that the number of male customers was higher than female customers.

The above table 1 illustrates the age profile of the respondents. The result shows that 52.3% (185) of the respondents were aged from 36 to 55 years old, whereas 39.0% (138) of the respondents were aged between 18 and 35 years. The remaining 8.8% (31) of the respondents were found aged above 55 years old. Therefore, the majority of the customer of the public organizations were aged between 36-55 years old. This implies that from the total sample of the study youth age groups were more involved in public organizations service delivery.

The result of marital status of the respondents from the above table 1 shows that 22.9 % (81) of the respondents were single, while about 66.7 % (236) were married. About 10.5% (37) of the respondents were in other relationships. This implies that married customers were higher than single customers.

In the above table, 1 shows the educational level of the respondents. The result indicates that 21.2% (75) of the respondents were high school graduates, while 26.6% (94) of the respondents were in primary school. Whereas 15% (53) of the respondents were diploma holders and 13.6% (48) of the respondents were first-degree holders. The result also indicates that 22.9% (81) of the respondents were illiterate and 0.8% (3) of the respondents were master's degree holders.

Thus, the majority of the customers of the organizations were primary school graduates and illiterate followed by high school graduates. This implies that the public organizations had a significant number of illiterate customers. This might be one of the challenges for public organizations in providing quality services to their customers as these groups of customers may not know about the service delivery policies and strategies.

Regarding the type of occupation that the respondents have, the majority of the respondents 33.6% (119) were in private jobs. The result from the following table indicates that about 28.8% (102) of the respondents have government employees, while 20.9% (74) of the respondents were farmers. About 15.5% (55) of the respondents were students while 0.8% (3) of the respondents were unemployed and the remaining 0.3% (1) were in another type of occupation. This implies that the majority of customers of public organizations had participated in private jobs.

The above table 1 demonstrates the length of time that respondents use or are customers of the selected public organizations. Accordingly, 5.4% (19) of the respondents had less than one month experience as a customer of the selected public organizations. Whereas 18.6% (66) of the respondents were a customer of the selected public organizations for a period ranging from two to five months. About 31.1% (110) of the respondents were customers of the selected public organizations for four to five months, while the majority 44.9% (159) of the respondents were a customer of the selected public organizations for more than 6 months. Thus, the data presented in above Table 1 indicates that most of the customers of the selected public organizations in the study area were customers of the selected public organizations for a period of more than six months.

4.2 Level of Customer Satisfaction

Customer satisfaction requires fully meeting customer expectations of services. When performance matches or exceeds customer expectations for service, they are satisfied. If not, they are not satisfied. In premise to this concept, the study tried to analyze customers' level of satisfaction using a five-scale satisfaction level on the service provided by the organization.

Table 2. Respondent's level of satisfaction with the organization's service quality

Item	Mean	Std. Deviation
I am satisfied with the complete range of services of the public office.	2.57	1.349
I am satisfied with the performance of the employees of the public office.	2.69	1.400
I am satisfied of being a customer of the public office.	2.51	1.409
I am satisfied with the public office employee's professional competence.	2.62	1.425
I am satisfied with the quick service of the public offices	2.60	1.343
I am satisfied with the respectful behavior of the employees of the public offices.	2.57	1.370

Source: SPSS output from own survey, (2023).

As presented in above table 2, the mean value failed between 2.51 and 2.60. Except for two items all attributes of the mean showing the majority of respondents disagree with customers' overall satisfaction with the organization's service quality. Therefore, from the analyzed data and obtained information we can conclude that the level of customer satisfaction of those samples selected respondents was not satisfied by the service quality delivered by the selected public organization of WHZ.

4.4 Multiple Regression Analysis
Multiple regression analysis is a form of statistical analysis that seeks the equation representing the impact of two or more independent variables on a single dependent variable. For this study, multiple regression analysis was used to determine the strength of the relationship between the overall service quality dimensions those are contracted on the conceptual framework and customer satisfaction.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.848a	.719	.715	.13343

a. Predictors: (Constant), Empathy, Assurance, Tangibility, Responsiveness, Reliability
b. Dependent Variable: Customer Satisfaction
Source: SPSS output from the survey, (2023).

From the above Table 3, regression analysis of the overall service quality dimensions (independent variables) and customer satisfaction, the model summary revealed that 71.9% (R2=0.719) of the variation in customer satisfaction can explained by the overall service quality dimensions which were constructed under our conceptual framework. Thus, 71.9% of the variation in customer satisfaction can be explained by the 5 service quality dimensions, while the remaining 28.1% (1-R2=0.281) variation in customer satisfaction may be explained by unexplored variables. Therefore, service quality dimensions have a positive effect on customer satisfaction.

4.4.1 ANOVA
The ANOVA table shows the overall significance/acceptability of the model from a statistical perspective with a p-value is less < than 0.05 which indicates the variation explained by the model is not due to possibility. The F-ratio determines whether the model is good for the data. The F-ratio is calculated by dividing the average enhancement in prediction by the model by the average difference between the model and the observed data. If the improvement due to appropriate the regression model is much greater than the inaccuracy within the model then the value of F will be greater than 1 and SPSS calculates the exact probability of obtaining the value of F by chance (Pedhazur, 1982).

Table 4. ANOVA table
ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.857	5	3.171	178.142	.000b
	Residual	6.195	348	.018		
	Total	22.052	353			

a. Dependent Variable: Customer Satisfaction
b. Predictors: (Constant), Empathy, Assurance, Tangibility, Responsiveness, Reliability
Source: SPSS output from the survey, (2023).

The above of Table 4 is to test the fitness of the model in estimating the effects of the independent variables on customer satisfaction, two way ANOVA was carried out where the statistic (F) =178.142, p-value=0.000 which is below the alpha level, i.e. 0.05 was implying that the model was significantly used in predicting the effects of independent variables on customer satisfaction of WHZ Public organization. And the F-ratio for the above model is 178.142, which is very unlikely to have happened by chance.

4.4.2 The Regression Coefficient

The below multiple regression coefficients pertained to the contribution or the effect of each service quality dimension on the dependent variable. From the below table, the beta coefficients indicate how and to what extent the independent variables influence the dependent variable. The predictor variables which have a higher beta coefficient with a lower p-value (p<0.05) have a significant contribution or effect on the dependent variable. Otherwise, predictor variables that have a small beta coefficient and higher p-value have little or no effect on the model.

Table 5. The Regression Coefficient

Model		Unstandardized Coefficients	Standardized Coefficients	T	Sig.		
		B	Std. Error	Beta			
1	(Constant)	.504	.086		5.873	.000	
	Tangibility	.203	.016	.365	12.649	.000	
	Reliability	.133	.016	.242	8.318	.000	
	Responsiveness	.201	.016	.361	12.491	.000	
	Assurance	.147	.010	.430	14.910	.000	
	Empathy	.145	.012	.338	11.870	.000	

Source: SPSS output from the survey, (2023).

The above coefficient table 5 shows the constant beta value (β) and the p-value of the variables to study the significance. Accordingly, the significance level of each variable (P- value) has indicated that tangibility (beta =.203, t=12.649, p=.000) has an influence or significant effect on customer satisfaction followed by responsiveness (beta =.201, t=12.491, p=000), and assurance (beta = .147, t =14.910, p = .000), empathy (beta = .145, t =11.870, p = .000), and reliability (beta = .133, t = 8.318, p = > .000) value have a relatively lower effect on customers satisfaction. The p-values of all the service quality dimensions (independent variables) are below 0.05. This implies that all service quality dimensions (Empathy, Assurance,

Tangibility, Responsiveness, and Reliability) have a significant relationship with the dependent variable (customer satisfaction).

4.4.3 Multicollinearity Diagnose

The multicollinearity test means measuring the correlation between independent variables. The most widely used method of testing multicollinearity is by using the tolerance statistics and variance inflation factor (hereinafter, VIF). As a rule of thumb, if the tolerance statistics is below 0.1 (10%) there is a multicollinearity problem. Also, if the VIF value of variables are more than 10, there will be a multicollinearity problem.

Table 6. Coefficients

Coefficients			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Tangibility	.969	1.032
	Reliability	.954	1.048
	Responsiveness	.968	1.033
	Assurance	.970	1.031
	Empathy	.994	1.006

a. Dependent Variable: Customer Satisfaction
Source: SPSS output from own survey, (2023).

In this study, table 6, shows that the VIF of all the variables was below 10. In addition, the tolerance statistics were more than 0.1 (10%). Thus, there is no multicollinearity problem or there is no perfect correlation among the predictors. This indicates that our data were correct, and the structured equation model we were doing is valid.

4.5 Major Challenges that Prevailed in the Service Delivery Process of WHZ Public Service Organizations

The study investigates the major challenges facing customers to get quality service from selected public sectors of WHZ Administration. The data gathered through open-ended survey questions and interviews showed that the major challenges of the service delivery in WHZ Administration were connected with leadership and managerial problems. Hence, the Lack of skilled and experienced leadership, the lack of proper and participatory planning and implementation mechanisms, instability of officials, inability to lead and make decisions strategically, frequent meetings during working hours, lack of timely response, reluctancy to keep appointments to provide services, inconsistent follow-up, and monitoring, absence of regular consultation with customers and stakeholders, and the presence of political interference in each and everything.

In general, these findings indicated that there were problems of leaders and managerial, structural and technological, behavioral and ethical, and budgetary concerns were the major challenges affecting the provision of quality service and satisfying customers in selected public organizations in WHZ Administration. In line with this, respondents and interviewees articulated that though all these problems are manifesting at different levels, rent-seeking behavior of service providers, shortage of finance, and weak WHZ Administration in general and in sample offices in particular, were the major challenges faced by improving service delivery. The above analysis results were supported by Fentahun, (2022), Muluken M., (2020), and Pradeep, (2011) as these authors also recognized these are the major challenges in decentralized public service delivery. This finding is similar to the finding of Gobena, (2019) that was done to determine the impact of quality service delivery and quality on client satisfaction in Nekemte municipality. Accordingly, the researchers summarized the findings that there were problems in the service delivery process and quality of service. These problems were showing that it was below the customer's expectations. and similarly, Zeritu, (2010) conducted research at Addis Ababa University on "service delivery and customer satisfaction" at Ethiopian Electric Power Corporation's Addis Ababa region customer service center. Finally, based on her results, as a result of the poor quality of service and performance of the organization, the needs, and expectations of customers were not met to the level that they had to be.

Prof. Nehawi Mohammed Jemal

5 Conclusion and Recommendations
5.1 Conclusions

The study assesses the effect of service quality on customer satisfaction in the case of WHZ public organizations. The objective of the research was to assess whether service quality affects customer satisfaction by using five service quality dimensions assurance, reliability; tangibility, empathy, and responsiveness to measure customer satisfaction and service delivery. The research findings indicated that tangibility, reliability, responsiveness, assurance, and empathy were the determinants of service quality in public organizations.

Moreover, the result of the regression coefficients indicated that all the service quality dimensions have a statistically significant effect on customer satisfaction. The study result demonstrated that all the five SERVQUAL dimensions, which are, tangibility, reliability, responsiveness, assurance, and empathy, have a positive effect on customer satisfaction.

Also, the result indicated that the tangibility dimension contributes most towards customer satisfaction; while the empathy dimension contributes least towards customer satisfaction in WHZ public organizations. This means that WHZ public organizations cannot ignore any of the five dimensions of service quality since they all appear to influence customer satisfaction to different extents.

Further, the overall service quality dimensions can explain 71.9% of the variation in customer satisfaction. Therefore, it can be concluded that service quality dimensions as a whole independently contribute immensely to the satisfaction of customers in selected public organizations of WHZ.

5.2 Recommendations
Based on the conclusion of the study the researchers recommended the following possible recommendations for the concerned body.
- WHZ public organization leaders and employees should exert much effort on dimensions of service quality to satisfy its customers by introducing appropriate and easily dated equipment and technology such as computers, data capture systems, sound recorders and converters, information systems, etc). so that the organization delivers quality services to its customers, uses electronic services, and builds attractive and adequate physical and support facilities (such as modern record-keeping, waiting rooms, toilets, halls, parking lot, guest chairs, informative signs, brochures, and posters) to serve and feel comfort its customers until they finish their tasks. Further, they should work more to understand customers' specific needs, take responsibility for addressing problems faced by their customers, and give individualized attention to the interests of their customers.
- The leaders of WHZ public organization should work on the indicators of this dimension. Also, the organization should realize that the improvement of this dimension would enhance customer satisfaction which in turn results in better performance of the organizations.
- The WHZ public organization needs to give more emphasis to improving customer satisfaction power of the five service quality dimensions. In this regard, the organization should undertake continuous improvements and follow-ups that might enhance customer satisfaction levels in the organization's service. The organization in particular can conduct further customer opinion surveys regarding the status of their customer's views on the five service quality dimensions.
- To improve the service, organizations should install an ongoing research system that provides timely and relevant data. Similarly, there is a need to develop an information system in the organization, that helps to identify dissatisfied customers and frequent service failure causes, collect customer feedback on service delivery continuously, create customer forums to get ideas for further improvements, improve internal service quality by focusing on employee issues and concerns, improve customer services by measuring individual employee behavior to use in training, performance evaluations and rewards and analyze the organization's service performance compared with other service organizations to identify strengths and weaknesses.

Prof. Nehawi Mohammed Jemal

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IMPACT OF GDP ON INDIAN FINANCIAL SERVICES - A STUDY OF THE NIFTY FINANCIAL STOCKS

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ABSTRACT

The financial services sector in India exemplifies the advancement and potential of its economy. The sector is projected to have significant growth until 2035, fueled by increasing incomes, a greater emphasis from the government on financial inclusion, and the widespread adoption of digital technology. By the year 2030, it is considered possible that India's digital payments will have surpassed one trillion dollars. This study investigates the influence of Gross Domestic Product (GDP) on Financial Services in India. It aims to determine the correlation between the growth rates of GDP and Nifty Financial Services. This study incorporates data from external sources and encompasses a time frame of 11 years, specifically from 2013 to 2023. Descriptive statistics and one-way ANOVA were employed as statistical methods.

Key Words: *GDP, NIFTY Financial Services, Indian Economy, NSE, Economic Growth, Investments, etc.*

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I. INTRODUCTION

Every nation's capital market is essential because it has the power to alter the national budget and regulate the economy. The capital market is instrumental in the expansion of the economy by facilitating the transfer of capital and enticing new resources. The degree to which the capital market is comprehended and controlled has played a significant role in the industrial and commercial growth of the nation. To expand, the commercial and industrial sectors require long-term funding, which the capital markets supply.

The Gross Domestic Product (GDP) per capita is calculated by dividing a country's total market value of all final goods and services produced by its population. Gross domestic product is a measure of economic size. In terms of nominal GDP, India's economy is currently the sixth biggest in the world. According to purchasing power parity (PPP), it is ranked third. Gross domestic product and GDP per capita are two of the best indicators of industrial activity and living standards. Officials and decision-makers in charge of policymaking must have a firm grasp of the Gross Domestic Product among the most important topics. One way to tell if the economy is growing, shrinking, or in a depression is to look at GDP. The GDP is a measure of a country's wealth and economic vitality. To calculate GDP, one uses the following formula:

GDP = (X-M) + C + I + G.
Whereas C stands for consumption (personal consumer expenditure) annually.
I = All of the nation's private investment
G stands for government expenditure.
X represents the total amount of exports.
M represents the aggregate value of imports, while X-M represents the aggregate value of net exports (which might be negative).

Many factors affect India's GDP growth. These include consumer demand, investment, infrastructure, workforce, etc. Every year, the Economic Survey is presented before the Union Budget providing data on India's GDP growth for the following fiscal year and the current economic situation. Industry, agriculture, and services make up India's gross domestic product. New estimates show that manufacturing will grow by 1.6%, mining by 2.4%, and energy by 9% in FY2023, while agriculture will expand by 3.5%, up from 3% in FY2022.

II. THE INDIAN FINANCIAL SERVICES

India's financial services sector is expected to expand due to increasing incomes, substantial government focus, and the growing rate of digital usage. The sector's long-term fundamentals are strong, but the Indian Government's willingness to involve private firms and foreign participants is expected to be inconsistent.

India's financial sector has encountered numerous obstacles in recent decades, including a significant rise in non-performing assets (NPAs) during the global financial crisis (GFC) and the spike in non-banking financial businesses (NBFCs) in 2018-2019. Credit has not experienced a substantial increase for an extended period, which has resulted in a substantial, unfavorable, and enduring disparity between credit and GDP since 2012. The economy was abruptly disrupted by the COVID-19 pandemic, which raised concerns about the potential rise in corporate defaults and non-performing loans (NPLs) as the financial sector's balance accounts were beginning to improve. Meanwhile, the average growth rate of real GDP was 6.7 percent from 2011 to 2018, but it plummeted to 3.7 percent in 2019 as a result of the NBFC crisis, which occurred prior to the COVID-19 pandemic. Maintaining a robust GDP growth in the near- and medium-term is essential for India to achieve its development objectives and recover from the pandemic.

III THE NATIONAL STOCK EXCHANGE

In 1992, the National Science Foundation (NSF) was established. In April 1993, SEBI accorded it recognition as a stock exchange. The wholesale debt market was introduced by the exchange in 1994, marking the beginning of its operations. The cash market segment was subsequently introduced shortly thereafter. The NSE has been instrumental in

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driving reforms across the Indian securities market with regards to market practices, trading volumes, and microstructure. Streamlined and open clearing, settlement, and trading are hallmarks of today's markets made possible by state-of-the-art information technology. Additionally, the market has experienced a multitude of product and service innovations.

The NSE has operated as a demutualized exchange since its inception; ownership, management, and trading are each controlled by a distinct group of three individuals. A number of well-known banks, insurance firms, and other financial intermediaries' own shares in the National Stock Exchange (NSE). The NSE's management team abstains from all forms of trading on the platform. Because of this, NSE is free to promote public-benefitting policies and practices without fear of bias or conflict of interest. However, the NSE model does not exclude trading members from participation, support, or contribution in any manner; on the contrary, it encourages it. Public representatives, nominees from SEBI, one full-time executive of the Exchange, and renowned specialists in accounting, taxation, law, economics, and finance are all members of the Board. Prominent persons from promoter institutions round out the membership.

IV GDP AND INDIAN FINANCIAL SERVICES

One of the many problems that India's banking sector has had to deal with in the last several decades is the large and negative credit-to-GDP ratio, which has been around since 2012. We look at the link between bank balance sheets, credit expansion, and long-term growth using bank-level panel regressions, and we apply a growth-at-risk (GaR) approach to analyze the impact of cyclical financial conditions on GDP growth. Our sample includes institutional and retail banks. Higher negative tail risks and lower projected growth are the results of a cyclical shift to the left in the distribution of growth caused by negative shocks to credit or increases in macro vulnerability. Higher GDP growth is connected with better capitalized banks with lower non-performing loans (NPLs), according to the long-term results.

Stock exchanges, insurance companies, and NBFCs are all part of the country's financial services industry. In 2023, 30.2% of India's GDP came from its gross savings. There will likely be 12,069 UHNWIs in 2022, and 19,119 in 2027, according to projections. Over the next five years, the number of Ultra-High Net Worth Individuals (UHNWIs) in India is expected to rise by 63%. There will likely be 16.57 lakh UHNWIs in India by the year 2027. Based on the reforms implemented by SEBI, India has secured an impeccable score of 10 in protecting shareholder interests, according to the World Bank's Ease of Doing Business 2020 report.

Within India, the mutual fund business has grown a great deal. In May 2021, mutual fund companies were in charge of more than 100 million folios. There are $658.72 billion (Rs. 54.54 trillion) in assets under management (AUM) in mutual funds as of February 2024. The Systemic Investment Plans (SIPs) that were used in India from April 2023 to February 2024 brought in Rs. 1.79 lakh crore, which is about US$21.73 billion. There was a net flow of $294.15 billion (Rs. 22.16 trillion) into equity mutual funds by the end of 2021. This is better than the 21-month low of $274.8 million (or Rs 2,258.35 crore) seen in November 2022, when there was a net inflow of $888 million (or Rs 7,303.39 crore).

V OBJECTIVES OF THE STUDY

a) Emphasize the significance of GDP in the expansion of the Financial Services in India.
b) Compare the GDP growth rates to those of the Nifty Financial Services Index for the purpose of analysis.
c) Predict the growth of the Nifty Financial Services Index in relation to GDP.

VI METHODOLOGY OF THE STUDY

The investigation is founded upon pre-existing information sourced from the official NSE website. The data was collected throughout the course of eleven years, from 2013 to 2023.

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Tools for analysis founded on statistics
Descriptive statistics and one-way ANOVA were employed to analyze the data in the study.

VII DATA ANALYSIS

Table - 1
Annual growth rates of GDP and Nifty Financial Services (Figures in %)

Year	GDP	Nifty Financial Services
2013	6.39	-7.23
2014	7.41	57.34
2015	8.00	-5.41
2016	8.26	4.93
2017	6.80	41.42
2018	6.45	10.6
2019	3.74	25.65
2020	-6.60	4.47
2021	8.95	13.96
2022	7.00	9.52
2023	7.23	13.2
Average	**5.78**	**15.31**
Standard Deviation	**4.32**	**19.44**
Co-efficient of Variance	**0.7469**	**1.2696**

(Source: Calculation based on information from web)

Table 1 shows that the GDP and Nifty Financial Services' yearly growth rates over an 11-year period were compared. There was variation in GDP growth rates across all years. The growth peaked in 2021 at 8.95% and peaked in 2020 at -6.60%. GDP growth from 2013 to 2016 was more than 5%. From 2016 to 2020, it consistently fell from 8.26% to -6.60%. COVID-19 caused a 10.34% decline in GDP growth in 2020. The Nifty Financial Services growth rates saw a high of 57.34 in 2014 and a low of -7.23 in 2013. All years saw a constant fluctuation in growth returns, with a few exceptions.

Table - 2
Descriptive Statistics of GDP and Nifty Financial Services

GDP	Nifty Financial Services	
Mean	5.78	15.31
Standard Error	1.30	5.86
Median	7	10.6
Standard Deviation	4.32	19.44
Sample Variance	18.67	377.98
Range	15.55	64.57
Minimum	-6.6	-7.23
Maximum	8.95	57.34
Sum	63.63	168.45
Count	11	11

Table 2 displays the statistical measures of the average growth rates of GDP and Nifty Financial Services. The GDP growth rate ranges from a maximum of 8.95 to a minimum of -6.60, resulting in a standard deviation of 4.32. The mean GDP growth rate is 5.78, the median growth rate is 7, and the range is 15.55. The variance of the GDP growth rates is 18.67. The maximum growth rate of Nifty Financial Services is 57.34, while the smallest growth rate is -7.23. The calculated value for the standard deviation is 19.44. The Nifty Financial Services has an average growth rate of 15.31, a median rate of 10.6, and a range of 64.57. The variance of the growth rates in the Nifty Financial Services index is 377.98.

One - way ANOVA – test

H0: The growth rates of GDP and Nifty Financial Services are homogeneous during the study period.
H1: The growth rates of GDP and Nifty Financial Services during the study period are not homogeneous.
Significance Level: The appropriate significance level is 5%.

Prof. B. K. Surya Prakasha Rao **Dr. B. Hari Babu**

Table 3
One-way ANOVA Test

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (Df)	Mean Square (MS)	F Calculated Value	F Table Value
Between Groups	499.4197	1	499.4197	2.51823	4.351244
Within Groups	3966.434	20	198.3217		
Total	**4465.854**	**21**			

Table 3 presents a one-way analysis of variance of the growth rates of GDP and Nifty Financial Services. In this experiment, the hypothesis is being tested at a significance level of 5%. The tabulated value exceeds the calculated value. Therefore, the null hypothesis (H0) is deemed to be valid. The study period indicates a similarity in the growth rates of GDP and Nifty Financial Services, suggesting homogeneity.

VIII CONCLUSION

Based on this study, it is evident that the two variables, GDP and Nifty Financial Services, exhibit a positive correlation in most years. This demonstrates a correlation between GDP and the Financial Services, with both indices exhibiting parallel growth rates. It is evident that the GDP growth rate is positive in all years, except for 2020, when it was negatively affected by the impact of COVID-19. Similarly, the growth of Nifty Financial Services exhibits oscillations in certain years, which can be attributed to the volatility in the Capital Market over the study period. The data suggests that the growth rates of GDP and Nifty Financial Services have exhibited homogeneity, indicating that these two metrics have similar frequencies of increase. Ultimately, it is evident that the Financial Services is greatly impacted by India's GDP.

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CREATING EXCELLENCE: HOW PRODUCTIVITY IS DRIVEN BY EMPLOYEE ENGAGEMENT

"Engaged employees are the spark that ignites innovation, fuels productivity, and drives organizational success. An engaged workforce is the heartbeat of a thriving organization."

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Organizations are constantly looking for methods to achieve long-term success in a corporate environment that is becoming more and more competitive. One component of the many strategies—employee engagement—continually shows up as a crucial productivity driver. It is the foundation of a flourishing workplace and has a direct impact on long-term success, innovation, and organizational performance. It is by no means merely a trendy idea.

Employee engagement

Workplace pleasure or job satisfaction alone is not enough to describe employee engagement. It stands for the emotional dedication workers have to their jobs, their company, and its objectives. Employees that are deeply engaged in their work exhibit zeal, initiative, and commitment. They go above and beyond because they want to, not because they have to, because they have a sense of purpose.

Distinguishing engagement from job happiness is crucial. Engagement is about drive and involvement in the success of the firm, whereas fulfilment is a sign of contentment. One competitive advantage that can produce exceptional outcomes in terms of creativity, productivity, and profitability is an engaged workforce.
The Deep Relationship Between Productivity and Engagement
Prioritizing engagement helps organizations stay ahead of the curve.

Although the causes are complex, the results are unmistakable: motivated workers contribute more, work better, and stay longer.

1. Improved Commitment and Performance

Employees that are engaged are naturally driven to succeed in their positions. They take pride in their work, tackle assignments with passion, and constantly aim for perfection. They go above and beyond expectations because they have a strong feeling of duty, which greatly increases production.

2. Promoting Creativity and Innovation

An innovative staff is also one that is engaged. Workers are more inclined to share ideas and offer solutions when they feel heard and appreciated. Their sense of ownership encourages innovation, which benefits the company by producing better products, new procedures, and improved solutions.

3. Reduced Absenteeism and Turnover

Reduced absenteeism and turnover rates are correlated with high levels of engagement. Workers who are engaged in their work and supportive of company objectives are less willing to look for other possibilities or take unneeded time off. This stability guarantees production continuity while also lowering hiring and training expenses.

4. Improving the Welfare of Employees

Businesses that make engagement investments frequently put their workers' welfare first. Physical and mental health are enhanced by initiatives such as flexible work schedules, mental health assistance, and wellness programs. Employees are more inclined to give their best work when they feel valued, which feeds back into the engagement and productivity loop.

5. Improving Cooperation Among Team Members

When employees are engaged, collaboration flourishes. Workers that are emotionally invested in their teams are better communicators, more eager to share information, and more supportive of one another. Higher productivity results from streamlined processes and more effective group projects due to

this cohesiveness.

6. Getting Used to Change

Adaptability is essential in the fast-paced business environment of today. Because they have a stake in the company's success, engaged workers are more adaptable. Their adaptability and optimistic attitude enable businesses to adjust without sacrificing efficiency, whether it's implementing new technology or changing tactics.

The Advantages of Employee Involvement are as follow

The quantifiable benefits of having an engaged workforce are regularly highlighted by research. Studies show that:

- Teams with high levels of engagement are 17% more productive;
- Companies with high levels of employee engagement have 59% lower turnover rates;
- Incidents at work drop by 41% in engaged settings.
- Businesses with engaged personnel have much higher customer satisfaction ratings.

These statistics highlight the direct link between employee engagement and organizational success. A workforce that is highly engaged not only delivers improved performance but also enriches the overall workplace atmosphere, creating a chain reaction that positively impacts customer satisfaction and profitability.

Strategies for Promoting Employee Engagement

Creating and maintaining a committed workforce requires a thoughtful, multi-dimensional strategy. Organizations must focus on the emotional, professional, and cultural dimensions of their employees' experiences at work.

1. Articulate and Share Purpose

Employees must comprehend how their positions contribute to the overarching organizational goals. By clearly articulating purpose and aligning it with individual aspirations, employees can recognize the

significance of their roles, which nurtures a sense of belonging and dedication.

2. Provide Growth Opportunities

Career advancement is fundamental to employee engagement. Offering training, mentorship, and clear paths for promotion not only enhances skills but also keeps employees motivated and committed to their future within the company.

3. Celebrate and Reward Efforts

Recognizing accomplishments is crucial for sustaining morale and motivation. Whether through formal awards or simple expressions of gratitude, acknowledgment reinforces employees' worth and encourages them to keep striving for excellence.

4. Focus on Well-being

Employees who are engaged flourish in settings where their well-being is a priority. Initiatives that promote physical health, mental resilience, and a balanced work-life demonstrate to employees that their organization values their overall quality of life.

5. Foster Environments of Inclusion

Diversity and inclusion drive innovation and teamwork. When every employee feels acknowledged and respected, organizations can tap into the full capabilities of their workforce.

6. Prepare Managers to Cultivate Engagement

Managers are crucial in promoting engagement. Providing them with the resources and training necessary to support, inspire, and connect with their teams can greatly improve engagement throughout the organization.

Assessing Engagement for Long-Term Success

To manage engagement effectively, organizations need to first comprehend it. Utilizing surveys and feedback mechanisms is essential for pinpointing what enhances engagement and identifying existing gaps.

1. Employee Engagement Surveys

These detailed surveys offer valuable perspectives on employee feelings, highlighting both strengths and areas needing improvement.

2. Pulse Surveys

Concise and regular, these surveys monitor engagement levels in real-time, especially during organizational changes or new initiatives.

3. Lifecycle Surveys

These surveys aim to gather feedback during critical moments in an employee's journey, such as during onboarding, throughout their employment, and at the time of exit, providing insights into the employee experience and factors that influence engagement.

Overcoming Challenges in Engagement

Even with evident advantages, promoting engagement can be difficult. Common barriers include vague communication, lack of actionable feedback from surveys, and inadequate support for middle managers. Tackling these obstacles necessitates a strategic commitment to prioritize engagement at all organizational levels.

Conclusion

Employee engagement acts as a powerful catalyst, transforming workplaces into centres of creativity, teamwork, and excellence. It not only boosts productivity but also improves employee satisfaction, customer loyalty, and the resilience of organizations.

Companies that recognize engagement as a key strategic priority tap into extraordinary potential, fostering environments where employees flourish and businesses prosper. By focusing on purpose, growth, acknowledgment, and well-being, organizations can spark a culture of engagement that drives sustained productivity and success.

In an era where human capital is the most valuable resource, prioritizing employee engagement is essential rather than optional.

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